

Operations Environmental Management Plan

Site C Clean Energy Project

Rev 1.1

August 30, 2024

Site C Dam OEMP

This OEMP has been prepared by appropriately qualified environmental professionals (QEP) including Robin Greiff, EPt, with overall review by Greg Scarborough, RPBio, of BC Hydro.

Approved by:



Greg Scarborough, R.P.Bio, BC Hydro

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Appendix A – BC Hydro Environmental Management System Support Documents

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REVISION HISTORY

Version	Date	Comments
Rev 0	November 28, 2023	Draft submitted to EAO. [In accordance with EAC Condition 74, draft previously shared with the following for review/comments: Peace River Regional District, City of Fort St. John, District of Hudson's Hope and Indigenous Nations.
Rev 1	March 19, 2024	Updated to respond to EAO comments on draft.
Rev 1.1	August 30, 2024	Updated to respond to comments from the Water Sustainability Act Engineer and Independent Environmental Monitor. Section 1.5 – updated to indicate that updated versions of the OEMP will be provided to the Comptroller of Water Rights as well as the EAO. Hyperlinks also updated.

1.0 INTRODUCTION

1.1 BC Hydro

BC Hydro is a Crown corporation owned by the Province of British Columbia. BC Hydro's mandate is to generate, manufacture, conserve, purchase, and sell electricity to meet the needs of its customers. BC Hydro serves 95 per cent of B.C.'s population, delivering electricity safely and reliably to approximately 1.9 million customers.

As the largest electric utility in British Columbia, BC Hydro operates an integrated system with 31 hydroelectric facilities and three thermal generating plants, totaling approximately 12,000 MW of installed generating capacity. The hydroelectric facilities provide over 95 per cent of the total electricity generated and are located in the Peace, Columbia, and Coastal regions of B.C. BC Hydro owns and operates two hydroelectric generation facilities on the Peace River that together account for greater than 30% of the capacity of the electrical power generation facilities in B.C. The existing facilities are operated as part of a coordinated system to allow BC Hydro to respond to seasonal and hourly changes in electricity demand. Site C will be the third generating facility on the Peace River and as a mostly run-of-the-river facility it will be operated in concert with the upstream 2 facilities.

1.2 Site C Project

The Site C Clean Energy Project (the Project) will be the third dam and generating station on the Peace River. W.A.C. Bennett Dam was completed in 1968 and is located 168 km upstream of the Alberta border. The Peace Canyon Dam was constructed in 1976 approximately 23 km downstream of the W.A.C. Bennett Dam near the town of Hudson's Hope. As the third project on the Peace River, the Site C Dam (Site C) will re-use the same water flowing downstream from the two upstream facilities. This will enable Site C to generate approximately 35 per cent of the energy produced at the W.A.C. Bennett Dam with only five per cent of the reservoir area. Once completed, Site C will provide up to 1,100 MW of capacity and about 5,100 GWh of energy each year to the province's integrated electricity system – enough energy to power the equivalent of approximately 450,000 homes or 1.7 million electric vehicles per year in British Columbia.

The components of the Site C Project are:

- Dam, generating station, permanent fishway and spillways
- Reservoir
- Hudson's Hope shoreline protection berm
- Substation and transmission lines to Peace Canyon Dam
- Highway 29 realignment
- Quarried and excavated construction materials
- Worker accommodation
- Road and rail access

The worker accommodation, construction related road access and some quarries will be decommissioned and the areas reclaimed at the end of the Project. Two quarries, West Pine Quarry and Wuthrich Quarry, will remain operational after the Project but will be turned over to the Ministry of Transportation, Highways and Infrastructure.

1.3 Operational Environmental Management Plan Description

This Operational Environmental Management Plan (OEMP) has been developed specifically for operational activities associated with the Site C Project. Development of an OEMP is a requirement of the Environmental Assessment Certificate (EAC; Schedule B, Condition #74), which was issued in October 2014. Specifically, Condition #74 requires that the OEMP be developed by a QEP and include the following plans:

- Hazardous Waste Management Plan
- Ice Management Plan
- Vegetation and Invasive Plant Management Plan
- Waste Management Plan (including Materials Management), and
- Water Management Plan

Each plan must include the following:

- A Clear Statement of Objectives
- Description of potential Project effects, through consideration of baseline conditions and sensitive receptors
- Clear documentation of all applicable legislative requirements that must be adhered to, as well as BC Hydro policies, guidelines and other best management practices that will be followed
- Clear documentation of compliance and effectiveness monitoring to be undertaken
- Description of reporting requirements, and
- Process for revising and updating the Plan.

This OEMP identifies the potential environmental effects associated with operation of Site C and provides mitigation measures to ensure the appropriate level of environmental protection and compliance with BC Hydro Environmental Standards, environmental legislation and guidelines during the lifespan of the Project. This OEMP is intended for use by BC Hydro and its contractors.

This OEMP has been prepared by appropriately qualified professionals (QEPs) with overall review by BC Hydro's Site C Manager of Environmental Performance, Mitigation and Compensation – Greg Scarborough, R.P.Bio.

1.4 Scope of OEMP

The constructed Site C assets operated by BC Hydro include the dam/powerhouse, Indigenous Nations cultural centre, BC Hydro properties acquired for the project, transmission line and its corridor, Hudson's Hope berm, Site C reservoir and its associated boat launches and debris handling facilities, monitoring facilities (e.g., geotechnical, weather, water elevation, etc.), and constructed environmental offsets (e.g., fish habitat sites). This OEMP applies to routine operation and maintenance of these Site C assets. Major capital upgrades and/or alterations to these assets are not considered routine operations and therefore are not subject to this OEMP.

Assets constructed by the Site C Project but that are operated by other parties include the Highway 29 realignments and bridges operated by the BC Ministry of Transportation and Infrastructure (MOTI)

and quarries returned to MOTI for long-term operation. Because these assets are not operated by BC Hydro, they are not covered by this OEMP.

1.5 Revisions to the OEMP

This OEMP will be reviewed every 5 years, or as additional information becomes available concerning operational activities. BC Hydro and its contractors will be responsible for ensuring that all operational activities undertaken for Site C are conducted in compliance with the environmental requirements as defined in the most recent version of the OEMP, BC Hydro Environmental Standards, and applicable legislation, authorizations, and permits.

A copy of any updated versions of the OEMP will be provided to the BC Environmental Assessment Office and the Comptroller of Water Rights.

2.0 OPERATION OF SITE C

2.1 Environmental Policy and Guidance

Operation of Site C will meet the objectives of BC Hydro's Environmental Responsibility Policy which currently (July 2023) states:

“Consistent with our purpose to provide reliable power at low cost for generations, BC Hydro is committed to producing, acquiring, delivering and consuming electricity in an environmentally, socially and financially responsible manner.

We recognize that our energy system causes both positive and negative impacts on the environment and on those with whom we share public resources. Conservation is a key means to avoid negative environmental impacts. Where negative impacts cannot be avoided, we will work to minimize and offset them and sustain resources over the long term.

Specifically, BC Hydro will:

- *Meet environmental requirements defined by legislation, regulation, government directives, and other environmental standards that apply to BC Hydro*
- *Perform beyond environmental requirements where it makes sound business sense*
- *Make decisions about environmental risk and opportunity in accordance with our values in a structured and systematic way to balance competing objectives*
- *Continually improve our environmental performance and our environmental management systems exercising due diligence*
- *Work to reduce historic environmental impacts*
- *Develop and foster an electrical energy conservation culture in B.C. that leads to customers choosing to make a dramatic and permanent reduction in electricity consumption*

- *Seek products, services and new supplies of energy that take into account environmental responsibility*
- *Work cooperatively with stakeholders and First Nations on resource use, management, and conservation to increase public benefits from affected resources*
- *Publicly report on our environmental performance.”*

BC Hydro has developed an Environmental Management System (EMS) that emulates but, except for some component areas, is not certified under ISO 14000. To help staff and contractors understand how to apply the EMS to their work areas, including Operation of Site C assets, a series of Environmental Standards, including Environmental Best Management Practices (EBMPs) and Environmental Field Guides, has been developed to ensure that all BC Hydro work activities are planned and executed in a manner that minimizes the potential for adverse environmental impacts and assures regulatory compliance. These Environmental Standards apply to all work activities undertaken by BC Hydro and its contractors.

To support ongoing compliance with its EMS, BC Hydro has developed an *Environmental Compliance Assurance Program* that is supported by an *Environmental Compliance Evaluation* process (both provided in Appendix A). When non-compliances with any component of its EMS occur, BC Hydro may need to record and manage this non-compliance as an incident according to the Environmental incident Management Procedures (see Appendix A). Depending on the nature of an incident, it may be reported to external regulatory agencies.

3.0 ENVIRONMENTAL MANAGEMENT PLANS

This section outlines the environmental plans from EAC Condition 74 that must be adhered to during operation of the Project.

3.1 Hazardous Waste Management

Objectives

The objectives of this Section 3.1 are to:

- Maintain regulatory compliance
- Outline mitigation measures that will be implemented to manage potential adverse environmental effects of the work activities associated with operation of Site C, and
- Provide direction to supervisors and workers associated with environmental requirements

Baseline Conditions

The Site C Environmental Impact Statement (EIS) provides a detailed description of potential effects of the Project on 22 valued components (VCs)¹ during construction and operation, through the consideration of baseline conditions. Information on baseline conditions for valued components potentially affected by hazardous waste management during operations is described in the following (linked) sections of the EIS:

- [Fish and Fish Habitat – Volume 2, Section 12](#)
- [Vegetation and Wildlife Communities – Volume 2, Section 13](#)
- [Wildlife Resources – Volume 2, Section 14](#)
- [Human Health \(air quality\) – Volume 4, Section 33](#)

The potential environmental effects of hazardous waste on these VCs are described below.

Environmental Effects

Hazardous waste may result in the following potential effects:

- Improper handling, storage, and potential release of hazardous materials to the environment
- Spills to the environment
- Deposition of deleterious substances to a watercourse
- Surface water and groundwater quality effects
- Air quality effects, and
- Impacts to fish and wildlife, and their habitat

Sensitive receptors include watercourses, sensitive habitats and/or species at risk. Sensitive receptors that are present in the work areas must be addressed during planning and undertaking of the works.

Environmental Requirements

Applicable BC Hydro Environmental Standards related to hazardous waste management include:

- EBMPs (See Appendix B)
 - Abrasive Blasting Material
 - Asbestos and Asbestos-Containing Material
 - Batteries
 - Coolants and Antifreeze

¹ Agriculture; Community Infrastructure and Services; Current Use of Lands and Resources for Traditional Purposes; Fish and Fish Habitat; Forestry; Greenhouse Gases; Harvest of Fish and Wildlife Resources; Heritage; Housing; Human Health; Labour Market; Local Government Revenue; Minerals and Aggregates; Navigation; Oil, Gas and Energy; Outdoor Recreation and Tourism; Population and Demographics; Regional Economic Development; Transportation; Vegetation and Ecological Communities; Visual Resources; Wildlife Resources

- Environmental Requirements for Planning and Doing Work
- Insulating Oil
- Mercury and Mercury-Containing Materials
- Paints and Coatings
- Solvent
- Spill Preparedness
- Spill Response

- Environmental Field Guides (see Appendix C)
 - Distribution Oil-Filled Equipment Packaging – Field Guide
 - Environmental Field Guide #10: Stations – Capacitators and Excavations
 - Environmental Field Guide #11: Stations – Oil Transfers and Treatment
 - Environmental Field Guide #12: Oils & Fuels – Transportation, Storage, Use

- Waste Management Standards (See Appendix D)
 - WM-210: Hazardous Waste – General
 - WM-220: Hazardous Waste Disposal
 - WM-230: Hazardous Waste Registration
 - WM-240: Hazardous Waste Storage
 - WM-250: Hazardous Waste Testing
 - WM-260: Hazardous Waste Transportation
 - WM-460: Waste Rags and Sorbents
 - WM-510: Ozone Depleting Substances and Other Halocarbons

Applicable regulations and guidelines related to hazardous waste management include:

- *BC Environmental Management Act*
- Hazardous Waste Regulation
- Spill Reporting Regulation
- Waste Discharge Regulation
- *BC Transport of Dangerous Goods Act*
- *BC Water Sustainability Act*
- *BC Wildlife Act*
- *Canadian Environmental Protection Act*
- *Federal Fisheries Act*
- *Federal Transportation of Dangerous Goods Act*
- A Field Guide to Fuel Handling, Transportation and Storage
- Measures to Avoid Causing Harm to Fish and Fish Habitat
- Standards and Codes of Practice for Projects Near Water
- Standards and Best Practices for Instream Works

Compliance Monitoring

BC Hydro and its contractors will undertake compliance and effectiveness monitoring during operational activities to check for adherence to environmental requirements. If an Environmental Management Plan (EMP) has been prepared for the work, inspections will occur as defined in that EMP. If the work is considered more routine and therefore does not have an EMP, it will follow the

protocols described in Appendix A – i.e., the Environmental Compliance Evaluation Guidance and Environmental Incident Management Procedure – as well as the Environmental Standards and monitoring requirements set out in Appendix B.

Reporting

BC Hydro's Environmental Incident Management System (IMS) is an online tool used by BC Hydro and its contractors to report and track incidents and environmental data. The process for identifying, recording, and following up on environmental incidents and non-conformances is described in the Environment Incident Management Procedure (Appendix A).

BC Hydro and its contractors are responsible for following incident reporting and tracking procedures. Incidents related to Operating Site C assets will be managed within this IMS system and will be reported externally when required under the Spill Reporting Regulation or other agreement with regulatory agencies.

Other environmental reporting related to hazardous waste management (i.e., inspection reports, ECE reports, etc.) will not be reported externally as part of this OEMP but can be made available upon request.

Plan Revisions

Revisions to the Hazardous Waste Management Plan will be undertaken in accordance with Section 1.5 of the OEMP.

3.2 Ice Management

This environmental specification pertains to controlling flows from BC Hydro's Peace River facilities during the project's operational phase so that ice hazards, such as ice jams, are managed during operation in consideration of worker and public safety. For the purposes of this OEMP, ice management excludes other operational ice management requirements such as road ice.

Ice management on the Peace River is a complex process that has evolved since the initial creation of BC Hydro generating facilities on the Peace River in the late 1960s and 1970s. Downstream ice management is coordinated through a voluntary process in cooperation with the Province of Alberta.

Downstream of Site C, the ice cover forms as a continuous ice jam many hundreds of km long (as described in Site C [EIS Vol 2 Appendix G](#)) and must be managed carefully when the ice is forming and breaking up at communities, especially at the town of Peace River, Alberta. The ice cover initially forms far downstream in northern Alberta and works its way upstream. The leading edge of the ice cover is defined as the "ice front". It is a key location point in space and time that defines ice management operations.

Upstream on the Site C reservoir an ice cover is predicted to form as described in the Site C [EIS Vol 2 Appendix H](#). This will be similar to ice formation on other reservoirs consisting of a smooth ice

cover with no ice jamming occurring (like ice forming on a lake). Rougher ice could form if wind waves breakup a thin ice cover. This is a normal process that occurs on other reservoirs and lakes.

Objectives

The objectives of this Section 3.2 are to:

- Maintain regulatory compliance, and,
- Outline the general approach BC Hydro follows to manage river ice downstream of Site C dam to help ensure that ice hazards such as ice jams are managed during operation in consideration of worker and public safety

Baseline Conditions

The Site C EIS provides a detailed description of potential effects of the Project on 22 valued components (VCs)² during construction and operation, through the consideration of baseline conditions. Information on baseline conditions for valued components potentially affected by ice management during operations is described in the following sections of the EIS:

- [Fish and Fish Habitat – Volume 2, Section 12](#)
- [Vegetation and Wildlife Communities – Volume 2, Section 13](#)
- [Wildlife Resources – Volume 2, Section 14](#)
- [Navigation – Volume 3, Section 26](#)

The potential environmental effects of ice management on these VCs are described below.

Environmental Effects

Potential effects of the ice regime include:

- Impacts to downstream infrastructure
- Flooding due to ice dam buildup
- Alterations to normal navigation on river ice

Sensitive receptors include bridge crossings (e.g., at Shaftesbury and Tompkins), communities (e.g., Town of Peace River) and ice roads.

² Agriculture; Community Infrastructure and Services; Current Use of Lands and Resources for Traditional Purposes; Fish and Fish Habitat; Forestry; Greenhouse Gases; Harvest of Fish and Wildlife Resources; Heritage; Housing; Human Health; Labour Market; Local Government Revenue; Minerals and Aggregates; Navigation; Oil, Gas and Energy; Outdoor Recreation and Tourism; Population and Demographics; Regional Economic Development; Transportation; Vegetation and Ecological Communities; Visual Resources; Wildlife Resources

The below section, Environmental Requirements, focuses on the management of the ice regime both downstream and upstream of the dam to mitigate these potential effects.

Environmental Requirements

Downstream ice management

In the early winter, BC Hydro, along with Alberta Environment and Protected Areas (AEPA), forecasts the arrival of the ice front at a location a short distance downstream of the town of Peace River, AB. BC Hydro subsequently implements a flow release regime (ice control flow) at a time that allows for the flow to rendezvous with the ice front at this location, called the Rendezvous Point. Each winter this flow rate is determined by BC Hydro and AEPA and is based on several factors such as local inflows downstream of Site C and the weather forecast. Ice control will be lifted when the ice is deemed strong enough to withstand river level increases and fluctuations. This is determined by measuring the ice thickness to satisfy an agreed upon value by BC Hydro and AEPA. When ice control flow is lifted, Site C discharges can be ramped up to an agreed upon rate. The rate is dependent on the ice front location, whether it is advancing or receding and the weather forecast. This ice control for freeze-up has been implemented every winter to date.

Ice control at breakup is not implemented every year as the start of breakup ice jam flooding is dependent on snowmelt run-off generated from downstream tributaries (the main one being the Smoky River in Alberta) and the ice front location (the ice front has to be upstream of the Town of Peace River in order for there to be a potential for an ice jam flood at the town). If the ice front is upstream of the town and there is sufficient snowpack in the Smoky Basin, AEPA forecasts the run-off from the Smoky and other basins and determines if the total flow in the river under ice jam conditions would exceed the top of the Town of Peace River dykes. If the threshold is forecast to be exceeded, AEPA will request BCH to back off flows from Site C, as much as to water License minimum if required for a few days to a week until the conditions necessary for ice jam flooding at the town pass.

Upstream ice management

Ice jams are not expected to form on the Site C reservoir as water velocities are too low. Also, unlike in a river, the ice does not affect the water level in reservoirs. Hazards associated with ice conditions will occur near the Site C dam due to warmer water upwelling into the approach channel that is likely to produce open leads or a locally thin ice cover. However, these would be confined to between the powerhouse intake/spillway structures and the debris boom upstream of the approach channel that has signage to keep public away from the area so no special ice management should be required for this hazard.

Some open water will occur between Peace Canyon Dam and a location on the Site C reservoir (See Site C [EIS Vol 2 Appendix H](#)), but it will be largely variable and unpredictable. Flow releases from Peace Canyon and Site C would not have a large effect on the timing of formation and melt of ice cover on the Site C reservoir (due to low velocities) and therefore operational changes in flows would not be an effective way to manage the ice regime on the reservoir.

Regulatory Requirements & Agreements

All ice management must be undertaken in accordance with the Project's Conditional Water Licences (132990 and 132991), *Water Sustainability Act*, *Fisheries Act*, and *Canadian Navigable Waters Act*. In addition, BC Hydro and Alberta hold a joint operating procedures manual that provides guidelines for operating the Peace River facilities to manage downstream ice. The JTF manual is periodically updated by mutual agreement between BC Hydro and Alberta as the river ice process science on the Peace River evolves.

Monitoring and Reporting

A downstream ice monitoring program by BC Hydro and AEPA exists (it pre-dates Site C) and monitoring reports are produced by either BC Hydro or AEPA depending on the ice front location. These reports are issued approximately weekly and more often if ice conditions are changing rapidly and there is heightened risk of high water levels near settlements. The reports are sent to wide distribution lists and posted on the AEPA website (<https://rivers.alberta.ca/>). Information in these reports includes:

- Ice Front Locations - Descriptions of ice behavior since the last report in context with environmental factors and a general outlook what the ice front will be doing over the next week based on the weather forecast. Anticipated ice issues such as an increased potential for high water levels due to ice jamming may be included in the report by exception.
- Additional information (such as photographs and satellite images) may be included in the reports to illustrate ice processes as they relate to ice management and also the advancement of river ice science.

Revisions to Plan

Revisions to the Ice Management Plan will be undertaken in accordance with Section 1.5 of the OEMP.

3.3 Vegetation and Invasive Plant Management

Objectives

The objectives of Section 3.3 are to:

- Maintain regulatory compliance
- Outline mitigation measures that will be implemented to manage potential adverse environmental effects of the work activities associated with operation of Site C
- Outline mitigation measures related to management of vegetation and invasive plants while operating the Project, and
- Provide direction to supervisors and workers associated with environmental requirements.

Baseline Conditions

The Site C Environmental Impact Statement (EIS) provides a detailed description of baseline information on Vegetation and Ecological Communities. Please refer to [EIS Volume 2, Section 13 for information](#).

Environmental Effects

Potential environmental effects associated with vegetation and invasive plant management during operation of Site C include:

- Transport and spread of invasive plant species
- Impacts to species at risk, at-risk and sensitive ecological communities, and rare plants, and
- Impacts to agricultural activities

Sensitive receptors include agricultural operations, sensitive habitats and/or species at risk. Sensitive receptors that are present in the work areas must be addressed during planning and undertaking of the works. If sensitive receptors are present, site-specific best practices will likely be required to help ensure work activities are completed in compliance with environmental legislation and to mitigate potential environmental impacts.

Environmental Requirements

During the project's operational phase, vegetation and invasive plants will be primarily managed under the following documents:

- [BC Hydro's Integrated Vegetation Management Plan for Facilities](#)
- [BC Hydro's Integrated Vegetation Management Plan for Transmission and Distribution Power Line Corridors](#)

Additional BC Hydro Environmental Standards related to vegetation and invasive plant management include:

- EBMPs (Appendix B)
 - Environmental Requirements for Planning and Doing Work
- Environmental Field Guides (Appendix C)
 - Approved Practices for Riparian Vegetation – Field Guide
 - Civil Environmental Field Guide #1: Excavations
 - Environmental Field Guide #7: Distribution Maintenance – Clearing for Minor Additions
 - Erosion and Sediment Control – Field Card
 - Road Maintenance Field Guide #1: Site Access and General Conditions
 - Road Maintenance Field Guide #14: Erosion and Sediment
 - Road Maintenance Field Guide #15: Site Revegetation

Applicable regulations and guidelines related to vegetation and invasive plant management include:

- *BC Integrated Pest Management Act*
- *BC Environmental Management Act*
- *Federal Pest Control Products Act*
- *Federal Species at Risk Act*
- Best Practices for Managing Invasive Plants on Roadsides
- Best Practices for Managing Invasive Species on Utility Operations
- Invasive Plant Pest Management Plan for Provincial Public (Crown) Lands in Central and Northern British Columbia
- Measures to Avoid Causing Harm to Fish and Fish Habitat
- Profile of Invasive Plant Species Within the Peace River Regional District
- Standards and Codes of Practice for Projects Near Water

Compliance Monitoring

Compliance monitoring for the management of invasive plants will be undertaken in accordance with the following:

- [BC Hydro's Integrated Vegetation Management Plan for Facilities](#)
 - Section 58(2)(c)(i)(ii)(iii) – description of monitoring program requirements, including monitoring methods, monitoring frequency, and date of data collection, and
- [BC Hydro's Integrated Vegetation Management Plan for Transmission and Distribution Power Line Corridors](#)
 - Section 58(2)(f) – a description of the monitoring program that will be employed for evaluating the effectiveness of the pesticide use on pest populations and the environment, including monitoring methods, frequency of monitoring and data collection

In addition, BC Hydro and its contractors will undertake general compliance and effectiveness monitoring during operational activities to check for adherence to environmental requirements (Appendix A).

Reporting

BC Hydro's Environmental IMS will be used by BC Hydro and its contractors to report and track incidents and environmental data. The process for identifying, recording, and following up on environmental incidents and non-conformances is described in the Environmental Incident Management Procedure (Appendix A).

BC Hydro will also submit reports in accordance with: [BC Hydro's Integrated Vegetation Management Plan for Facilities](#) and [BC Hydro's Integrated Vegetation Management Plan for Transmission and Distribution Power Line Corridors](#).

Revisions to Plan

Revisions to the Vegetation and Invasive Plant Management Plan will be undertaken in accordance with Section 1.5 of the OEMP.

3.4 Waste Management

Objectives

The objectives of Section 3.4 are to:

- Maintain regulatory compliance
- Outline mitigation measures that will be implemented to manage potential adverse environmental effects of the work activities associated with operation of Site C, and
- Provide direction to supervisors and workers associated with environmental requirements

Baseline Conditions

The Site C Environmental Impact Statement (EIS) provides a detailed description of potential effects of the Project on 22 valued components (VCs)³ during construction and operation, through the consideration of baseline conditions. Information on baseline conditions for valued components potentially affected by waste management during operations is described in the following (linked) sections of the EIS:

- [Fish and Fish Habitat – Volume 2, Section 12](#)
- [Vegetation and Ecological Communities – Volume 2, Section 13](#)
- [Wildlife Resources – Volume 2, Section 14](#)

Environmental Effects

Potential environmental effects associated with waste management during operation of Site C include:

- Spills to the environment
- Proliferation of animal attractants
- Deposition of deleterious substances to a watercourse
- Surface water and groundwater quality effects, and
- Impacts to fish and wildlife, and their habitat

³ Agriculture; Community Infrastructure and Services; Current Use of Lands and Resources for Traditional Purposes; Fish and Fish Habitat; Forestry; Greenhouse Gases; Harvest of Fish and Wildlife Resources; Heritage; Housing; Human Health; Labour Market; Local Government Revenue; Minerals and Aggregates; Navigation; Oil, Gas and Energy; Outdoor Recreation and Tourism; Population and Demographics; Regional Economic Development; Transportation; Vegetation and Ecological Communities; Visual Resources; Wildlife Resources

Sensitive receptors include watercourses, sensitive habitats and/or species at risk. Sensitive receptors that are present in the work areas must be addressed during planning and undertaking of the works. If sensitive receptors are present, site-specific best practices will likely be required to help ensure work activities are completed in compliance with environmental legislation and to mitigate potential environmental impacts.

Environmental Requirements

Applicable BC Hydro Environmental Standards related to waste management include:

- EBMPs (Appendix B)
 - Abrasive Blasting Material
 - Environmental Requirements for Planning and Doing Work

- Environmental Field Guides (Appendix C)
 - Civil Environmental Field Guide #1: Excavations
 - Civil Environmental Field Guide #2: Handling Contaminated Soil
 - Civil Environmental Field Guide #3: Placing and Finishing Concrete
 - Civil Environmental Field Guide #4: Pressure Washing for Surface Preparation
 - Civil Environmental Field Guide #5: Reservoir Debris Collection and Disposal
 - Civil Environmental Field Guide #6: Drilling
 - Environmental Field Guide #9: Distribution Maintenance – Vaults, Excavations, Concrete Work, Site Restoration, Blasting

- Waste Management Standards (Appendix D)
 - WM-450: Waste Oil
 - WM-610: Solid Waste – General

Applicable regulations and guidelines related to waste management include:

- *BC Environmental Management Act*
- *BC Water Sustainability Act*
- *BC Wildlife Act*
- *Canadian Environmental Protection Act*

Compliance Monitoring

BC Hydro and its contractors will undertake compliance and effectiveness monitoring during operational activities to check for adherence to environmental requirements. If an Environmental Management Plan (EMP) has been prepared for the work, inspections will occur as defined in that EMP. If the work is considered more routine and therefore does not have an EMP, it will follow the protocols described in Appendix A – i.e., the Environmental Compliance Evaluation Guidance and Environmental Incident Management Procedure – as well as the Environmental Standards and monitoring requirements set out in Appendix B.

Reporting

BC Hydro's Environmental Incident Management System (IMS) is an online tool used by BC Hydro and its contractors to report and track incidents and environmental data. The process for identifying, recording, and following up on environmental incidents and non-conformances is described in the Environment Incident Management Procedure (Appendix A).

BC Hydro and its contractors are responsible for following incident reporting and tracking procedures. Incidents related to Operating Site C assets will be managed within this IMS system and will be reported externally when required under the Spill Reporting Regulation or other agreement with regulatory agencies.

Other environmental reporting related to hazardous waste management (i.e., inspection reports, ECE reports, etc.) will not be reported externally as part of this OEMP but can be made available upon request.

Revisions to Plan

Revisions to the Waste Management Plan will be undertaken in accordance with Section 1.5 of the OEMP

3.5 Water Management

Objectives

The objectives of Section 3.5 are to:

- Maintain regulatory compliance
- Provide general guidance related to how during operations BC Hydro will manage water releases, reservoir elevation and spills within the constraints of regulatory requirements, mainly the Site C Water Licences.

Given the focus of Section 3.5 on how BC Hydro manages flows in the Peace River downstream of Site C and the elevation of Site C Reservoir, this section does not provide details on site water management, drainage, ditch flow, etc. management during the Project's operational phase. Rather, it focusses on the procedures used by BC Hydro to ensure flow releases from Site C and reservoir elevation remain within the water license constraints.

Baseline Conditions

The Site C EIS provides a detailed description of potential effects of the Project on 22 valued components (VCs)⁴ during construction and operation, through the consideration of baseline

⁴ Agriculture; Community Infrastructure and Services; Current Use of Lands and Resources for Traditional Purposes; Fish and Fish Habitat; Forestry; Greenhouse Gases; Harvest of Fish and Wildlife Resources; Heritage; Housing; Human Health; Labour

conditions. Information on baseline conditions for valued components potentially affected by water management during operations is described in the following sections of the EIS:

- [Fish and Fish Habitat – Volume 2, Section 12](#)
- [Vegetation and Ecological Communities – Volume 2, Section 13](#)
- [Wildlife Resources – Volume 2, Section 14](#)
- [Heritage Resources – Volume 4, Section 32](#)

The potential environmental effects of water management on these VCs are described below.

Environmental Effects

Water management for the Project during operations will be carried out in accordance with the Conditional Water Licences for diversion and use of water (CWL 132990) and storage of water (CWL 132991), issued by the Comptroller of Water Rights (CWR). The CWLs set out the following parameters for operation of the project and management of water flow:

CWL 132990: Diversion and Use of Water:

- Maximum quantity of water which may be diverted and used for power generation is 2700 m³/s
- Maintain a minimum flow of 390 m³/s or a minimum flow as ordered by an Engineer under the Water Sustainability Act (Note: Condition 1 of the EAC also contains this requirement)
- Flows may also be released via the auxiliary spillway (up to 2400 m³/s) and/or from the low level outlet gates (up to 6,300 m³/s)

CWL 132991: Storage of Water (Reservoir):

- The water may be stored in the reservoir between the elevations of 460.0 metres, the minimum operating level, and 461.8 metres
- The volume of water authorized to be stored between the minimum operating level and the full supply level is approximately 165 million cubic metres.⁵

Market; Local Government Revenue; Minerals and Aggregates; Navigation; Oil, Gas and Energy; Outdoor Recreation and Tourism; Population and Demographics; Regional Economic Development; Transportation; Vegetation and Ecological Communities; Visual Resources; Wildlife Resources

⁵In addition: Surcharging the reservoir above the full supply level, drafting the reservoir to the full supply level, and drafting the reservoir below the minimum operating level shall be done in accordance with the Operation, Maintenance and Surveillance Manual. The Comptroller of Water Rights may from time to time, order a different operating range than specified in the Water Licence

EIS Volume 2, Section 11.4 (surface water regime) describes the baseline water conditions during operation for the Site C reservoir and downstream flows. Overall, the EIS indicates that the normal operating range of the reservoir will provide an active storage volume 165 million m³, and that the average residence time of water in the reservoir will be 22 days. Due to the limited active storage volume in the reservoir, the Project will have limited influence on the downstream flow regime.

Sensitive receptors include fish and wildlife as well as archaeological and heritage artifacts as described in the EIS.

Environmental Requirements

The management of flow releases and reservoir levels at BC Hydro facilities is a complicated multi-disciplinary process that makes ongoing decisions (often at an hourly and sub-hourly basis) regarding generation facility flow releases and reservoir levels based on multiple inputs like weather predictions, actual rainfall, snowmelt and inflow measurements, load forecasting and actual load, planned or forced outages, system constraints, treaty agreements, commercial agreements, etc. These and other variables will be constantly monitored, and flow adjusted as needed at Site C, to ensure total released flow and reservoir levels remains within the Site C Water License parameters.

At a high level, the rules around how flow (both generator and spill releases) related decisions are made are documented in BC Hydro Generation Operating Order, “Planning Responsibilities for Operations”, while rules around decision making for reservoir elevations are documented in a separate GOO. Various System Operating Orders provide additional requirements, as required, in addition to these two GOOs. These GOOs define responsibilities for a range of BC Hydro personnel in relation to how they will ensure compliance with flow (both generating and spill) and reservoir elevation related requirements. Generation Operating Orders are not public documents so they are not included with this OEMP.

Applicable regulations and guidelines related to water management include:

- *BC Water Sustainability Act*
- *BC Wildlife Act*
- *Canadian Environmental Protection Act*
- *Canadian Navigable Waters Act*
- *Federal Fisheries Act*
- *Federal Migratory Birds Convention Act*
- *Measures to Avoid Causing Harm to Fish and Fish Habitat*
- *Standards and Codes of Practice for Projects Near Water*
- *Standards and Best Practices for Instream Works*
- *Requirements and Best Management Practices for Making Changes In and About A Stream in BC*
- *Manual of Control or Erosion and Shallow Slope Movement*

Compliance Monitoring

BC Hydro will undertake compliance monitoring for water management as follows:

- **Site C Reservoir:** BC Hydro will provide near real-time reservoir level data for the Site C reservoir to measure compliance with the Conditional Water Licences. Once the reservoir is fully operational, this information will be made available on the following public website: [Reservoir Levels](#). If, at any time, the Project operates outside the permitted ranges of the Conditional Water Licences, BC Hydro will take corrective action and inform the Comptroller of Water Rights.
- **Downstream Flows:** BC Hydro will calculate all Project discharges and will store hourly averages of this data into a BC Hydro database. BC Hydro will make this Project discharge data available to the BC Comptroller of Water Rights and other regulators as requested. If, at any time, the Project discharge falls below the minimum Project discharge (390 m³/s), or if the diverted powerhouse flows exceed the maximum allowed (2700 m³/s), BC Hydro will take corrective action and inform the BC Comptroller of Water Rights.

Reporting

BC Hydro's Environmental IMS will be used by BC Hydro and its contractors to report and track incidents and environmental data. The process for identifying, recording, and following up on environmental incidents and non-conformances is described in the Environmental Incident Management Procedure (Appendix A).

In addition to the IMS, BC Hydro has additional reporting requirements related to flow release and reservoir levels. These include:

- Fulfill reporting requirements to the Comptroller of Water Rights as defined in Water Sustainability Act Orders and Water Licences (e.g. notifications)
- Prepare and submit compliance reporting to the CWR as required, including an Annual Report on BC Hydro Generation
- Report any inconsistencies with Water Licences or Orders to the CWR in a timely manner;
- If a reservoir elevation parameter is exceeded and a variance has not been granted, BC Hydro shall report the event to the CWR and discuss how the reservoir is to be managed

Revisions to Plan

Revisions to the Water Management Plan will be undertaken in accordance with Section 1.5 of the OEMP.

4.0 OEMP REFERENCES

- BC Hydro. 2011. Site C Clean Energy Project: Project Description. Available at: https://www.sitecproject.com/sites/default/files/site_c_project_description.pdf
- BC Ministry of Forest, Lands, Natural Resource Operations and Rural Development. 2021. Invasive Plant Pest Management Plan for Provincial Public (Crown) Lands in Central and Northern British Columbia. Available at: https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/invasive-species/pest-management/pmp_northernbc_402-0680-20_25.pdf
- BC Ministry of Transportation and Highways. 1997. Manual of Control of Erosion and Shallow Slope Movement. Available at: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/environment/references/man_control_erosion.pdf
- BC Ministry of Transportation and Infrastructure and Invasive Species Council of British Columbia. 2021. Best Practices for Managing Invasive Plants on Roadsides. Available at: https://bcinvasives.ca/wp-content/uploads/2021/01/Weeds_Roads_BMP_Guide-2019-web.pdf
- BC Ministry of Water, Land and Air Protection. 2002. A Field Guide to Fuel Handling, Transportation and Storage. Available at: https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/oilandgas/fuel_handle_guide.pdf
- BC Ministry of Water, Land and Air Protection. 2004. Standards and Best Practices for Instream Works. Available at: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/bc-timber-sales/ems-sfm-certification/business-area/kamloops/standards_bmp_for_instream_works_2004.pdf
- Fisheries and Oceans Canada. 2021. Standards and Codes of Practice for Projects Near Water. Available at: <https://www.dfo-mpo.gc.ca/pnw-ppe/practice-pratique-eng.html>
- Fisheries and Oceans Canada. 2019. Measures to Avoid Causing Harm to Fish and Fish Habitat. Available at: <https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>
- Government of BC. 2022. Requirements and Best Management Practices for Making Changes In and About a Stream in British Columbia. Available at: <https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/working-around-water/wsa-cias-requirements-bmps.pdf>
- Invasive Species Council of BC. 2014. Best Practices for Managing Invasive Species on Utility Operations. Available at: https://bcinvasives.ca/wp-content/uploads/2021/02/BMP_Utility_Operations_2014.pdf

Peace River Regional District. 2022. Profile of Invasive Plant Species Within the Peace River Regional District. Available at:
https://prrd.bc.ca/wp-content/uploads/page/invasive-plants/PRRD-Profile-of-Invasive-Plant-Species2022_2025-Web.pdf

APPENDIX A

BC Hydro Environmental Management System Supporting Documents

Appendix A
BC Hydro Environmental Management System Supporting Documents

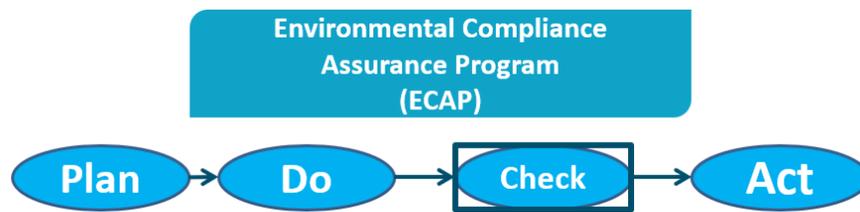
Environmental Compliance Assurance Program Overview
Environmental Compliance Evaluation Guidance
Environment Incident Management Procedure

Environmental Compliance Assurance Program

Environmental Strategic Objective: Be in Environmental Compliance

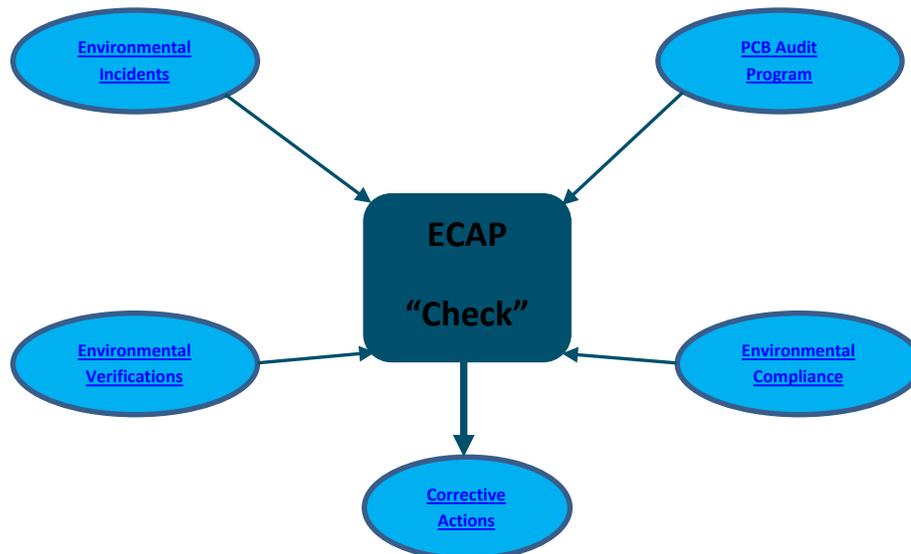
Our Environment Compliance Assurance Program (ECAP)

Our ECAP forms the “check” element of the Plan-Do-Check-Act cycle. Environment Performance are responsible for delivering the Program. The Program includes assurance of compliance to legislation as well as conformance to our BC Hydro Standards, Practices and Procedures. Our [Compliance Fact Sheet](#) has more information about what exactly we mean by compliance and conformance.



Elements of the ECAP:

Click on the links in each bubble to learn more about the inputs and output of our ECAP.



Benefits of the ECAP:

- Highlights good work practices.
- Provides evidence of due diligence for stakeholders and regulators.
- Informs continual improvement.
- Helps us to understand our compliance risks.
- Helps us tell stories of our compliance picture through data.

Section A: Planning Environmental Compliance Evaluations (ECEs)

Environment Performance maintains a rolling pipeline of potential ECEs. ECEs are completed annually to assess areas of high environmental risk, and areas where the risk of environmental compliance is unknown. For details on the purpose, and roles and responsibilities for *completing* ECEs see the [Environment Compliance Evaluation Fact Sheet](#).

Types of ECEs:

ECEs may be assessing Capital or Operational work and processes.

1. **Process ECEs** are typically desk top based assessments, comprising of:
 - Documenting a work process and the environmental controls at each stage.
 - Reviewing targeted or sampled projects against the work process for control gaps / risks.
2. **Field Assessment ECEs** include a desk based review of work planning, as well as observation of work in the field.

All ECEs include:

- Highlighting positive work practices.
- Gathering evidence for compliance and conformance through interview, document and record review, and data analysis.
- Understanding and assessing if environment controls are realistic and effective through discussion with users.
- Recommending corrective actions.

Updating the pipeline continually:

Throughout the year Environment Performance seek out ECEs opportunistically through:

- Encouraging and documenting recommendation from peers and clients on the ECE Pipeline.
- Recommending ECEs as an option when non-compliance or non-conformances are found.
- Identifying high risk projects.

Annual update as part of fiscal year planning:

Environment Performance completes an annual review of the ECE pipeline in the first quarter of each fiscal. The review includes:

- An analysis of compliance data to identify trends in risks associated with Environmental Risk Categories, work types, locations, project types, geographic locations, and others identified as part of the planning process.
- Presenting this information during planning sessions with PERM, EFO, and SMEs to inform discussions where participants are asked to identify high risk options for ECEs.
- Reviewing the pipeline against the risk assessment to prioritize identified consultee recommendations.

It is the responsibility of ECE Pipeline Consultees to recommend areas of risk as potential ECEs. This may include work types, projects, environmental risk categories, or other environmental risk area identified.

The final ECE Pipeline will include at least a 50% contingency to the target number of ECEs, in order to allow flexibility to accommodate delays and restrictions on accessing work.

Where resources outside of Environment Performance are required to complete the ECE, this should be identified and agreed to by the associated Responsible Manager as part of ECE Planning (e.g., SMEs, PERM or EFO Representatives).

Section B: Completing ECEs

1. Assembling the ECE Team

Environment Performance members facilitate ECEs (Environment Performance Representative). The assigned Environment Performance Representative will assemble the team by coordinating any previously identified SME/PERM/EFO designated resources and any contractor resources as required. The Environment Performance Representative may decide to procure a Contract Lead Evaluator or may assume the role of Lead Evaluator themselves.

2. Finalizing the Scope and Criteria

The ECE Team will meet and plan the best approach to gathering evidence to evaluate compliance associated with the identified risk. The Environment Performance Representative will provide a scope proposal to the team, and examples of similar ECEs to support the discussion. During this session the scope and criteria will be agreed, and next steps will be identified and assigned to the ECE Team.

3. Informing stakeholders

When the scope has been finalized, the Environment Performance Representative will reach out verbally to introduce the ECE to the Responsible Manager associated with the work, and the relevant EFO Regional or PERM Manager supporting the work. The Environment Performance Representative will provide the Responsible Manager with the ECE Factsheet. After verbally agreeing scheduling (including availability of interviewees to support desktop ECEs) and identifying key contacts, the Lead Evaluator will update the ECE Communications Template (see Appendix A) and distribute to the Environment and Responsible Managers.

4. Collecting evidence

Examples of evidence collection include:

- Field visit observations
- Interviews
- Documents and records
- Photos

5. Positive Observations and Corrective Actions

Positive Observations are identified and included in the ECE Report. These are key to fairly assess the work, and as part of our compliance tracking and analysis work.

Environmental Compliance Evaluation Guidance Document

Corrective Actions are developed in accordance with the BC Hydro [Corrective Action Development Guide for Managers](#). After development the Environment Performance Representative is responsible for meeting proposed the Corrective Actions Plan (CAP) assignees to discuss, revise, agree or propose the reassignment of actions.

6. Closing the ECE

Following CAP agreement the Environment Performance Representative will close the ECE, file the report and CAPS in IMS and file the final report in Envirohub. The final report will be distributed to CAP assignees, Responsible Managers, and other interested parties identified as part of the ECE.

At the Responsible Managers request the ECE may include a closing meeting. These meetings are facilitated on a case-by-case basis depending on the requirements.

Roles and Responsibilities:

Role	Responsibility
ECE Program Lead	1. Maintains the ECE Pipeline 2. Produces the analytic materials to support Consultee discussions. 3. Responsible for the success of the ECE Program. 4. Assigns ECEs to the Lead Evaluators as required
Lead Evaluator	1. Leads the ECE Team 2. Ensures the accuracy of the findings and that each one is evidence based. 3. Drafts corrective actions for each finding. 4. Delivers the draft report for review by the ECE Team.
Environment Performance Representative	1. May act as the Lead Evaluator and Lead the ECE Team. 2. Drafts the ECE Checklist and coordinate review by the applicable SME. 3. Assembles an ECE Team. 4. Informs the responsible person in Environment (i.e. EFO Regional Manager or PERM Manager) that the ECE is proceeding. 5. Coordinates a field visit, if applicable, with the responsible manager and other relevant personnel. 6. Reviews proposed CAPs, identify proposed CAP owners, and set up meetings to agree CAP text and deadline. 7. Files the ECE report in IMS and Envirohub. 8. Communicates with Environment Managers as required.
ECE Pipeline Consultees	Contributes ideas for high risk ECEs based on their area of expertise both throughout the year as they become apparent and as part of annual pipeline planning.
Subject Matter Expert	1. Review the ECE checklist for completeness and accuracy 2. Provide timely answers when asked for clarification on questions from the ECE Team. 3. Escalate regulatory noncompliance findings to the relevant Environment Manager.
ECE Team	1. Complete the ECE by collecting evidence to support positive observations and deficiencies, using a checklist where applicable. 2. Reviews the draft report and evaluation findings.
Interviewees	Provide evidence at the request of the ECE team.
Proposed CAP Owners	Decides to accept, reject, or adjust CAPs. Provides justification for CAP rejection.
Agreed CAP Owners	1. Provides a deadline for agreed CAPs and complete agreed action within the agreed timeframe. 2. Where CAPs cannot be completed within the agreed timeframe provides a reason and revised deadline to the Environment Performance representative.

Environmental Compliance Evaluation Guidance Document

Appendix 1: ECE Email Communication Template

Hello **XXXX**,

As discussed verbally, BC Hydro's Environment Performance group is looking to perform an Environmental Compliance Evaluation (ECE) on the **[insert project, facility or work type]** at **[location]** on **[date and time]**. We are hoping a **[required escort and key interviewee]** will be available to provide access to support the ECE?

The ECE team would include **xxx** members of personnel from Environment Performance **[contractors if applicable]** and require approximately **[number of]** hours at the **facility / project site**.

For your information, here is a brief outline of the scope of the ECE:

The objective of this ECE is to:

- Highlight positive work practices.
- Evaluate compliance with BC Hydro standards and procedures.
- Make recommendations for process improvements to achieve compliance, if applicable.

ECE evidence will be gathered through:

- Review of the **site / work**, and associated documentation and records.
- Interview of personnel, when work allows.
- Other – as identified during the assessment.

Deliverables:

- ECE report that includes positive observations, and corrective actions, as applicable.

ECE Team

- Name / Job Title / Department

For more information please see our [Environment Compliance Evaluation Fact Sheet](#). Please feel free to give me a call if you have any questions regarding the ECE.

Environment Incident Management Procedure

Overview

Incident management is an integrated system to identify and record undesirable events resulting from a loss of control (the 'incident'). The primary outcome of the incident management process is the identification of what went wrong and what can be put in place to prevent re-occurrence.

BC Hydro has accountabilities to monitor the hazards, and consequences of our system interacting with the environment, as well as the safety of our employees, our contractors, and the public.

The environment incident management procedure addresses all four of these areas of accountability. The incident management procedure is one component of the overall SHE Management System and is supported by the information technology (IT) platform of SAP IMS.

Safety Incidents:

A safety incident is one that injured (injury/illness), or had the credible potential (near miss) to injure a BC Hydro employee, BC Hydro contractor, or a member of the public (while interacting with our assets).

Environmental Incidents:

An environmental incident is one that caused, or had the credible potential to cause (near miss), one or more of the following:

- Adverse impact on the quality of air, land or water, wildlife, aquatic species or species at risk;
- Exceedence of compliance requirement limit(s) as documented in a regulatory instrument (i.e. permit, order, license, authorization, agreements, etc.);
- Violation of legislation, related policies or regulations;
- External reporting requirement derived from a commitment, especially if attached to a non-routine or unexpected event;
- Notification to external agencies due to an emergency beyond normal circumstances;
- Adverse publicity with respect to the environment;
- Alteration of, or damage to, heritage or archeological resources; and
- Legal or regulatory action with respect to any of the above.

While safety and environmental incidents are managed by the same overall business process and IT platform (SAP IMS), the criteria and thresholds for

incident reporting, investigation and follow up are different. As such, incident process guidance is documented separately for safety and environment.

When an incident has safety and environmental consequences, the incident shall be recorded twice in SAP IMS as a safety incident and an environmental incident. The incident records can then be linked in the IT system.

Environment Incident Management Procedure contents

This document represents the recommended normal process for identifying, recording and following up on incidents with an environmental consequence(s). This document is organized by the following process steps: (see Appendix 5 for a schematic of the steps).

- Step 1:** Ensure safety and containment at an incident scene and immediate reporting
- Step 2:** Classify the incident
- Step 3:** Notify – Send Initial Notification
- Step 4:** Initial Assessment (Triage)
- Step 5:** Investigate & Analyze
- Step 6:** Correct
- Step 7:** Report & Record Investigations and Corrective Action Plans (CAPs)
- Step 8:** Track & Monitor Investigation Reports and CAPs

Appendices:

- Appendix 1: Environmental Incident Classification Guidance
- Appendix 2: Level 1 Investigation Process
- Appendix 3: Level 2 Investigation Process
- Appendix 4: Developing Corrective Action Plans (CAPs)
- Appendix 5: Process Summary Schematic

Step 1: Ensure safety and containment at an incident scene and any immediate reporting required

Purpose

To ensure that:

- (if applicable) injured persons are treated, and, further injury does not occur,
- further environmental impact does not occur (i.e., spill containment),
- the scene is preserved for investigation, and
- that immediate reporting, if required, is performed.

Responsible

- All personnel who are at the incident scene
- Responsible Manager (as soon as practical)

Process

- For guidance on incident scene management for emergencies, use and customize the [Emergency Response Matrix](#).
- Determine if the incident is reportable to regulatory bodies. Contact your Environmental Field Services representative if you require assistance.
- In addition, for serious incidents (i.e. emergencies), the manager responsible for the people, process and/or asset involved must ensure that Senior Management, the Duty Coordinator, and Environmental Risk Management are notified as appropriate. Contact the Duty Coordinator at **1-888-219-1145** from any phone in B.C.

Outcome

Safety issues are addressed, further environmental harm is mitigated, the scene is preserved and all necessary initial communication is completed.

Step 2: Determine the type and classification of the incident

Purpose

BC Hydro has accountabilities to monitor the safety of our employees, our contractors, and the public interacting with our system, as well as how our operations impact the environment. Incidents are loss of control events that may result, or have the potential to result in consequences to people (safety), and/or the environment (environmental). Environmental incidents are required to be reported using SAP IMS and a subset of these requires further investigation.

Responsible for incident reporting

Although any BC Hydro employee can report an incident in SAP IMS, the manager responsible for the people, process(es) and/or asset(s) involved is accountable for ensuring the incident is reported.

Process

Safety and environmental incidents both need to be reported in SAP IMS. When an incident has safety and environmental consequences, the incident shall be recorded twice in SAP IMS, as a safety incident and an environmental incident. The incident records can then be linked in the IT system.

For any safety consequence see the Safety Incident Management Procedure for details on classification and investigation requirements.

Environmental Incidents:

An environmental incident is one that caused an impact to the environment, or had the credible potential (near miss) to cause an impact to the environment.

Incidents reportable in IMS are classified as Level 1, 2, 3 – Spill/Pollution, Fish/Water, or Other – impacts or Near Miss as outlined in the tables below. Use the guidelines and examples provide further in this section to assist with the classification of Near Miss incidents.

Environmental Incidents:

- A. Determine the classification of the incident to be reported in the SAP IMS. The incident is reportable in the SAP IMS if any of the following occurred (including, but not limited, to the examples provided):

Classification	Spill / Pollution	Fish / Water	Other
Defined as:	Spill or release of any contaminant (i.e., oil, fuel, PCB or chemicals).	Discharge of deleterious substances into fish-bearing water.	Landslides, erosion, or floods caused by BC Hydro as they affect terrestrial (land) quality. Dust storms in drawn-down

	<p>Sudden and uncontrolled emission or discharge of air pollutants (e.g. NO_x) or sudden and uncontrolled gaseous releases (e.g. SF₆, H₂, HCFC-22 refrigerant, propane, compressed CO₂, natural gas).</p>	<p>High or low flows, or flow changes, that adversely affect fish or fish habitat, terrestrial habitat, wildlife or recreation.</p> <p>Work and/or removal of vegetation in or near water bodies without regulatory approval.</p> <p>Water quality issues (septic; erosion)</p>	<p>reservoirs.</p> <p>Adverse impacts on plants or animals or their protected habitat.</p> <p>Forest fires caused by BC Hydro.</p> <p>Any ground disturbance (i.e. setting a new pole) where an archaeological site is encountered, or the removal of culturally modified tree (CMT).</p> <p>Violation of pesticide use, storage or application regulations and approvals.</p> <p>Other environmental issues resulting in violations of regulations, permits or approvals, including Approved Work Practices (e.g., Approved Work Practices for Riparian Vegetation).</p>
But also consider:	Incidents caused by contractors working for BC Hydro must be reported in the SAP IMS.		

B. Determine the severity level of the incident to be reported in the SAP IMS

The Levels of environmental severity are based on the need for consistency across BC Hydro (Generation, T&D, Properties) and the need to align with severity levels for safety because a 'Level 1' environmental incidents should have a similar level of impact to the organization as identified on the consequence scale of the corporate risk matrix as a 'Level 1' safety incident and have a similar approach to response and investigation.

Using the guidance below, field staff should use their best judgement to determine the level of severity at the time of environmental incident notification. As per the corporate standard for reporting incidents, it is important to enter the details about the incident in the system within 24 hours.

For initial notification purposes, staff should not be concerned about assigning the most accurate classification and severity level because the incident will be reviewed subsequently by other Environmental Risk Management staff.

The incident will be reviewed by other Environmental Risk Management staff to make the final determination of the classification and severity level along with other related consequences (regulatory, reputation, financial by using the Environmental Risk Calculator). Incident classification, severity level and risk matrix consequences can be viewed via reports from the SAP IMS system. For additional guidance on classifying environmental incidents see Appendix 1.

The severity levels are based on and align with the BC Hydro Environmental Risk Matrix (see below) and the BC Hydro corporate risk matrix.

BC Hydro Risk Matrix							
	Level 3		Level 2			Level 1	
Frequency of Occurrence							
100/year =< f <= 1000/year	3	4	5	6	6	6	6
10/year =< f <= 100/year	2	3	4	5	6	6	6
1/year =< f <= 10/year	1	2	3	4	5	6	6
1/10 years =< f <= 1/year	1	2	3	3	4	5	6
1/100 years =< f <= 1/10 years	1	1	2	3	3	4	5
1/1,000 years =< f <= 1/100 years	1	1	1	2	3	4	5
1/10,000 years =< f <= 1/1,000 years	1	1	1	2	2	3	4
f < 1/10,000 years	1	1	1	2	2	3	4
Consequence	AA (S0)	A (S1)	B (S2)	C (S3)	D (S4)	E (S5)	F (S6)
Environment	Almost zero	Low impact	Moderate impact	Moderate to High impact	High impact	Very High impact	Extreme impact
Extent of Damage	<10m ²	10m ² - 100m ²	100m ² - 1000m ²	1000m ² - 1ha	1ha - 10ha	10ha - 100ha	100ha - 1000ha
Duration of Damage	<2 hr	2-24 hrs	1 - 7 days	1 - 4 weeks	1 - 12 months	1 - 10 years	>10 years
Damage intensity	Minimal	Slightly reduced	Moderately reduced	Moderate to Highly Reduced	Highly reduced	Very highly reduced	Eliminated
Sensitivity	Zero	Low	Moderate	Moderate to High	High	Very High	Extreme
Reputation	None	Complaints to company or shareholder	Negative local profile	Small but vocal minority of customers critical	Many customers critical	Loss of trust - strategic change imposed by regulator/shareholder	Loss of consent to operate
Regulatory	Incident reported internally	Required reporting of Issue/Incident to regulator - no follow up by regulatory body	Regulatory body has some interest in the incident	Conduct questioned by regulatory body - corrective action required	Loss of trust from regulatory body - relationship severely harmed	Operational and/or strategic change imposed by regulator	Criminal investigation
Finance	(<10K)	(\$10K - \$100K)	(\$100K-\$1M)	(\$1M - \$10M)	(\$10M - \$35M)	(\$35M - \$100M)	(\$100M - \$1B)

The following classification tables further describe and provide support in determining the classification and level of severity of environmental incidents:

SAP IMS Environmental Level and Classification Tables

LEVEL of Severity	Spill / Pollution – General Examples	Fish/Water – General Examples	Other – General Examples
LEVEL 1 Any incident that results in a high or very high environmental impact.	Large volume releases (e.g., oil) resulting in long term impact to large area of environment. Environmental remediation is expected to be complex and long term.	Major event that would result in a measurable fish population or habitat impact such as: Major dewatering event (e.g., unplanned generation outage or drawdown). Major flooding event (e.g., due to a structural failure, dam breach or major reservoir level exceedence). Major reduced water quality event lasting several days and exceeding established guidelines.	>1 ha – 1000 ha land damaged. Large impact to species at risk and/or their protected habitat. Impact to highly sensitive land.
LEVEL 1 Risk Matrix alignment: S4 - S6 Consequence Level Environmental Incidents	Any of the following criteria - singular or in combination: Extent of damage (range): 1 ha – 1000 ha Duration of damage (range): 1 month – >10 years Damage intensity (range) : Environment is highly reduced to eliminated Sensitivity of environment (range): High to extreme		

LEVEL of Severity	Spill Pollution – General Examples	Fish/Water – General Examples	Other – General Examples
<p>LEVEL 2</p> <p>Any incident that results in a moderate environmental impact.</p> <p>INCLUDES:</p> <ul style="list-style-type: none"> - interest from regulatory body or - conduct questioned by regulatory body, and corrective action required 	<p>Moderate volumes of materials (e.g., oil) spilled to the environment resulting in several days of remediation or clean up.</p>	<p>Water license violation and questions or corrective actions required from Comptroller.</p> <p>Several, multiple individuals of any fish species observed to be impacted by generation operations.</p> <p>Moderate impacts to riparian area or fish habitat; Total Dissolved Gas (TDG) impacts.</p>	<p>Impacts to land - 100 m² to <1 ha of land.</p> <p>Impacts to several, multiple individuals of any wildlife species.</p> <p>Medium level heritage / archaeology incidents.</p>
<p>LEVEL 2 Risk Matrix alignment:</p> <p>S2 – S3 Consequence Level Environmental Incidents</p>	<p>Any of the following criteria - singular or combination:</p> <p>Extent of damage (range): 100 m² – <1ha</p> <p>Duration of damage (range): 1 day – >1 month</p> <p>Damage intensity (range) : Environment is moderately to highly reduced</p> <p>Sensitivity of environment (range): Moderate to high</p>		
LEVEL of Severity	Spill/Pollution – General Examples	Fish/Water – General Examples	Other – General Examples
<p>LEVEL 3</p> <p>Any incident that results in a low environmental impact.</p>	<p>Minor, small spills (e.g., oil) spilled to the environment and cleaned up within 24 hours.</p>	<p>A single or few individuals of any fish species or fish habitat impacted.</p> <p>Increased turbidity due to erosion (water quality).</p>	<p>10 – <100 m² impacted of low sensitivity land.</p> <p>Minor impacts to any wildlife species.</p> <p>Minor heritage / archaeology incident.</p> <p>Minor impacts to riparian vegetation.</p>
<p>LEVEL 3 Risk Matrix alignment:</p> <p>S0 – S1 Consequence Level Environmental Incidents</p>	<p>Any of the following criteria - singular or combination:</p> <p>Extent of damage (range): <10 m² – <100 m²</p> <p>Duration of damage (range): <2 hours – 24 hours</p> <p>Damage intensity (range) : Environment is minimally to slightly reduced</p> <p>Sensitivity of environment (range): Zero to low</p>		

NOTE: If more than one classification and level are involved in a single incident, enter the incident notification under the classification with the highest severity level (e.g., if the incident appears to have a level 3 wildlife consequence and a level 2 spill consequence, choose Level 2 Spill). All environmental impacts associated with an incident can be documented in one incident record in SAP IMS.

C. Was this incident a Near Miss?

Environmental near miss incidents can be and are encouraged to be reported when the incident could credibly have resulted in an environmental impact. The purpose of reporting near miss incidents is to share learnings with others and to foster continual improvement. Near miss incidents are classified per the Level 1,

2, 3 Spill/Pollution, Fish/Water, and/or Other classification scheme outlined in the tables above.

Use the following guidelines and examples to assist with the classification of Near Miss incidents that:

- do not result in an environmental impact **or**,
- have resulted in environmental impact but are better classified at a higher level within the 'near miss' reporting matrix.

Use the following guidelines and examples to assist with the classification of Environmental Near Miss incidents:

Near Miss Level	Guidance & Examples
Level 1 Near Miss	<p>No Level 1 environmental incident occurred, but the incident involves an event that could have credibly resulted in a high or very high environmental impact. This includes:</p> <p>The incident could have caused a Level 1 environmental consequence. The incident had credible potential for a high or very high environmental impact,</p> <p>Incidents caused by uncontrolled hazards where only luck or circumstance prevented a Level 1 incident (i.e. all barriers failed).</p> <p>Note: For incidents where one barrier remains effective, but all others failed, it is classified as Level 2 Near Miss.</p> <p>Example: Equipment failure caused by lightning strike resulted in a dewatering event at a Generating facility with no impact to fish downstream. A credible scenario for this same incident is that it could have occurred during a critical spawning time for fish downstream of the generating station and therefore resulted in a high environmental impact.</p>
Level 2 Near Miss	<p>No Level 2 environmental incident occurred, but involves an event that could credibly have resulted in a Level 2 incident. Includes:</p> <p>Near miss incidents of Level 1 severity where at least one effective barrier was in place. This includes situations where it is reasonably believed that an environmental impact could have occurred.</p> <p>Example: Large scale spill to engineered containment. While no oil was spilled to the environment, containment was the last barrier that held and had it not held the oil could have affected sensitive habitat.</p>
Level 3 Near Miss	<p>No impact occurred but involves a loss of control that could credibly have result in a Level 3 incident; or any other incident in which an incident did not occur, but information about the incident is worthy of sharing with others for learning and continual improvement.</p> <p>Example: Slow leak of battery acid on concrete floor at generating plant contained with spill kit contents by crew before it reached drainage. No release to the environment but it was a “close call”.</p> <p>Example: Barrels of unknown materials illegally dumped on BC Hydro property. Barrels contained Hazardous Materials. Barrels were found to be intact. No contamination of site occurred. Could be classified as a Level 3 Near Miss (or higher depending on the material and volume) because hazardous materials could have been spilled to ground at time of illegal dumping.</p> <p>Example: Contractor had visually checked the tree for nests prior to work, and did not observe any nests or bird activity. The contractor removed the top portion of the declining birch tree and only noticed the previously unidentified cavity and nest (with baby birds) once the piece of stem wood was on the ground. No birds or nest were harmed.</p> <p>Example: John Hart Generating Station (JHT) Reservoir drafted to 139.02 m, which may have resulted in a water license violation at <139.0m. JHT reservoir drafted close to licensed minimum when Ladore spill was not initiated as dispatched.</p>

Outcome

A determination is made as to whether the incident is reportable in IMS, and if reportable, which classification (Spill, Fish/Water, Other, Near Miss) and Level (1, 2, or 3) apply. If the incident is reportable in IMS, a new incident is created in the SAP IMS.

Step 3: Record Incident Details in the SAP IMS and Send Initial Notification

Purpose

To inform the organization, **within 24 hours**, that an environmental incident has occurred and to record the incident details in the SAP IMS.

Responsible

The manager responsible for the people, process(es) and/or asset(s) involved.

Process

A. Record incident details via the SAP IMS

Include the initial details of what happened, environmental impact and immediate actions taken to correct the situation. Please include as much information as possible and fill in all the data fields.

B. Send an initial notification (WORKFLOW) via the SAP IMS

This information facilitates the assessment step to determine what further action, if any, is required. The notification is distributed to the organization and other relevant parties based on the type and classification (severity) of the incident.

C. Related incident

When an incident has both a safety and environmental consequence, use the 'report a related incident' button to copy the incident details and continue with the classification of the safety incident.

Remember!

If you require help anywhere along the process, contact your Environmental Risk Management Field Services representative. For help with safety contact your Regional Occupational Safety and Health Specialist (OSH Specialist), or Operational Safety at **604-529-5540** or 75540.

Outcome

Key information is recorded in the SAP IMS and an incident initial notification in the form of a WORKFLOW email is distributed to the business.

Step 4: Initial Assessment

Purpose

The classification of incidents can be subjective, and initial notification does not always include all pertinent facts. Therefore, a review by designated environmental staff helps maintain consistency. This assessment includes the extra step of determining various risk consequences (Environmental, Regulatory, Reputation and Financial) by using the Environmental Risk Calculator to determine whether a formal investigation is required.

Responsible

Designated environmental staff will review incidents to ensure classification and level consistency and investigation requirement (also known as “triage”).

Responsible Managers, Environmental Risk Management staff and others become involved in any further fact finding required. Fact finding includes the collection and evaluation of preliminary and background data regarding an incident to assist with the assessment of the incident (i.e. consequences, severity, and need for formal investigation).

Environmental System Administrators provide technical support to facilitate any changes in the SAP IMS.

Process

- A. Incidents are reviewed to confirm the classification and level and determine if further (formal) investigation is required.
- B. Incidents are assessed for Environmental, Regulatory, Reputation and Financial consequence using the Environmental Risk Calculator. This function is performed by Environmental Risk Management staff (Regulatory Oversight).
- C. The Responsible Manager is consulted regarding any changes to the incident classification and level or investigation requirements.

The default Level 1 and Level 2 investigations by classification are as follows:

	Spill/Pollution, Fish/Water, Other	Spill/Pollution, Fish/Water, Other <u>Near Miss</u>
Level 1	A Level 1 Investigation is required and will be conducted by Corporate SHE using Tripod Beta methodology	Initial assessment and any relevant fact finding will determine investigation requirements and process.
Level 2	A Level 2 investigation (Hazard- Barrier methodology) may be required based on initial assessment and any relevant fact finding	
Level 3	None	

Outcome

The incident is consistently classified for type and level and appropriate investigation rigour is determined.

Step 5: Investigate and Analyze

Purpose

Determine the sequence of events and other relevant information to assist in the identification of key causal factors. Develop corrective actions to prevent the reoccurrence of similar incidents.

Responsible

For investigations for environmental incidents, field staff, subject matter experts, Regulatory Oversight staff, and responsible managers can be included as required.

Process

For the purpose of environmental incident management, the term 'investigation' includes:

1. Data collection
2. Causal analysis
3. Completion of a written report using a defined format.
4. Acceptance/approval of findings

The formality of each of the above steps above will vary based on the level of investigation required. The following table describes some of these variations:

	Level 1 Investigation (see Appendix 2)		Level 2 Investigation
Component	Spill, Fish/Water, Other	Near Miss	All
Investigation Sponsor	Chief Safety, Health & Environment Officer (CSHEO)	Initial assessment and any relevant fact finding will determine investigation requirements and process.	Initial assessment and any relevant fact finding will determine investigation requirements and process.
Initial Evidence Gathering/Fact Finding	Certified Investigator assigned by Corporate SHE	Initial assessment and any relevant fact finding will determine investigation requirements and process.	Responsible Manager or delegate, as determined by initial assessment and relevant fact finding.
	Level 1 Investigation (see Appendix 2)		Level 2 Investigation
Component	Spill, Fish/Water, Other	Near Miss	All
Investigator	Certified Investigator assigned by Corporate SHE	Initial assessment and any relevant fact finding will determine investigation requirements and process.	Responsible Manager or delegate, as determined by initial assessment and relevant fact finding.

Causal Analysis	Tripod Beta	Tripod Beta or Hazard-Barrier Analysis	Hazard-Barrier Analysis
Investigation Report Format	Tripod Beta Report	Tripod Beta or Hazard-Barrier report form	Hazard-Barrier report Form

The following table outlines the recommended due dates for the acceptance of investigation findings by the Investigation Sponsor. SAP IMS tracks the investigation status based on these timelines:

	Level 1 Investigation (excluding corrective action plans)	Level 2 Investigation or Level 1 Near Miss
Environmental Incidents	Investigation completion 8 weeks* from date of incident occurrence And additional 2 weeks to complete CAP (if required)	*10 weeks from date of incident occurrence (including development and approval of corrective action plans).

***NOTE:** The timelines above are tracked in SAP IMS from the date the incident occurred.

Outcome

An investigation is completed, including causes to facilitate the determination of corrective actions. The investigation report (without corrective action plans) is completed, submitted to and accepted by the Investigation Sponsor. In the case of a Hazard-Barrier analysis, corrective action plans are developed, reviewed and approved concurrently and documented and approved in the Hazard-Barrier Investigation Report form.

Step 6: Correct

Purpose

Corrective action plan(s) (CAPs) are developed to correct deficiencies in process(es) as identified by the investigation analysis.

Note: Corrective action plans can be developed and then tracked in SAP IMS without the completion of a formal investigation. Contact Environmental Risk Management (Regulatory Oversight Group) for assistance.

Responsible

When a formal investigation has been completed for an environmental incident, the Safety process for corrective action plan development will used as follows:

- Level 1 investigations, a CAP Developer will be assigned by the Business Group responsible for the process(es) involved. For Level 1 investigations, the investigation team may be asked to present the investigation findings and provide suggestions for corrective actions, but they have no responsibilities for CAP development.
- For Level 2 investigations, local corrective action plans are developed by the Responsible Manager. Any corrective action plans assigned to others, must be accepted by them, as well as others listed in the table below.

Process

Each corrective action plan must identify a **single** person responsible for carrying out the action (CAP Holder) and a due date. Each corrective action plan must be expressed in a manner that will ensure effective implementation. For reference, each CAP should be developed using 'SMARTER' criteria: **S**pecific, **M**easurable, **A**ccountable, **R**easonable, **T**imely, **E**ffective, **R**eviewed.

Details for Level 1 or Level 2 corrective action plan processes are outlined in **Appendix 3** and **Appendix 4**.

Roles / Responsibilities:	Corrective Action Plans for Level 1 incidents		Corrective Actions Plans for Level 2 incidents or Level 1 Near Miss
CAP Developer	Assigned by Business Group Executive	Assigned by Business Group management	Typically, Responsible Manager
CAP Approval	At minimum, by Manager who assigned CAP Developer, or equivalent, and all CAP holders. CAPs developed for Level 1 investigations are to be reviewed for clarity per 'SMARTER' criteria by Corporate SHE/ERM before final approval by Business Group management team.		Initial assessment and any relevant fact finding will determine CAP approver.
Timeline for development of approved CAP	Corrective action plans will be drafted within 2 weeks of the investigation findings report being accepted by the Investigation Sponsor.		Within 10 weeks from date of incident.

CAP Holder	Note that all open corrective action plans must be signed off and the actions taken must be documented in the IMS upon completion.
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Outcome

Corrective action plans to improve business process and prevent re-occurrence of the incident are developed, assigned and approved by the business process owners and CAP Holders.

Step 7: Report and Record Investigations and Corrective Action Plans

Purpose

Investigation findings and corrective action plans are finalized in the SAP IMS system, documented in the required format, and are made available to internal audiences and, when indicated, external audiences.

Responsible

Corporate SHE and Environmental Risk Management System Administrators.

Process

- Completed, reviewed, and approved Level 1 Near Miss and Level 2 investigation reports including findings and corrective action plans are forwarded to the [ERM Regulatory Oversight](#) group for quality assurance and entry into the SAP IMS. Level 1 investigation is finalized in the system by Corporate SHE.
- System Administrators post finalized investigation reports via the SAP IMS.
- Release notification regarding investigation completion and posting:
 - Level 1 Investigation – e-mail notification released immediately upon completion by Corporate SHE via SAP IMS environmental distribution lists
 - Level 1 Near Miss and Level 2 Investigation – communicated by ERM via monthly environmental performance report.

Outcome

By using the SAP IMS, the organization documents, approves, and records the findings of the investigation and the associated corrective action plans. The investigation report is released to internal audiences. All finalized investigation reports including corrective action plans are available through the SAP IMS.

Step 8: Track and Monitor Investigation Reports and CAP's

Purpose

To ensure timely completion of investigation reports, corrective action plans and corrective actions.

Responsible

All persons assigned to conduct investigations and/or develop, and/or carry out corrective action plans. Business Group management is responsible for the oversight of timeliness, quality and completion of investigation reports and corrective action plans related to their business. Self-service reports on the status of corrective actions and investigation reports are available through SAP Environmental Reports to assist managers with oversight of their investigation and corrective actions.

Procedure

SAP IMS tracks the completion of:

- Investigation reports
- Development of corrective action plans
- Due dates of individual corrective action plans.

Reminders are sent out according to the timelines below:

Level 1 Timelines and Reminders

Email Reminder	Sent	To
Level 1 Investigation Report Due for Acceptance	1 week before due date*	<ul style="list-style-type: none">• Lead Investigator• Responsible Manager• Investigation Sponsor
Level 1 Investigation Report Overdue for Acceptance	1 week after due date	<ul style="list-style-type: none">• Lead Investigator• Responsible Manager• Investigation Sponsor
Level 1 Corrective Plan Development Due	3 days before due date	CAP Developer
Level 1 Corrective Plan Development Overdue	3 days after due date	CAP Developer

*NOTE: Due dates noted in Step 5 – Investigate and Analyze

Level 2 Timelines and Reminders

Email Reminder	Sent	To
Level 2 Investigation Report (including CAP) Due	3 days before due date	Responsible Manager
Level 2 Investigation Report (including CAP) Overdue	3 days after due date	Responsible Manager

Corrective Action Plan Overdue Reminders

Email Reminder	Sent	To
CAP Due	3 days before due date	CAP Holder
CAP Overdue	3 days after due date	CAP Holder

Summary reports regarding the status of incidents, investigation reports, and corrective action plans can be created through the SAP IMS.

Investigation reports, including corrective action plans, are approved via the process defined in **Appendix 3 and 4**.

Corrective action plans must be signed off as complete by the CAP holder via the SAP IMS and actions taken must be documented.

Error! Hyperlink reference not valid.Outcome

Investigation reports are monitored to ensure timely completion. Corrective action plans are monitored to ensure they are completed within the time period specified.

APPENDICES

- Appendix 1: Environmental Incident Classification Guidance
- Appendix 2: Level 1 Investigation Process
- Appendix 3: Level 2 Investigation Process
- Appendix 4: Developing Corrective Action Plans (CAP's)
- Appendix 5: Process Summary Schematic

Appendix 1: Environmental Incident Classification Guidance

The table on the following page supplements the table in Step 2 to assist in determining incident classification and severity level. This guidance is generally based on the Environmental Risk Calculator process of assigning consequence ratings to incidents. Consequence assignments are conducted by ERM Regulatory Oversight staff in conjunction with the report filer and subject matter experts (SMEs) as required.

When determining the incident classification and severity level for notification purposes, you may need to use a combination of environmental consequences and your best judgement in classifying an incident.

Where there are multiple environmental consequences as a result of an incident, enter the incident under the classification with the highest severity level (e.g., if the incident appears to have a level 3 wildlife consequence and a level 2 spill consequence, choose Level 2 Spill). All environmental impacts associated with a single incident can be documented in one incident record in SAP IMS.

For initial notification purposes, staff should not be concerned about assigning the most accurate classification and severity level because the incident will be reviewed subsequently by other Environmental Risk Management staff.

		LEVEL 3		LEVEL 2		LEVEL 1		
Environmental Classification	OLD Terminology NEW Terminology	AA S0	A S1	B S2	C S3	D S4	E S5	F S6
Spill / Release: to Land or Water								
	Petroleum substances (litres)	<100 litres		100 litres	<10,000 litres	>10,000 litres		
	Persistent substances (e.g. PCB, Hg)	<1 litres	<10 litres	>10 litres - 100 litres	1000 litres	>1000 litres		
	Duration of impact	<2 hr	2-24 hr	1 - 7 days	1 - <4 weeks	1 - 12 months	1 - 10 years	>10 years
	Extent of damage	<10 m ²	10 m ² - 100 m ²	>100 m ² - 1000 m ²	1000m ² - 1 ha	1ha - 10 ha	10ha - 100 ha	100 ha - 1000 ha
	Sensitivity of receiving environment	Zero	Low	Moderate	Moderate to High	High	Very High	Extreme
	Damage intensity	Minimal	Slightly reduced	Moderately reduced	Moderate to highly reduced	Highly reduced	Very highly reduced	Eliminated
Spill / Release: to Air								
	Local air contaminant releases	<10 kg	<100 kg	100 kg	1 tonne - <10 tonne	10 - < 1000 tonnes	>1000 tonnes	>10,000 tonnes
	SF6 / R22 Releases	<1 kg	>10 kg	10 kg	100 kg - <1 tonne	1 tonne	100 tonnes	>1000 tonnes
	Duration of impact	<2 hr	2-24 hr	1 - 7 days	1 - <4 weeks	1 - 12 months	1 - 10 years	>10 years
	Sensitivity of receiving environment	Zero	Low	Moderate	Moderate to High	High	Very High	Extreme
	Damage intensity	Minimal	Slightly reduced	Moderately reduced	Moderate to highly reduced	Highly reduced	Very highly reduced	Eliminated
Fish/Water Quality: Impacts to fish								
	Species Sensitivity	Not listed		Provincial species of interest		Species at risk		
	% of local pop'n	<1%		1% - < 100%		100%		
	Age class	eggs/alevin	juvenile	sub adult		adult		
	Duration of impact	<2 hr	2-24 hr	1 - 7 days	1 - <4 weeks	1 - 12 months	1 - 10 years	>10 years
Fish/Water Quality: Fish Habitat impacts (other than contamination)								
	Flow rate change	<1%		10%		>50%	100%	
	Gradient	confined, high		unconfined, mod/high		unconfined, low		
	Extent habitat affected (%)	<1%		1 - < 50%		>50%	100%	
	Duration of impact	<2 hr	2-24 hr	1 - 7 days	1 - <4 weeks	1 - 12 months	1 - 10 years	>10 years
	Sensitivity of receiving environment	Zero	Low	Moderate	Moderate to High	High	Very High	Extreme
	Damage intensity	Minimal	Slightly reduced	Moderately reduced	Moderate to highly reduced	Highly reduced	Very highly reduced	Eliminated
Other: Land Disturbance								
	Extent (area) of damage	<10 m ²		>100 m ² - 1000 m ²	1000m ² - <1 ha	1ha - 10 ha	10ha - 100 ha	100 ha - 1000 ha
	Sensitivity of receiving environment	Zero	Low	Moderate	Moderate to High	High	Very High	Extreme
	Duration of impact	<2 hr	2-24 hr	1 - 7 days	1 - <4 weeks	1 - 12 months	1 - 10 years	>10 years
	Extent of damage	<10 m ²	10 m ² - 100 m ²	>100 m ² - 1000 m ²	1000m ² - <1 ha	1ha - 10 ha	10ha - 100 ha	100 ha - 1000 ha
	Damage intensity	Minimal	Slightly reduced	Moderately reduced	Moderate to highly reduced	Highly reduced	Very highly reduced	Eliminated
Other: Impacts to Wildlife and Wildlife Habitat								
	Species Sensitivity	Not listed		Provincial species of interest		Species at risk		
	% of local pop'n	<1%		1% - < 100%		100%		
	Age class	eggs/alevin	juvenile	sub adult		adult		
	Extent habitat affected (%)	<1%	10%	10% - <50%		>50%	100%	
	Duration of impact	<2 hr	2-24 hr	1 - 7 days	1 - <4 weeks	1 - 12 months	1 - 10 years	>10 years
	Sensitivity of receiving environment	Zero	Low	Moderate	Moderate to High	High	Very High	Extreme
	Damage intensity	Minimal	Slightly reduced	Moderately reduced	Moderate to highly reduced	Highly reduced	Very highly reduced	Eliminated
Other: Impacts to Heritage / Archaeology								
	Damage intensity	Minimal	Slightly reduced	Moderately reduced	Moderate to highly reduced	Highly reduced	Very highly reduced	Eliminated

Appendix 2: Level 1 Investigation Process

The following chart outlines the sequence of steps involved in completing and approving an investigation of a Level 1 incident (including Near Miss), or a Level 2 incident that is investigated using Level 1 process. The investigation is led by an independent trained investigator working with independent management and worker representatives, and subject matter experts as required. Corporate SHE will lead IMS administration for Level 1 investigations and ERM will lead IMS administration for Level 1 Near Miss investigations.

Who	What
Establish Investigation	Roles
Corporate SHE	<p>Confirm the Investigation Sponsor:</p> <p>Level 1 Environmental Incident if investigated:</p> <ul style="list-style-type: none"> Chief Safety Health & Environment Officer (CSHEO) <p>Level 1 Environmental Near Miss if investigated:</p> <ul style="list-style-type: none"> Business Group Executive or General Manager responsible for the area/asset
Investigation Sponsor:	Designate a Certified investigator* as the Lead Investigator; the person responsible for completing the investigation, causal analysis using Tripod Beta or Hazard-Barrier methodology, and drafting the investigation report.
Corporate SHE / Environmental Risk Management (ERM)	When the Lead Investigator is not immediately available, Corporate SHE / Environmental Risk Management will send a person to conduct fact finding to collect data from the incident scene.
Business Group Senior Management	Designate the person (CAP Developer) responsible for coordinating development of multiple corrective action plans that address missing and failed barriers and underlying causes and that meet SMARTER criteria for a given incident. Provide communication on interim operation changes to work practices (i.e., an 'interim CAP').
Business Group Senior Management	Designate the independent management and worker representatives assigned to the investigation team, often in consultation with Union Representatives. Assign out of the area worker and management representatives who do not have direct supervisory responsibility for employees involved in the incident.
Investigation Team: 1. Lead Investigator 2. Worker rep 3. Manager rep	Investigation team is established, members of the team are seconded for the duration of the investigation. Each investigation must have a Worker Representative. The Worker Representative should not have been directly involved in the incident but should be knowledgeable in the work performed.
Lead Investigator	Provide the names of the Investigation Sponsor, Lead Investigator and CAP Developer to the IMS Administrator.
Corporate SHE / ERM SAP IMS System Administrator	Enter the Investigation Sponsor, Lead Investigator and CAP Developer roles in the SAP IMS.

Investigation Team	Investigation Team may elect to use 'subject matter experts' (SMEs) during the course of the investigation. SMEs are not part of the investigation team, and do not approve the final report.
Conduct Investigation	
Investigation team	Begin investigation and collect facts through site visits, interviews and data review.
Lead Investigator	Produce (or consider producing, in the case of a near miss) an initial 'Fact Sheet'. The purpose of the Fact Sheet is to provide information regarding the initial confirm facts for release, so that interim corrective actions can be taken if necessary. Provide final Fact Sheet to Corporate SHE Safety System Administrator for distribution via SAP IMS.
Corporate SHE / ERM SAP IMS System Administrator	Fact Sheet information is logged in IMS and distributed via an updated WORKFLOW initial notification or, in some cases, via e-mail from a senior executive or manager.
CAP Developer	Review Fact Sheet and consults investigation team and/or Business Group Operations to develop and implement any interim or immediate corrective actions if required.
Lead Investigator	Lead analysis of the incident and facts using the Tripod Beta methodology and software.
Investigation Team	Produce the investigation report and submit for acceptance to the Investigation Sponsor. Notify the ERM / Corporate SHE IMS Administrator that the report has been 'submitted' to the Investigation Sponsor.
Corporate SHE / ERM SAP IMS System Administrator	Mark the investigation report status with the date "submitted" in the SAP IMS.
Investigation Team and Sponsor	Present report and findings to Investigation Sponsor and any other senior management identified by the Investigation Sponsor
Investigation Team	Receive feedback from the Investigation Sponsor and senior business group management for consideration, and revise the report to reflect the feedback if necessary (i.e. to address issues with fact or clarity of writing). This step is not intended to affect the independence of the investigation team relating to their findings; but rather to ensure that all parties have a shared and clear understanding of the facts.
Investigation Sponsor	Accept the investigation report and notify ERM / Corporate SHE IMS Administrator.
Corporate SHE / ERM SAP IMS System Administrator	Mark the investigation report status with the date "accepted" in the SAP IMS.
Safety, Health and Environment	*Maintain a list of Certified Investigators appointed by joint agreement between the Business Group involved and Corporate Safety, Health & Environment. At minimum, they will have completed the Tripod Beta Analysis course and shown a sufficient level of proficiency in applying the analysis method. It is recognized that Certified Investigators may possess different levels of experience and proficiency, therefore not all Certified Investigators may be suitable for the most serious and/or complicated investigations.

Development of Corrective Action Plans (CAP) for Level 1 Investigations	
Who	What
CAP Developer	Convene all parties deemed necessary to determine what corrective actions will be taken and by whom. The investigation team may be requested to present the investigation findings and provide suggestions regarding corrective actions; however the team is not formally part of the corrective action process.
CAP Developer	The corrective action plans must be developed in accordance with the 'The Expectations for Corrective Action Plans' in Appendix 4. While the CAP need not address all causes identified by the analysis, the CAP Developer must be prepared to justify the exclusion of any causes from the corrective action plans.
CAP Developer	Each CAP must be written in a manner that clearly indicates what will be done, by who (CAP Holder), by when (due date). The CAP Holder must be informed of, and agree to, the corrective action plan and its due date. CAPs can only be assigned to BC Hydro employees. Provide draft of CAP to Corporate SHE for review prior to Management Review meeting.
Corporate SHE Assurance	Review draft CAP per SMARTER criteria.
Business Senior Group Management (including CAP Holders)	Review and approval of CAPs through the Vice President meeting that will discuss investigation findings and agree on corrective actions. Corrective actions must be discussed and approved before the Executive VP review. VP will present the corrective actions during the Executive VP meeting. The corrective action plans must address all missing or failed barriers and underlying causes, or provide rationale for not doing so (to demonstrate hazards have been managed to As Low As Reasonably Practicable (ALARP). Once approvals are complete the CAP(s) are provided to the CAP Developer.
CAP Developer	Forward approved CAP(s) to Lead Investigator for finalization in Investigation Report
Lead Investigator	Compile investigation report and CAP(s). Send Level 1 Injury reports to the SAP IMS System Administrator and Level 1 Near Miss reports to the Operational Safety System Administrator. The investigation is considered to be final once the approved CAP(s) and investigation report is received and checked by Corporate SHE.
Corporate SHE / ERM SAP IMS System Administrator	Check report for formatting and completeness, etc.
	Enter corrective action plan(s) and investigation key fields in the IMS.
	Mark the investigation as finalized by inserting a date in the 'CAP Approved' field in the IMS.
	Send notification of release of Level 1 Investigation Report with link.
Sign off Corrective Action Plans	
CAP Holder	A CAP may remain open (incomplete) at the time the report is finalized. As each corrective action plan is completed, the CAP Holder must sign off as complete the action in the IMS and provide a record of the actions taken in fulfilling the corrective action.
Revision of Corrective Action Plan(s)	
It may be necessary to amend a corrective action plan, i.e. completion date, person responsible, or action specified.	
Business Group VP	Must approve and accept the proposed change.

Corporate SHE / ERM SAP IMS System Administrator	Amends the corrective action plan and maintains a record of the reason(s) for the change.
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Time Expectations

		Level 1 Investigations & CAP Development	
Component		Incident	Near Miss
Environmental incidents	Investigation	8 weeks* from date of incident	4 weeks* from date of incident
	CAP Development	2 weeks* from acceptance of investigation	

***NOTE:** These are Corporate SHE expectations of timelines and the timelines used in the SAP IMS to drive WORKFLOW e-mail reminders and for reporting status of investigations in Safety Reports.

Appendix 3: Level 2 Investigation Process

Level 2 Investigations are not mandatory for environmental incidents. As formal investigations for environmental incidents are a new concept, ERM (Regulatory Oversight) will pilot the Level 2 investigation process in F13.

The Hazard-Barrier Investigation Report form was developed for managers to undertake an investigation in a simple effective format for Level 2 incidents.

The following chart outlines the sequence of steps required to complete a Level 2 investigation with corrective actions and who is responsible for initiating and completing those steps. This process to be reviewed during the piloting of Level 2 investigations during F13.

Who:	What:
Responsible Manager, delegate, Regulatory Oversight, and/or Environmental Field Services	Assign the Investigation Team. Most often, the Responsible Manager serves as the investigator and management representative.
Investigation Team	Collect data and facts through interviews and by examining physical evidence. The team may want to visit the site, interview those involved, and/or conduct research to identify what went wrong and what could have prevented it.
Investigation Team	Complete the Hazard-Barrier Investigation Report form found on the IMS Home Page . When completing the form, be sure to include all relevant information and complete all sections.
Responsible Manager, delegate, Regulatory Oversight, and/or Environmental Field Services	Develop corrective action plan(s) to prevent the same type of incident from re-occurring. When assigning a CAP Holder, ensure they have the authority to carry out the action, and that they are aware and accept the responsibility, and agree to the due date.
Responsible Manager, delegate, Regulatory Oversight, and/or Environmental Field Services	Process TBD - forward the report and any attachments to their manager to review and accept the report and approve corrective action plans.
Investigation Sponsor	Process TBD - approve the report and return to the Responsible Manager. For Level 2 investigations, the Investigation Sponsor is the Manager who is, at a minimum, one organizational level higher than the Responsible Manager.
Responsible Manager, delegate, Regulatory Oversight, and/or Environmental Field Services	Forward the completed and approved investigation report form to Environmental Risk Management via email to finalize the report and have corrective action plans entered in the SAP IMS.
Environmental Risk Management (ERM) staff	Review investigation reports for: <ul style="list-style-type: none"> • Completeness and/or remove any personal identifiers in attachments if necessary • Corrective action plans per SMARTER criteria • Wider application of corrective action plans

Who:	What:
	<ul style="list-style-type: none"> • Interpretation of key hazard and barrier data fields for entry into the IMS
Responsible Manager, or delegate	Provide any additional information/clarification requested by the Business Group environmental professionals performing the review of the investigation report.
ERM SAP IMS System Administrator	Enter in the SAP IMS the key hazard and barrier data fields, corrective action plans, and attach the investigation report and any other relevant documents provided by the investigation team. Confirm with the Investigator which attachments should be visible to all SAP IMS users and which should be saved as confidential attachments in the back-end of SAP.
ERM SAP IMS System Administrator	Mark the investigation as finalized by inserting a date in the 'CAP Approved' field in the SAP IMS.
CAP Holders	Sign off on any open corrective action plans when completed via the SAP IMS and provide evidence of actions taken to fulfill the CAP.

Time Expectations

		Level 2 Investigations & CAP Development
Component		All
Environmental incidents	Investigation	Within 10 weeks of the date of the incident (including development and approval of corrective action plans)
	CAP Development	

***NOTE:** These are Corporate SHE expectations of timelines and the timelines used in the SAP IMS to drive WORKFLOW e-mail reminders and for reporting status of investigations in Safety Reports

Appendix 4: Developing Corrective Action Plans (CAPs)

Introduction

When the Tripod Beta system is used for the causal analysis in an investigation, a tripod tree is developed. This tree indicates the series of events that resulted in the incident, the barriers that were in place and other barriers that could have been in place. For each identified barrier, causal information is also provided.

When the Environmental Investigation Report form is used to investigate an incident, the investigator determines the circumstances of the incident and identifies the barriers, if any, that were in place to control the hazard.

Note: Corrective action plans can be developed and then tracked within SAP IMS without the completion of a formal investigation. Contact the Environmental Risk Management, Regulatory Oversight Group for assistance.

The challenge for those tasked with development of Corrective Action Plans is to interpret the information provided and determine the appropriate remedial action. This information is intended to provide the framework for completing the Corrective Action Plan process.

Corrective Action Plans

Generally there are two types of corrective actions required to ensure the maximum benefit is derived from the analysis:

- **Tactical corrective actions** to deal with improvements related to the barriers indicated in the analysis
- **Strategic corrective actions** to address the underlying causes identified in the analysis

Tactical Corrective Actions

For hazards that can cause serious environmental impact, the failed, missing and/or effective barriers must be assessed in aggregate to ensure:

1. The systemic use of at least one barrier in the top three barriers of effectiveness, as listed in the Hierarchy of Controls table below in order of most to least effective barrier.
2. At least one other barrier, in addition to the barrier identified in Item #1 above.

3. When a barrier has been identified in the analysis as a failed barrier the reasons for the failure must be addressed before it can be selected as a barrier defined in Items #1 and/or #2 above. When using Tripod Beta this can be accomplished by correcting the underlying 'yellow box' reasons for the failure.

Activity	Barrier type	Control Action On The Hazard	Definition
Prevent	Design Barriers	Eliminate	Temporary or permanent removal of hazard from the system
		Substitute	The introduction of a lesser hazard to remove a greater hazard
		Minimize	Make the hazard harmless by reducing the degree of hazard
Control	Engineered Barriers	Contain	Isolate and prevent the hazard from passing the isolation boundaries
		Dissipate	Disperse the active hazard as it crosses the isolation boundaries such that it is no longer harmful
		Suppress	Reduce the active hazard to interrupt the accident sequence and re-establish control
	System Barriers	Competence (Organization/ Individual)	The quality of being appropriately conditioned or well qualified physically and intellectually
		Monitor	Supervisory system that observes the activity in a way that enables detection of deviations from norms
Mitigate	TBD	Respond	Reactive system that corrects/ compensates/mitigates deviations from norms of hazard control
		TBD for Environment	TBD for Environment
	TBD	TBD for Environment	TBD for Environment

Reference: Above table is taken from OSH Standard 122 'Job Planning' and modified

Systemic Corrective Actions

The intent of these corrective actions is to address why ineffective barriers were used and/or why the missing barriers had not previously been identified.

When Tripod Beta investigation methodology is employed the systemic reasons for barrier ineffectiveness are indicated in the underlying cause (yellow) definition box of the Tripod Beta tree. The systemic corrective actions must consider all underlying causes identified and in particular those underlying causes linked to all barriers that failed in the incident and all barriers selected for implementation during the tactical corrective action phase.

Responsibility for determining Corrective Action Plans

For Level 1 investigations, a CAP Developer role can be assigned. The CAP Developer is responsible for coordinating the development and documentation of the corrective action plans for any incident, as designated by the Business Group that supervises the workers and are responsible for the physical plant involved in the incident. The CAP Developer is not responsible for implementing, or overseeing the implementation of, corrective actions.

For Level 2 investigations, the Responsible Manager or delegate will develop local corrective action plans for the incident.

Effective Corrective Action Plans

Corrective action plans must be expressed in a manner that is clear and support effective implementation. It is recommended that CAPs meet the following SMARTER criteria:

- **Specific**
- **Measurable**
- **Accountable**
- **Reasonable**
- **Timely**
- **Effective**
- **Reviewed**

Oversight of Corrective Action Plans

Corporate SHE and ERM will provide oversight and checking of CAPs to support the development of CAPs that meet the above expectations. CAPs for Level 1 incident investigations will be reviewed by Corporate SHE prior to the review and approval by the Business Group Management team.

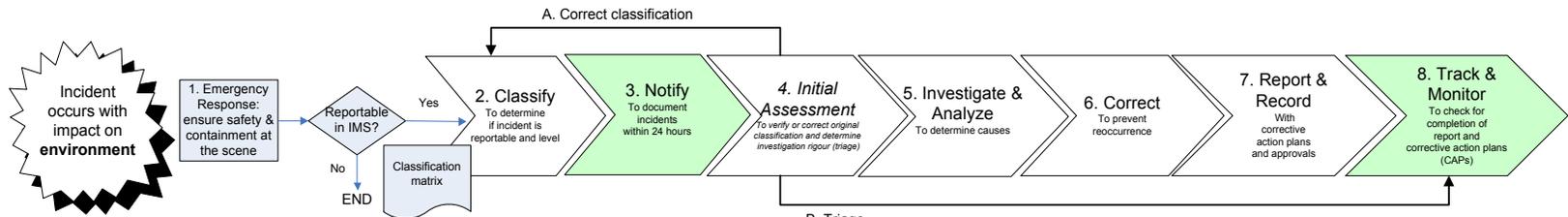
Appendix 5: Process Summary Schematic



FOR GENERATIONS

Environment Incident Management and Investigation Process

Incident Management: includes the steps below and refers to the integrated process by which the organization can learn about the causes of incidents to prevent re-occurrence.



Process Steps: (What)

NOTE: Steps to be completed online via the SAP IMS

Contact for assistance:

- Environmental Field Services
- 72903 or 604-528-2903

<p>What was involved?</p> <ul style="list-style-type: none"> • Spill/Pollution • Fish/Water • Other <p>Was it an incident or near miss?</p> <p>How severe was it? Level 1, 2, or 3</p>	<p>Create an Initial Notification via the SAP IMS</p> <p>Is this incident reportable to any external regulatory agency?</p>	<p>Review of incident classification and conduct risk calculator assessment to determine investigation requirements</p>	<p>If required: use designated investigation process and analysis method to find causes</p> <p>Level 1 Tripod Beta</p> <p>Other levels Hazard Barrier Investigation if required</p>	<p>Develop and implement corrective action plans that will prevent reoccurrence of an incident</p> <p>Corrective action plans are to be assigned a single Person Responsible with a due date</p> <p>Level 1 Incidents: CAP Developer assigned to coordinate and document corrective action plans</p>	<p>Compile investigation report with corrective action plan(s) once approved</p> <p>Tripod: Send to SHE/ERM Administrator for sign-off in the SAP IMS</p> <p>Hazard Barrier: Complete on SAP IMS directly</p> <p>Reports can be finalized with corrective action plans open</p>	<p>SAP IMS tracks the completion of the:</p> <ul style="list-style-type: none"> • investigation reports • development of corrective action plans • due date of individual corrective action plans <p>Status of investigations and CAPs are available in reports; overdue notifications are sent via email to involved persons</p> <p>Once completed, CAPs must be signed off in the SAP IMS</p>
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Responsible for Action: (Who)

All Managers/Workers	<p>Level 1: All Corporate & Business Group Managers/ Workers</p> <p>Level 2 & 3: Business Group Managers/ Workers</p>	<p>Calibrated triage by staff within SHE/ERM for investigation (if required) or direct reporting.</p>	<p>Level 1: Tripod Beta by Corporate Safety, Health & Environment Investigator</p> <p>If required for any other level: Hazard-Barrier by Managers and/or Business Group Investigators</p>	<p>Level 1: Business Group management to designate a CAP Developer and approve CAP</p> <p>Level 2: Responsible Manager or delegate, to develop CAP, and their Manager to approve CAP</p>	<p>Level 1: Investigation Sponsor, Lead Investigator and CAP Developer</p> <p>Level 2: Responsible Manager or delegate</p>	<p>Corporate and Business Group oversight</p>
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APPENDIX B

BC Hydro Environmental Best Management Practices

Appendix B

Environmental Best Management Practices

Abrasive Blasting Material
Asbestos and Asbestos-Containing Material
Batteries
Coolants and Antifreeze
Environmental Requirements for Planning and Doing Work
Insulating Oil
Mercury and Mercury-Containing Materials
Paints and Coatings
Solvent
Spill Preparedness
Spill Response

Abrasive Blasting Material

Contents

Introduction	1
Definitions	14
General Principals for Managing Abrasive Blasting Material	2
Spill Response.....	14
Environmental Hazards	2
Legal Considerations	2
Purchasing.....	3
Storage of New Abrasive	3
Lab Testing of Coating	3
Containment	4
Reclaiming and Reusing Abrasive	7
Collecting Waste Abrasive.....	7
Lab Testing of Waste.....	8
Waste Classification	9
Labeling Containers.....	10
Waste Storage.....	11
Transporting Waste	12
Recycling	12
Landfill Disposal	13

Introduction

Note: This EBMP may be out of date. Please contact Environmental Risk Management for changes.

Purpose: To document Environmental Best Management Practices for using or managing abrasive blasting material based on a life-cycle approach from purchasing through to disposal.

Scope: Environmental aspects of purchasing, collection, storage, transport, and disposal of all types of abrasive grit used for any purpose.

Note: This EBMP does not address worker health and safety requirements. For information on occupational health and safety risk assessment and work procedures related to abrasive blasting, see sections 12.98 and 12.99 of the BC *Occupational Health and Safety Regulation*, and BC Hydro OSH Standards [306: Asbestos](#) and [314: Lead Abatement](#). Contact your OSH Specialist during the work planning phase.

General Principals for Managing Abrasive Blasting Material

Abrasive blasting material will be used and handled:

- to minimize risks to human health, property, and the environment
- according to applicable legislation and codes
- so that any hazardous materials that may be contained in wastes are not released to the environment

Environmental Hazards

Improper management of abrasive blasting material can cause environmental damage, including contamination of soil and harm to terrestrial, marine, and aquatic life.

Legal Considerations

This EBMP was designed to address all applicable legal requirements in the Acts and regulations listed below. Legal compliance should be assured by following the work instructions contained in this EBMP.

Note: Neither hazardous nor non-hazardous waste abrasive may be buried at a work site (e.g. tower footing) or otherwise introduced to the environment without testing and a valid permit or approval.

<i>Environmental Management Act</i>	All waste abrasive is regulated by the BC <i>Environmental Management Act</i> and is classed as either hazardous waste or industrial non-hazardous waste.
<i>Hazardous Waste Regulation</i>	Waste abrasive is classed as hazardous waste if it contains leachable metals (e.g. lead, arsenic, or zinc) in concentrations above <i>Hazardous Waste Regulation</i> leachate quality standards. Discharge of hazardous waste into the environment is prohibited. Hazardous waste abrasives must be stored, handled, transported, and disposed of according to the <i>Hazardous Waste Regulation</i> .
<i>Waste Discharge Regulation</i>	Waste abrasive is classed as industrial non-hazardous waste if it does not contain leachable metals in concentrations above <i>Hazardous Waste Regulation</i> leachate quality standards. This waste is regulated by the BC <i>Waste Discharge Regulation</i> and the discharge of this waste into the environment is prohibited.
<i>Contaminated Sites Regulation</i>	The landfill of all hazardous waste abrasive and some non-hazardous waste abrasive is regulated by the <i>Contaminated Sites Regulation</i> .
<i>Spill Reporting Regulation, Fisheries Act</i>	Spills of waste abrasive are regulated by the provincial <i>Spill Reporting Regulation</i> and the federal <i>Fisheries Act</i> . Depending on spill size and location spills may need to be reported to the BC Provincial Emergency Program or Fisheries and Oceans Canada. (Refer to “Spill Response”, Notify/Report for reporting thresholds.)

Purchasing

Order only as much abrasive as needed to complete the job. If possible, send any excess new abrasive back to the supplier at the end of the job.

Avoid purchasing abrasives packaged in flimsy paper bags as these tend to break and release contents. Abrasives packaged in strong double layer bags or bulk tote bags are preferable.

Note: Where a slag-based abrasive is being considered, submit a written justification for the product choice, including product specifications, to the Environmental Task Manager for review during the work planning phase.

Choose an abrasive that is environmentally benign and less likely to become hazardous waste. BC Hydro prefers the use of abrasives such as garnet or crushed glass. Avoid abrasives containing metals and/or abrasives derived from mining slag.

Note: Per requirements of section 12.100 of the BC *Occupational Health and Safety Regulation*, do not purchase abrasive blasting material containing crystalline silica when a less toxic alternative is practicable. For more information contact your OSH Specialist.

An example of an environmentally preferable abrasive is shown below.



Storage of New Abrasive

Store new abrasive separately from waste abrasive.

Store new abrasive in a way that prevents damage to packaging. For example, if possible store abrasive in a shelter or in a contained area covered with a tarp.

Do not store bulk tote bags in the sun for an extended period of time as they may rot and release contents.

Lab Testing of Coating

Sampling for Metals	For any job involving the removal of a pre-existing coating (i.e. any surface other than a galvanized zinc only surface), take a sample of the pre-existing coating prior to starting the job. Have
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	the sample analyzed for leachable metals and total metals.
Sampling for Asbestos	<p>If the existing coating is more than 5 mm thick, has a fibrous appearance, or looks like tar or cement, take a sample and have it analyzed for asbestos.</p> <p>Note: Where it is not possible to sample the pre-existing coating prior to starting the job, e.g. where dewatering a structure is required, use MSDS, tests from other nearby similar coatings, experience from previous similar jobs, and/or the age and design of the item to be blasted to determine the coating composition. Take a sample at the start of the job per instructions above to verify your assumptions.</p>
Sample Shipment	See “Lab Testing of Waste - Choice of labs” and “Lab Testing of Waste” and “Transporting samples” for instructions on choosing a lab and shipping samples.
Results	<p>Use test results for leachable and total metals to help determine containment requirements, choice of abrasive, and as an indicator for hazardous waste classification. See “Waste Classification”</p> <p>Note: If test results identify the presence of any quantity of asbestos, do NOT proceed with abrasive blasting activities. Treat the material as asbestos-containing material (ACM) and follow instructions in the Asbestos EBMP.</p>

Containment

Containment is required for all abrasive blasting jobs. This includes blasting over land and blasting near or over water.

On a case-by-case basis, determine what level of containment is required and how to implement it.

If possible, plan for work to be done during a period of calm, dry weather with little or no wind.

Note: For class of containment, see instructions in the Society for Protective Coatings (SSPC) [Technology Guide No. 6, Guide for Containing Surface Preparation Debris Generated During Paint Removal Operations](#) .

Abrasive Blasting Over Land	<p>When abrasive blasting over land, containment may be simple consisting of a tarp or plastic sheet to allow waste to be collected for offsite disposal (see examples in photos below).</p> <p>Note: Ensure the containment is large enough to collect any overspray.</p> <p>Containment Example 1</p>
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	 <p>Containment Example 2</p> 
<p>Abrasive Blasting Near or Over Water</p>	<p>When abrasive blasting within 15m from the top of bank of a watercourse, or over water, contact your environmental services group for assistance during the work planning phase to determine appropriate best practices for containment for the planned work. Containment using shrink-wrap and negative air pressure may need to be installed as shown in Containment Example 4.</p> <p>Containment Example 3</p>



Containment Example 4



Note: Depending on the scope of work and proximity to sensitive aquatic habitat, environmental agency notification and approval may be required. The need for notification and/or approval will be determined by the environmental services group.

The best environmental practices for a specific piece of work shall ensure that the removal of paint or protective coatings will be conducted in a manner that prevents any paints, paint flakes, primers, blasting abrasives, rust, solvents, degreasers or other waste material from entering the watercourse.

Measures such as barges or shrouding shall be used in cases

	where blasting is occurring over the water to trap and prevent any deleterious substances from entering the watercourse.
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Reclaiming and Reusing Abrasive

To reduce the volume of waste abrasive sent to landfill, where possible, use an abrasive reclaim system to collect and process used abrasive. Depending on hardness, abrasive can be used up to six times before it loses its effectiveness.

<p>Note: Per requirements of section 12.101 of the BC <i>Occupational Health and Safety Regulation</i>, do not reclaim and reuse abrasive blasting material if it contains crystalline silica, or if it has been contaminated by any harmful impurities including metals such as lead, chromium, nickel or mercury. For more information contact your OSH Specialist.</p>

Collecting Waste Abrasive

Do not leave waste abrasive material at the work site. When blasting transmission tower footings, do not leave waste abrasive in the tower footing excavation.

Shovel, vacuum, or otherwise collect all waste abrasive into a steel or plastic drum with a plastic liner and a tight-fitting lid, or into a bulk tote bag within a steel frame.

Bulk Bag in Steel Frame



<p>Note: If the abrasive was shipped in a bulk tote bag when new, do not use this bag for waste. Bulk tote bags are for single use only (UV light and use tend to cause bags to break down).</p>

Lab Testing of Waste

For each job, have the waste abrasive tested for leachable metals and total metals. If the job produces both waste abrasive and waste vacuum dust, sample and test each type of waste individually.

Sampling	<p>Take a minimum of one composite sample for every 10m³ (approximately 20 tonnes) of waste generated, or for every shipping container of waste. Increase this frequency if the coating is variable. Make each sample by mixing a minimum of three equal-sized samples together.</p> <p>For ease of sampling in the field, for each composite sample take three discrete samples and instruct the lab to mix the samples to make the composite sample prior to analysis.</p>
Sample Size	<p>Make each sample approximately 200 g (a full 125 mL sample jar or approximately 1/2 cup) of the waste mixture. Place the sample material in a clean 125 mL sampling jar or a clean zip-lock bag. Pack samples so that the total mass of samples is less than 5 kg to avoid requirements of the <i>Hazardous Waste Regulation</i>.</p>
Labeling Samples	<p>Print the words TEST SAMPLES clearly in block letters at least 2.5 cm high on the outside of the package.</p>
Choice of Labs	<p>Forward samples to PowerTech Labs or other approved lab for testing. Contact your environmental representative for help in choosing a lab.</p>
Documentation	<p>Complete a sample transmittal form. If using PowerTech Labs, call 604-590-7453 to get a laboratory <i>Chain of Custody</i> form. If using another lab, get the appropriate equivalent form. Complete the sample transmittal form with the following information:</p> <ul style="list-style-type: none"> • the words "Test Samples" • BC Hydro Business Group or Business Unit and location • sample identification number • common name or description of material (e.g. paint; e.g. waste abrasive) • piece of equipment or item from which sample was taken (e.g. La Joie penstock) or name of job that generated the waste • sample date • testing required (e.g. leachable metals and total metals; e.g. asbestos) • name and telephone number of person doing the sampling • name and contact details of person to whom test results should be sent

Transporting Samples	<p>Send samples and the completed sample transmittal form and to:</p> <p>Powertech Labs Inc. Environmental Laboratory 12388-88th Ave. Surrey, BC V3W 7R7</p> <p>Forward samples to the lab by courier or BC Hydro employee. The courier does not require a Hazardous Waste Transport Licence.</p> <p>Note: Do NOT send samples by Canada Post or OCS.</p>
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Waste Classification

Hazardous Waste	<p>Compare lab test results with numbers in the table below to see if the waste abrasive is classified as hazardous waste. Contact your environmental representative for help if necessary.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Metal</th> <th>HWR Leachate Concentrations (mg/L)</th> </tr> </thead> <tbody> <tr><td>Arsenic</td><td>2.5</td></tr> <tr><td>Barium</td><td>100.0</td></tr> <tr><td>Boron</td><td>500.0</td></tr> <tr><td>Cadmium</td><td>0.5</td></tr> <tr><td>Chromium</td><td>5.0</td></tr> <tr><td>Copper</td><td>100.0</td></tr> <tr><td>Lead</td><td>5.0</td></tr> <tr><td>Mercury</td><td>0.1</td></tr> <tr><td>Selenium</td><td>1.0</td></tr> <tr><td>Silver</td><td>5.0</td></tr> <tr><td>Uranium</td><td>10.0</td></tr> <tr><td>Zinc</td><td>500.0</td></tr> </tbody> </table> <p>If any of the applicable <i>Hazardous Waste Regulation (HWR)</i> concentrations are exceeded, the waste abrasive material is classified as hazardous waste.</p>	Metal	HWR Leachate Concentrations (mg/L)	Arsenic	2.5	Barium	100.0	Boron	500.0	Cadmium	0.5	Chromium	5.0	Copper	100.0	Lead	5.0	Mercury	0.1	Selenium	1.0	Silver	5.0	Uranium	10.0	Zinc	500.0
Metal	HWR Leachate Concentrations (mg/L)																										
Arsenic	2.5																										
Barium	100.0																										
Boron	500.0																										
Cadmium	0.5																										
Chromium	5.0																										
Copper	100.0																										
Lead	5.0																										
Mercury	0.1																										
Selenium	1.0																										
Silver	5.0																										
Uranium	10.0																										
Zinc	500.0																										
Contaminated Sites Regulation	<p>Depending on results for total metals testing, the waste may be subject to requirements of the <i>Contaminated Sites Regulation (CSR)</i> even if it is not classed as a hazardous waste.</p> <p>If the waste is subject to <i>CSR</i> requirements there are implications for landfill disposal options. See "Landfill Disposal" or contact the MMBU Environmental Technical Specialist for further information.</p>																										

Labeling Containers

If drums were used before for another purpose, remove any labels that no longer apply. Get waste labels from the MMBU Environmental Technical Specialist if necessary.

<p>Waste Labels</p>	<p>For each drum fill in a waste label and put it on the outside of the drum. Include the following:</p> <ul style="list-style-type: none"> • Container ID: A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label • TDG Shipping Name (if hazardous waste): Leachable toxic waste (<i>substance*</i>) * Insert the name of the metal(s) that exceeds applicable <i>Hazardous Waste Regulations</i> leachate concentration, e.g. Leachable Toxic Waste (zinc) • TDG Shipping Name (if not hazardous waste): Not applicable • TDG PIN: Not applicable • TDG Class: Not applicable • Packing Group: Not applicable • Shipped From: Use location from where waste is being shipped. Complete at time of shipping • Container: Number containers that contain the same waste (e.g. Container 1 of 3). Complete at time of shipping • Produced By: Name of the person who is completing the label/filling the waste container • Produced From: Location from where the waste originated (can be equipment or station)—e.g.: 5L45, Tower 516/04 • Date Produced: Actual date the waste container was filled and label was produced—use the start date if the container is filled over time • Phone: Phone number of person completing the label and filling the waste container • Waste Description: Waste abrasive • Solid: Place checkmark
<p>Hazardous Abrasive Example</p>	

<p>Non-Hazardous Abrasive Example</p>	
	<p>Shipping Information (TDG)</p> <p>TDG Shipping Name: <u>N/A</u></p> <p>TDG PIN: UN <u>N/A</u> TDG CLASS: <u>N/A</u> Packing Group: <u>N/A</u></p> <p>Shipped From: <u>1155 MCGILL RD, KAMLOOPS, BC</u> Container <u>1</u> of <u>3</u></p>
	<p>Waste Origin Information</p> <p>Produced By: <u>JOE SMITH</u> Date Produced: <u>03</u> <u>31</u> 20 <u>07</u></p> <p>Produced From: <u>5145, TOWER 516/04</u> Phone: (250) <u>308</u> <u>8116</u></p>
	<p>Waste Information (Refer to MSDS if applicable)</p> <p>Waste Description: <u>WASTE ABRASIVE</u></p> <p>WASTE OIL (required information): Insulating _____ Lubricating _____ Hydraulic _____ PCB levels: _____ (ppm) Lab Report # _____ FACILITY SOURCE: Station ID: _____ Equip ID: _____ Spill Location: _____ (if applicable)</p>
	<p>SOLID <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> GAS <input type="checkbox"/> SLUDGE <input type="checkbox"/></p> <p>Comments: _____</p>
	<p style="text-align: center; font-size: small;">CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 800-588-7000 / 800-588-7011 Number 1-800-588-7000 / 800-588-7011</p>

Waste Storage

<p>Non-Hazardous Waste</p>	<p>Store small volumes of non-hazardous waste abrasive in a steel drum with a plastic liner and a tight-fitting lid. Do not store waste abrasive in a fruit box or a previously used bulk tote bag (UV light and use tend to cause bags to break down).</p> <p>Store drums in a low-traffic area away from water. Store in a contained area or shelter if possible.</p> <p>Large volumes of non-hazardous waste abrasive may be transported directly to landfill in a dump truck without packaging or containment per instructions in “Transport Waste” and “Landfill Disposal.”</p>
<p>Hazardous Waste</p>	<p>Store hazardous waste abrasive in a steel drum with a plastic liner and a tight-fitting lid or a new bulk tote bag. Do not store waste abrasive in a fruit box or a previously used bulk tote bag (UV light and use tend to cause bags to break down).</p> <p>Store drums or tote bags in a low-traffic area away from water. Store in a contained area or shelter if possible.</p> <p>Arrange for regular disposal of containers to prevent the accumulation of large amounts of waste abrasive.</p> <p>Do not store more than 500 kg (approximately 1.25 drums) of hazardous waste abrasive at a work site (e.g. a tower site or generating station).</p> <p>Note: If the amount of stored hazardous waste abrasive exceeds 500 kg, additional requirements of the Hazardous Waste Regulation apply. Contact the MMBU Environmental Technical Specialist for help in finding out what is needed.</p>

Transporting Waste

Follow instructions in “Waste Classification” to determine whether the waste is classed as hazardous waste.

If none of the HWR leachate concentrations are exceeded, the waste is non-hazardous and there are no HWR requirements for it.

However, if any of the HWR leachate concentrations are exceeded the waste is classed as hazardous waste and must be transported in compliance with the *Hazardous Waste Regulation*.

Waste Manifest	Complete a manifest when transporting more than 5 kg of waste abrasive classed as hazardous waste for more than 3 km on a public road. See How to Complete Part A of a Manifest , if necessary. If the waste is hazardous describe it as follows: <ul style="list-style-type: none"> • Shipping name: Leachable Toxic Waste (<i>substance*</i>) * Insert the name of the metal(s) that exceeds the applicable HWR leachate concentration, e.g. Leachable Toxic Waste (zinc) • Class: N/A • UN Number: N/A • Packing Group: N/A • Registration No. / Provincial ID No.: BCG 00122 • TDG hazard label: N/A • Placard quantity: N/A
Hazardous Waste Transport Licence	When transporting more than 500 kg of waste abrasive classed as hazardous waste for more than 3 km on a public road, make sure the carrier has a valid <i>Hazardous Waste Transport Licence</i> .

Recycling

Note: Recycling waste abrasive may be limited because: hazardous waste abrasives cannot be recycled; the cost of transport to recycling facilities; and the use of abrasive with high silica content is being discouraged due to health risks of long-term exposure to silica dust.

Contact the MMBU Environmental Technical Specialist for help to determine an appropriate option.

Re-use of wastes from abrasive blasting is encouraged under certain circumstances. Pursue recycling opportunities if the wastes are non-hazardous and recycling plants are in close proximity. Three industrial processes can re-use waste abrasives as follows:

Asphalt Plants	Non-hazardous waste abrasive may be used as aggregate for preparing asphalt.
Cement Kilns	Non-hazardous waste abrasive may be used as a cement additive. Each batch of waste needs to be evaluated for suitability.

Smelters	Teck Cominco will take waste abrasive delivered to its Trail facility with a silica content of 95% or greater (silica sand). A nominal fee may be charged.
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Landfill Disposal

To dispose of waste abrasive in landfills:

- determine the landfill soil quality acceptance criteria (see CSR soil standards table)
- contact the local Ministry of Environment office to make sure the landfill is permitted to accept the wastes under the *Environmental Management Act*
- inform the landfill owner of the nature of the waste and provide lab test results
- get written approval from the landfill operator prior to transport to confirm the waste will be accepted
- request the transporter provide a bill of lading to confirm that the waste was received at the landfill. Keep this correspondence on file

In general, non-hazardous waste abrasive containing total metals in concentrations not exceeding CSR soil standards can be landfilled at any permitted landfill. To qualify for this disposal option, the waste abrasive must:

- be non-hazardous (see “Waste Classification”, Hazardous Waste)
- meet Contaminated Sites Regulation (CSR) soil standards
- be approved by the landfill operator

CSR Soil Standards	Compare the total metals test results to the relevant values in the CSR soil standards table to determine if the material is suitable for disposal at a permitted landfill (see “Lab Testing of Waste”). The values in the table apply to the future intended use of the landfill site as declared to the Ministry of Environment by the landfill owner.				
	Metal	Agricultural µg/g	Urban Park µg/g	Commercial µg/g	Industrial µg/g
	Arsenic	15	15	15	15
	Barium	400	400	400	400
	Boron	2	N/S	N/S	N/S
	Cadmium	1.5	1.5	1.5	1.5
	Chromium	50	60	60	60
	Copper	90	90	90	90
	Lead	100	100	100	100
	Mercury	0.6	15	40	150
	Selenium	2	3	10	10
	Silver	20	20	40	40

	Uranium	N/S	N/S	N/S	N/S
	Zinc	150	150	150	150
<p>N/S = not specified in CSR</p> <p>Note: Interpretation can be complicated because different landfills have different acceptance criteria. Contact the MMBU Environmental Technical Specialist for assistance.</p> <p>Abrasive wastes that are classed as non-hazardous but contain total metals in concentrations exceeding the CSR Soil Standards can be disposed of in permitted landfills that accept industrial waste exceeding the industrial soil standards.</p>					
Hazardous Waste	<p>For abrasive wastes classed as hazardous, contact the MMBU Environmental Technical Specialist for assistance with disposal options.</p> <p>Note: For disposal of lead contaminated waste abrasive, see instructions in the Society for Protective Coatings (SSPC) Technology Guide No. 7, Guide to the Disposal of Lead-Contaminated Surface Preparation Debris.</p>				

Spill Response

Ensure Safety	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response – see OSH Standards 301: WHMIS and Hazardous Materials and 302: Safety During Spill Response.</p> <p>Ensure personal and public safety. Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE). If you are unfamiliar with the spilled material, consult the Material Safety Data Sheet (MSDS).</p> <p>Follow applicable safety standards and safe work procedures.</p>
Stop the Flow	<p>Act quickly. Plug leaks, set containers upright, and carry out any emergency repairs.</p>
Secure the Area	<p>Identify the extent of the spilled material and limit or prevent access to the area. Clear the area of all non-essential personnel.</p>
Contain the Spill	<p>Protect drains, sewers, culverts, waterways, and ditches, if there is a possibility of contaminants from the spill entering these. For example, cover spilled solids with a tarp if it is raining.</p>
Notify/Report	<p>Internal</p> <p>For a spill outside containment, notify your work leader or manager as soon as possible.</p> <p>The work leader or manager of the person providing notification</p>

	<p>of the spill must complete an Environmental Incident Report on SAP Incident Management System and distribute as required, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land More than Reportable Quantity</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Reportable Quantities for abrasives are:</p> <ul style="list-style-type: none"> • 5 kg of waste abrasive classified as leachable toxic waste • 200 kg of non-hazardous waste abrasive, or • 200 kg of new abrasive <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>To maintain good relations, the environmental specialist should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <p>For spills less than reportable quantity (see previous section for reportable quantities) to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p> <p>If the spill is into a fish-bearing waterway, report it immediately to the Department of Fisheries and Oceans (DFO) at 604-666-3500 (24-hour telephone).</p>
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<p>Clean Up</p>	<p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • labeled <p>Follow instructions for “Collecting Waste Abrasive”, “Labeling Containers”, “Transport Waste” and “Landfill Disposal.”</p> <p>Get labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, waste abrasive material from spill clean-up) • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • BC Environmental Management Act • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste
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Glossary - Definitions

Fish Habitat: Spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [Fisheries Act section 34]

Can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.

As a guideline, fish habitat includes the area extending 15 metres inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

Hazardous Waste: regulated by the BC *Environmental Management Act* and *Hazardous Waste Regulation*.

Land Where There Is Potential for The Spill to Reach Water: Land from which a spill could enter water or fish habitat, where:

- water means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada, and
- fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [Fisheries Act section 34]

Sample Transmittal Form: Any document accompanying samples, such as a Chain of Custody Form.

If the samples are, or are suspected to be, dangerous goods, the sample transmittal form must have on it the words "Test Samples" and the name and address of the person shipping the samples.

Water: All water in the fishing zones of Canada , all waters in the territorial sea of Canada and all internal waters of Canada. [*Fisheries Act* section 2, definition of Canadian Fisheries Waters] and includes fish habitat.

Asbestos and Asbestos-Containing Material

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Introduction

Note: This EBMP was last comprehensively reviewed on January 4, 2005, and may be out of date. Please contact Environmental Risk Management for changes. For any work involving Asbestos refer to BC Hydro’s [Asbestos Management Program](#) and ensure the [Asbestos Inventory System \(AIS\)](#) is updated at the end of the job. Not sure how to update AIS? Contact the AsbestosHelpdesk@bchydro.com.

Purpose: To document Environmental Best Management Practices for storage, transport, and disposal of waste asbestos-containing material (ACM).

Scope: Identification, storage, transport, and disposal of all types of ACM. Examples of materials that may contain asbestos include:

- cladding and paneling
- insulation on piping and wiring
- woven cloth and blankets
- ducts and pipes
- cements and sealers
- gaskets
- floor tile
- brake shoes
- paint, coal tar, and other coatings
- paper

Note: This is not a complete list.

Environmental Considerations

Environmental Hazards	<p>Improper management of asbestos-containing material (ACM) can cause:</p> <ul style="list-style-type: none"> • environmental damage including contamination of surface water and soil, and harm to animal, marine, and aquatic life • contamination of assets resulting in unplanned expenditures for corrective action • non-compliance with environmental legislation <p>ACMs do not pose an environmental risk unless asbestos fibres become airborne or are deposited to waterways.</p>
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BC Environmental Management Act and Hazardous Waste Regulation	Waste ACM is classed as hazardous waste when it contains friable asbestos fibres or asbestos dust in a concentration greater than 1% by weight. Hazardous waste is regulated in storage and transport by the BC <i>Environmental Management Act</i> and the BC <i>Hazardous Waste Regulation</i> .
BC Environmental Management Act and Spill Reporting Regulation	Spills of ACM classed as hazardous waste may need to be reported to the BC Provincial Emergency Program. See Reportable Spill Quantities for reporting requirements.

Purchasing Asbestos-Containing Material (ACM)

Do not purchase an ACM unless there is no viable alternative for a specific application.

If an ACM must be purchased, follow the requirements of section 6.10 of the BC *Occupational Health & Safety Regulation*.

In Place ACM

In Place ACM	ACM in place is not an environmental issue. Manage in place ACM in accordance with the <i>WCB Occupational Health and Safety Regulations</i> and BC Hydro's Asbestos Management Program . ACM may be left in place until removal becomes necessary due to deterioration, damage, equipment maintenance, repair, building demolition, or renovation. To prevent asbestos fibres from becoming airborne, do not disturb any ACM without following approved, written asbestos management procedures.
Testing	Prior to starting a maintenance or repair job, have suspect ACM tested for the presence of asbestos. See "Classification and Testing."
Disposal of Removed Material	Once ACM has been removed from service, follow "Disposing of Waste ACM". Do not reuse ACM for another application. See "Storage of Waste ACM" if the material will not be transported off site immediately.

Work Involving ACM

Classification and Testing

White, Brown and Blue Asbestos	Classify waste ACM as white, brown, blue, or a mixture of these. Get this information from the site's Asbestos Management Plan. If this information is not available, contact your OSH Specialist for help.
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TDG Regulated	Classify waste ACM as TDG regulated or not TDG regulated. If you are not sure, contact the MMBU Environmental Technical Specialist for help. See "Transporting Waste ACM" for more information and for examples of TDG regulated and non TDG regulated ACM.
Hazardous Waste	Classify waste ACM as hazardous waste or non-hazardous waste. If you are not sure, contact the MMBU Environmental Technical Specialist for help.
Taking Samples	<p>Warning: Samples must be taken by qualified personnel. Contact your OSH Specialist for assistance.</p> <p>Pack the samples:</p> <ul style="list-style-type: none"> • to avoid damage or leakage during transport – e.g., tape bubble wrap around sample bottles • so that the gross mass of each sample is less than 10 kg <p>Write the following on a label and place it on the outside of the sample package:</p> <ul style="list-style-type: none"> • the words "Test Samples" at least 2.5 cm high • BC Hydro department and location • piece of equipment or item from which sample was taken • common name or description of material (e.g., insulation, gasket, floor tile) • date sample was taken • tests required • name and telephone number of the person doing the sampling • name and contact details of person to whom test results should be sent
Transporting Samples	<p>Note: The shipment of waste ACM samples is exempt from many TDG requirements provided the above requirements for packaging and labeling samples are met.</p> <p>Fill out a sample transmittal form. Write down what the material is and include the words "Test Samples" and name and address of the consignor.</p> <p>If the samples are, or are suspected to be, dangerous goods, the sample transmittal form must have on it the words "Test Samples" and the name and address of the person shipping the samples.</p> <p>Forward samples to lab by a courier.</p> <p>Make sure the courier is aware that the package contains a sample of dangerous goods.</p> <p>Note: The courier does not require a hazardous waste transport licence.</p>

Environmental Management Plan

Warning! Only a qualified asbestos contractor is to handle waste ACM.

Preparing EMP	Prior to starting an asbestos removal project, determine whether an EMP is required. See EBMP Environmental Requirements for Planning and Doing Work – “Assess Work for Environmental Requirements” for information on how to do this. If an EMP is required, contact your environmental services group for assistance in preparing the EMP.
Communicating EMP to Workers	Communicate all requirements in the EMP to work crews, including contractors if any, at a tailboard or pre-job meeting. Keep a record of the tailboard or pre-job.
Monitoring Adherence to EMP	If an EMP has been prepared, make sure all requirements of the EMP are followed. For large projects, have an Environmental Monitor conduct periodic site visits. The Environmental Monitor may be a Natural Resource Specialist, a Technical Specialist, or an Environment and Social Issues Manager (ESIM).
Changing the EMP	If the scope of work or work plan changes, notify the Environmental Monitor to arrange for the EMP to be revised if necessary.

Packaging and Labeling

Warning! Only a qualified asbestos contractor is to package waste ACM.	
Double Bags	<p>Get bags from Store 1 (stock number 113-0029). Do not place more than 50 kg of waste ACM in each double bag.</p> <p>Note: Asbestos bags are pre-labeled</p> 
Bags and Drums	<p>For TDG regulated waste ACM in a single bag and drum, use a UN standardized drum with a certification code like the one at the right.</p> <p>Contact the MMBU Environmental Technical Specialist to obtain a drum if required.</p> <p>Put on a completed waste label on the outside of the drum:</p> <div style="text-align: right;">  <p>(Click for explanations)</p> </div>

	<p>BChydro </p> <table border="1"> <tr> <td>CONTAINER ID</td> <td><i>A123</i></td> </tr> <tr> <td>CONTENTS</td> <td><i>Waste Asbestos (insulation)</i></td> </tr> <tr> <td>SHIPPING NAME</td> <td><i>White Asbestos</i></td> </tr> <tr> <td>UN</td> <td><i>UN2590</i></td> </tr> <tr> <td>ORIGIN</td> <td><i>Burrard GS</i></td> </tr> <tr> <td>DATE</td> <td><i>Jan 14/2005</i></td> </tr> </table> <p><small>Refer to MSDS if applicable</small> <small>BCH STOCK #222-0357</small></p> <p>Obtain waste labels from the MMBU Environmental Technical Specialist if necessary.</p> <p>For TDG regulated waste ACM, fill in the waste label per “Marking Instructions: TDG Regulated Waste ACM”.</p> <p>For Non TDG regulated waste ACM, fill in the waste label per “Marking Instructions: Non TDG Regulated Waste ACM.”</p> <p>If drums were used before for another purpose, remove any labels that no longer apply.</p>	CONTAINER ID	<i>A123</i>	CONTENTS	<i>Waste Asbestos (insulation)</i>	SHIPPING NAME	<i>White Asbestos</i>	UN	<i>UN2590</i>	ORIGIN	<i>Burrard GS</i>	DATE	<i>Jan 14/2005</i>
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ORIGIN	<i>Burrard GS</i>												
DATE	<i>Jan 14/2005</i>												
<p>Other Packages</p>	<p>For other packages of non TDG regulated waste ACM, wrap completed package with DANGER ASBESTOS tape</p> <div style="text-align: center;">  <p>DANGER</p> <p>ASBESTOS Cancer and Lung Disease Hazard Authorized Personnel Only Respirators And Protective Clothing Are Required In This Area</p> </div> <p>Also put on a completed waste label.</p> 												
<p>Transport Bins</p>	<p>Put on completed waste label.</p>												

Storage of ACM

Hazardous Waste ACM Storage Requirements

<p>Minimize Hazardous Waste Storage Quantities</p>	<p>If the waste ACM is classed as hazardous waste, arrange for regular disposal to keep stored quantities less than 1,000 kg.</p> <p>Note: If the amount of stored hazardous waste ACM exceeds 1,000 kg, many additional requirements of the <i>Hazardous</i></p>
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	<p><i>Waste Regulation</i> may apply. Contact the MMBU Environmental Technical Specialist for help in finding out what is needed.</p>
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Physical Requirements for All Waste ACM

<p>Packaging and Labeling</p>	<p>Check that packaging is in good condition.</p> <p>Check that each bag, drum, bin, pallet, or container is labeled as per "Packaging and Labeling" requirements.</p>
<p>Storage Location and Signage</p>	<p>Place sealed bags or drums in a steel transport bin to await collection.</p> <p>Store contained waste ACM in a designated area of the site away from traffic.</p> <p>Restrict access to the storage location during non-working hours.</p> <p>Post a warning sign at each storage location reading:</p> <p style="text-align: center;">DANGER</p> <p style="text-align: center;">CONTAINS ASBESTOS</p> <p style="text-align: center;">AUTHORIZED PERSONNEL ONLY</p>

Administrative Requirements for All Waste ACM

<p>Minimize Storage Quantities</p>	<p>Arrange for regular disposal of containers to prevent the accumulation of large amounts of waste ACM.</p>
<p>Storage Record – Inventory</p>	<p>Keep a record of the waste ACM stored on site at all times. Record for each bag, drum, pallet, or container:</p> <ul style="list-style-type: none"> • when the ACM was removed from service or received from another site • a description of the contents, including shipping name and UN number • the amount of waste in kilograms • where it is stored on site • the waste manifest, shipping document, or bill of lading number when received or shipped • when the waste is removed from storage or shipped from site <p>Keep the records of waste ACM inventories for at least 10 years after the waste is removed from site.</p> <p>Download the Waste Asbestos Inventory Form  if needed. Use this form for all waste ACM, whether it is hazardous waste or not. Do not include waste ACM on the inventory of other hazardous wastes</p>
<p>Inspections</p>	<p>Inspect the storage facility monthly or as per the site or station maintenance plan.</p>

	<p>When inspecting:</p> <ul style="list-style-type: none"> • check pallets, bins, bags, and drums for damage and release of waste asbestos • remove any incompatible materials, including other wastes, from the storage area <p>Note: If any waste ACM has been released, see “Spill Response for ACM” for clean-up instructions.</p> <p>Keep a record of the inspection and report any findings to the site manager, Environment and Social Issues Manager, or Environmental Monitor.</p>
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Transporting TDG Regulated Waste ACM

Find out if the waste asbestos is TDG regulated and then see the sections that apply.

The waste is not TDG regulated if the asbestos is:

- fixed in a binding material or
- is included in a manufactured product

For assistance with determining if waste is TDG regulated, see the following:

- Definition of “Hazardous Waste”
- “Classification and Testing”
- Material Safety Data Sheet Search

Shipping: Planning

The shipper is responsible for the following:

TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the TDG regulations • a valid TDG Certificate of Training <p>When arranging transport, specify that the carrier must have:</p> <ul style="list-style-type: none"> • up-to-date training in the TDG regulations • a valid TDG Certificate of Training
Contacting Landfill Operator	<p>If the receiving site is a landfill, contact the site operator to get:</p> <ul style="list-style-type: none"> • their registration or permit number • written approval that the shipment will be accepted • confirmation the waste can be buried with 0.5 m of material immediately upon arrival at the landfill
Landfill Operator Requirements	<ul style="list-style-type: none"> • For waste ACM classed as hazardous waste, make sure the landfill operator holds a permit under the <i>Environmental Management Act</i> issued through the BC Ministry of Environment. • For asbestos removal projects, get a copy of this permit and keep it on file in the project office.
Shipment Tracking	<p>Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.</p>

Registration of Shipping and Receiving Sites	<p>The shipping and receiving sites do not have to be registered if the amount of waste ACM being transported is less than 1,000 kg.</p> <p>If the waste being transported is more than the 1,000 kg, the shipping and receiving sites must be registered. See BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • waste asbestos is registered, if it is a BC Hydro site • the quantity registered is more than the amount of waste asbestos being shipped <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Hazardous Waste Transport Licence	<p>Before arranging road transport, check if the carrier will need a Hazardous Waste Transport Licence. See “Hazardous Waste Transport Licence Requirements.”</p> <p>If a Hazardous Waste Transport Licence is needed, check at the time of arranging transport that the carrier has a valid license that allows for carrying of asbestos or class 9 miscellaneous dangerous goods.</p>
Carrier Spill/Emergency Response Plan	<p>Get a copy of the carrier's spill or emergency response plan. Keep a current version of the plan on file.</p> <p>Check that the plan includes procedures for response to an asbestos release and that drivers are trained in the procedures.</p> <p>Specify that the plan is to be carried in the contractor's truck during transport of waste ACM.</p>
Transport by BC Ferries	<p>When transporting waste ACM by ferry, contact BC Ferries in advance to confirm that the shipment is allowed on the specified sailing.</p>

Shipping: Preparing

The shipper is responsible for the following:

Condition Check	<p>Check that bags, pallets, drums, and bins are in good condition and suitable for transport. This means that:</p> <ul style="list-style-type: none"> • containment is not torn or otherwise damaged • containment is sealed so that asbestos fibres will not be released <p>See “Spill Response” for ACM for clean-up of any released material</p>
Packaging	<p>Check that packaging has been done according to instructions in “Packaging and Labeling.”</p> <p>If drums are used, check that each drum is marked with a certification code like the one at the right, unless an exemption allows something else.</p> <p>Note: UN packaging is not required for bins of sealed, double-bagged waste TDG regulated asbestos, provided the bins meet some conditions. For more information, see Exemptions from TDG Requirements Transport by Road of Some Dangerous Solids in Big Containers.</p>
Labels	<p>Make sure that all containers have completed waste and TDG labels per “Marking Instructions - TDG.”</p>



Shipping: Paperwork

The shipper is responsible for the following:

Type of Documentation	<p>Use a waste manifest to transport more than 5 kg of TDG regulated asbestos. See How to Complete Part A of a Manifest if necessary.</p> <p>Use a dangerous goods shipping document to transport less than 5 kg of TDG regulated asbestos. See How to Complete a Shipping Document if necessary.</p> <p>See also as applicable:</p> <ul style="list-style-type: none"> • “Transporting Using a Waste Manifest” • “Transporting Using a Dangerous Goods Shipping Document”
Transporting Using a Waste Manifest: Consignor (Shipper) Information	<p>Complete Part A of the manifest. See How to Complete Part A of a Manifest if needed.</p> <p>Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable.</p> <p>Enter BCG00122 as the Consignor (Generator) Provincial ID.</p> <p>If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Consignee Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site.</p>

	<p>See “TDG Information Table” for shipping name, UN number, class, and packing group if needed.</p> <p>Make sure that emergency contact numbers are filled in.</p>
Transporting Using a Waste Manifest: Carrier Information and Signature	<p>Give all copies of the waste manifest to the carrier to complete Part B. See How to Complete Part B of a Manifest if the carrier needs help. Have the carrier sign all copies of the waste manifest when accepting the shipment.</p>
Transporting Using a Waste Manifest: Copies	<p>Do the following with the manifest copies:</p> <p>Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1</p> <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • If the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Environmental Protection Division at the above address, and mail Copy 1 to the authority for the province receiving the waste at the address listed on the back of the manifest. <p>If the waste is being disposed of without being shipped through Salvage Warehouse M, (previously known as store 12) make an additional photocopy of Copy 1 and send the copy to:</p> <p>MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9</p> <p>Distribution of the Manifest summarizes how to distribute and retain the manifest copies</p>
Transporting Using a Waste Manifest: Inventory Update	<p>Update the Waste Asbestos Storage Inventory Form  to record that the waste has been shipped. Include the date the waste was shipped and the waste manifest or dangerous goods shipping document number.</p>
Transporting Using a Dangerous Goods Shipping Document: Shipping Document	<p>When completing a shipping document, see if needed:</p> <ul style="list-style-type: none"> • “TDG Information Table” for shipping name, UN number, class, and packing group • How to Complete a Shipping Document
Transporting Using a Dangerous Goods Shipping Document: Carrier Signature	<p>Have the carrier sign all copies of the shipping document when accepting the shipment.</p>

Transporting Using a Dangerous Goods Shipping Document: Copies	<ul style="list-style-type: none"> • Do the following with copies of the shipping document: • Consigner (Shipper) copy – retain on file for at least two years • Carrier copy – give to the carrier • If the waste is being disposed without being shipped through Salvage Warehouse M, photocopy the completed shipping document and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9
Transporting Using a Dangerous Goods Shipping Document: Inventory Update	Update the Waste Asbestos Storage Inventory Form  to record that the waste has been shipped. Include the date the waste was shipped and the waste manifest or dangerous goods shipping document number.

Shipping: Loading

The shipper is responsible for the following:

Precautions – Emergency Plan	Check that the driver has a copy of the carrier's spill or emergency response plan. If the driver is a BC Hydro employee, this will be a copy of BC Hydro's "Spill Response" for ACM. Note: If a contract hauler does not have a spill or emergency plan on the truck, ensure one is forwarded to the hauler (e.g., by fax) prior to allowing waste ACM to be loaded.
TDG Training	Check that the carrier has a TDG Certificate of Training and that it has not expired.
Hazardous Waste Transport Licence Check	If a Hazardous Waste Transport Licence is required, check the carrier has a valid licence and make sure that: <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying of asbestos or class 9 miscellaneous dangerous goods • the licence has not expired See "Hazardous Waste Transport Licence Requirements" if needed.
Placards	If the gross mass of dangerous goods is less than 500 kg, do not use placards. If the gross mass of dangerous goods is more than 500 kg, make sure that the placards shown in the "Placard Table" are on all four sides of the transport unit before loading. The shipper must offer to supply the placards if they are needed.
Loading Check	Check that the materials loaded match what is given on the shipping documentation.

Load Safe and Secure	Make sure that: <ul style="list-style-type: none"> • if using drums or other containers, they are sealed and upright • the load will not shift during transport • no sharp edges could damage or puncture the load • if using an open top bin, the load is tarped.
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Carrying: Accepting

The carrier is responsible for the following:

Precautions – Emergency Plan	Have a copy of your company's spill or emergency response plan on the truck. If you are a BC Hydro employee, this will be a copy of BC Hydro's "Spill Response" for ACM.
TDG Training	Have: <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training
Hazardous Waste Transport Licence	Have a valid Hazardous Waste Transport Licence that allows carrying of asbestos. See "Hazardous Waste Transport Licence Requirements" if necessary.
Label Check	Check that: <ul style="list-style-type: none"> • Each outer package or container has a TDG hazard label, shipping name, and UN number (see "TDG Information Table" if necessary). • The markings and labels on the packages or containers match what is on the shipping documentation.
Packaging and Leak Check	Check that bags, pallets, drums, and bins are in good condition and suitable for transport. This means that: <ul style="list-style-type: none"> • containment is not torn or otherwise damaged • containment is sealed so that asbestos fibres will not be released Do not accept the shipment if any torn or unsealed bags are found, or if the consignment appears to be leaking. Follow "Spill Response" for ACM for clean-up of any released material. Warning: Do not handle spilled ACM unless you are a qualified asbestos contractor.
Placards	If the total mass of dangerous goods and containers is more than 500 kg, make sure that the vehicle displays appropriate placards on all four sides of the transport unit before loading. See "Placard Table" if necessary. The shipper must offer to provide the placards if they are needed.

Acceptance	Accept the shipment for transport based on the above checks and have it loaded. If the shipment is more than 5 kg, complete Part B of the manifest. See How to Complete Part B of a Manifest if necessary. Sign all copies. Return Copies 1 and 2 to the shipper. Take Copies 3 to 6 with the load. If rejecting the shipment, explain the reasons to the shipper.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the manifest.
Load Safe and Secure	Make sure that: <ul style="list-style-type: none"> • drums are upright • the load will not shift during transport • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	Keep a copy of the shipping documentation in the place specified by TDG regulations. See Required Locations for Documents When Transporting Dangerous Goods or Hazardous Waste if necessary. If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. See “Hazardous Waste Transport Licence Requirements” if necessary.
Placards	Replace any lost or damaged placards, if placards are needed. See the “Placard Table” if necessary.
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to release material.
Spill Response	<p>Warning: Do not handle spilled ACM unless you are a qualified asbestos contractor.</p> Follow “Spill Response” for ACM. Arrange for trained asbestos handling experts to travel to the spill site for clean-up.

Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	If the load was transported using a shipping document, have the receiver sign it. If the load was transported using a waste manifest: <ul style="list-style-type: none"> • have the receiver complete Part C – see How to Complete Part C of a Manifest if needed. • sign Copies 3 to 6
Copies	If the load was transported using a shipping document, keep it on file for at least two years. If the load was transported using a waste manifest: <ul style="list-style-type: none"> • keep Copy 4 on file for at least two years • give Copies 3, 5, and 6 to the receiver
Removal of Placards	If placards were used, remove or cover them after unloading unless a spill or leak of asbestos has occurred. If a spill or leak has occurred, follow “Spill Response” for ACM and remove placards after clean-up. Warning: Do not handle spilled ACM unless you are a qualified asbestos contractor.

Receiving

The receiver is responsible for the following:

Documentation from Carrier	Get the shipping documentation from the carrier. This is either: <ul style="list-style-type: none"> • Copies 3 to 6 of the waste manifest for quantities more than 5 kg, or • the shipping document for quantities less than 5 kg If there is no waste manifest when there is supposed to be one, contact your environmental services group so that appropriate authorities can be notified.
TDG Training	Have, or work under the supervision and in the presence of someone who has: <ul style="list-style-type: none"> • up-to-date training in the TDG regulations • a valid TDG Certificate of Training
Authorization for Receiving Hazardous Waste	If the waste being received is less than 1,000 kg, the receiving site does not have to be registered. See “Receiving Check”. If the waste being received is more than 1,000 kg, the receiving site must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that: <ul style="list-style-type: none"> • the receiving site is on the list • waste asbestos is registered • the quantity registered is more than the amount of waste

	<p>asbestos-containing material being received</p> <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Receiving Check	<p>If what is on the shipping documentation does not agree with what is received, report to your supervisor.</p> <p>Note: For a shipment requiring a waste manifest, contact your environmental services group so that the appropriate authorities can be notified if the shipment:</p> <ul style="list-style-type: none"> • does not match the description on the manifest, or • is not within five percent of the amount shown on the waste manifest, when the shipment is more than 100kg
Unloading: Condition Check	<p>Check that there are no signs of damage or leakage from bags, drums, or bins.</p> <p>If a leak or damaged package is found, follow “Spill Response” for ACM.</p> <p>Warning: Do not handle spilled ACM unless you are a qualified asbestos contractor.</p>
Completion of Paperwork: Signature on Shipping Document	<p>If the load was transported using a shipping document, sign it and return to the carrier.</p>
Completion of Paperwork: Completion of Waste Manifest Part C	<p>If the load was transported using a waste manifest:</p> <ul style="list-style-type: none"> • complete Part C - How to Complete a Manifest if needed • enter BCG00122 as the Consignee (Receiver) Provincial ID • sign Copies 3 to 6
Completion of Paperwork: Copies	<p>If the load was transported using a waste manifest:</p> <ul style="list-style-type: none"> • Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 • Copy 4 – return to the carrier • Copy 5 – keep on file for at least two years • Copy 6 – mail to the consignor
Completion of Paperwork: Inventory Update	<p>Update waste inventory records to show the amount of waste received. Include the date the waste was received and the manifest number if one was used.</p> <p>Download and use the Asbestos Waste Inventory Form  if necessary.</p>

Transporting Non TDG Regulated Waste Asbestos

Shipping: Planning

The shipper is responsible for the following:

Contacting Landfill Operator	If the receiving site is a landfill, contact the site operator to get written approval that the shipment will be accepted.
Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.

Shipping: Preparing

The shipper is responsible for the following:

Condition Check	<p>Check that pallets, packaging, drums, and bins are in good condition and suitable for transport. This means that containment is not torn or otherwise damaged.</p> <p>Follow “Spill Response” for ACM for clean-up of any released material.</p> <p>Warning: Do not handle spilled ACM unless you are a qualified asbestos contractor.</p>
Packaging	<p>Check that packaging has been done according to instructions in “Packaging and Labeling.”</p> <p>Example of a completed package</p>  <p>Note: UN packaging is not required for non TDG regulated waste asbestos.</p>
Labels	Make sure each container, package, or drum has a completed waste label per “Marking Instructions – Non TDG”.

Shipping: Paperwork

The shipper is responsible for the following:

Type of Documentation	Use a bill of lading for all quantities of non TDG regulated waste asbestos.
Inventory Update	Update the "Waste Asbestos Storage Inventory Form" to record that the waste has been shipped. Include the date the waste was shipped and the bill of lading number

Shipping: Loading

The shipper is responsible for the following:

Precautions – Emergency Plan	<p>Check that the driver has a copy of the carrier's spill or emergency response plan.</p> <p>If the driver is a BC Hydro employee, this will be a copy of BC Hydro's "Spill Response" for ACM.</p> <p>Note: If a contract hauler does not have a spill or emergency plan on the truck, ensure one is forwarded to the hauler (e.g., by fax) prior to allowing waste ACM to be loaded.</p>
Placards	Do not use placards.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the bill of lading.
Load Safe and Secure	<p>Make sure that:</p> <ul style="list-style-type: none"> • if using drums or other containers, they are sealed and upright • the load will not shift during transport • no sharp edges could damage or puncture the load • if using an open top bin, the load is tarped

Carrier: Accepting

The carrier is responsible for the following:

Precautions – Emergency Plan	<p>Have a copy of your company's spill or emergency response plan on the truck.</p> <p>If you are a BC Hydro employee, this will be a copy of BC Hydro's "Spill Response" for ACM.</p>
Packaging and Leak Check	<p>Check that pallets, packaging, drums, and bins are in good condition and suitable for transport. This means that containment is not torn or otherwise damaged.</p> <p>Do not accept the shipment if any torn or unsealed bags are found, or if the consignment appears to be leaking. Follow "Spill Response" for ACM for clean-up of any released material.</p> <p>Warning: Do not handle spilled ACM unless you are a</p>

	qualified asbestos contractor.
Placards	Do not use placards.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded. If rejecting the shipment, explain the reasons to the shipper.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the bill of lading.
Load Safe and Secure	Make sure that: <ul style="list-style-type: none"> • drums or other containers are upright • the load will not shift during transport • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load.

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	Keep a copy of the bill of lading in the cab.
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to release material.
Spill Response	Warning: Do not handle spilled ACM unless you are a qualified asbestos contractor. Follow "Spill Response" for ACM. Arrange for trained asbestos handling experts to travel to the spill site for clean-up.

Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	If the load was transported using a bill of lading, have the receiver sign it.
Copies	Keep the bill of lading on file for at least two years.

Receiving

The receiver is responsible for the following:

Documentation from Carrier	Get the bill of lading from the carrier.
Receiving Check	If what is on the bill of lading does not agree with what is received, report to your supervisor.

Unloading: Condition Check	Check that there are no signs of damage or leakage from bags, drums, or bins. If a leak or damaged package is found, follow “Spill Response” for ACM. Warning: Do not handle spilled ACM unless you are a qualified asbestos contractor.
Completion of Paperwork: Signature on Shipping Document	If the load was transported using a bill of lading, sign it and return to the carrier.
Completion of Paperwork: Inventory Update	Update waste inventory records to show the amount of waste received. Include the date the waste was received and the bill of lading if one was used. Download and use the “Asbestos Waste Inventory Form” if necessary.

Disposing of Waste ACM

Disposal Options	Once ACM has been removed from service, do not reuse these materials for another application. Dispose of large quantities of waste ACM directly from the project site to a landfill. Dispose of small quantities of waste ACM directly to a landfill or to a registered BC Hydro site for temporary storage. Contact the MMBU Environmental Technical Specialist for assistance. For waste ACM classed as hazardous waste, make sure the landfill operator holds a permit under the <i>Environmental Management Act</i> issued through the BC Ministry of Environment
Storage Before Disposal	See “Storage.”
Shipping for Disposal	See “Transport.”

Spill Response

Waste ACM

The following steps are presented as general guidelines. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your Regional Environmental Coordinator / Environmental and Social Issues Manager or your environmental services group.

1. Ensure Safety	Ensure personal and public safety
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<p>2. Secure the Area</p>	<p>Limit or prevent access to the area. Clear the area of all personnel.</p> <p>Cordon off the area using DANGER ASBESTOS barrier tape if available.</p>  <p>Place the tape on stands at least 3 m beyond the perimeter of spilled material.</p> <p>Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>						
<p>3. Notify/Report</p>	<p>Internal</p> <p>For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the manager below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="630 936 1370 1041"> <tr> <td>Eddie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table> <p>The work leader or manager of the person providing notification of the spill must complete an Environmental Incident Report on SAP Incident Management System and distribute as required, preferably within 24 hours of the spill.</p> <p>External</p> <p>Spill to Water (Any Quantity), or Spill to Land More than Reportable Quantity (More than 25 kg friable ACM in transit; more than 50 kg friable ACM on site; more than 200 kg non-friable ACM in transit or on site).</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the Fisheries Act), and • Local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill 	Eddie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Eddie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

	<ul style="list-style-type: none"> • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (friable ACM), in transport, and more than the reportable quantity, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External</p> <p>Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity (Less than 25 kg friable ACM in transit; less than 50 kg friable ACM on site; less than 200 kg non-friable ACM in transit or on site):</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
<p>4. Clean Up</p>	<p>Warning: Do not handle spilled ACM unless you are a qualified asbestos contractor.</p> <p>Handle waste ACM using only specialized equipment and qualified asbestos contractors working in accordance with written procedures that meet the <i>WCB Occupational Health and Safety Regulation</i> sections 6.1–6.32. Contact your OSH Specialist for assistance.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, waste asbestos from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated)

	<ul style="list-style-type: none"> • date of waste generation <p>Store waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of wastes in accordance with:</p> <ul style="list-style-type: none"> • BC Environmental Management Act • Transportation of Dangerous Goods Act and Regulations, if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous wastes
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Glossary - Definitions

Asbestos – Naturally occurring, fibrous minerals including the varieties white asbestos (chrysotile, actinolite, anthophyllite, tremolite), blue asbestos (crocidolite), and brown asbestos (amosite, myosorite).

Asbestos-containing material (ACM) – Any manufactured article or other material that contains 1% or more asbestos by weight at the time of manufacture, or that contains 1% or more asbestos as determined by WCB Method 0205 or other analytical technique acceptable to WCB. Asbestos was commonly used in a wide variety of industrial applications including insulation, coatings, and construction materials. There may be a high degree of variability in the proportion of asbestos in an ACM ranging in concentration from 1% to greater than 90%.

Friable – Any material that, when dry, can easily be crumbled or powdered by hand pressure, or a material that is crumbled or powdered.

Gross mass – As applied to dangerous goods, means the total mass of dangerous goods including containers.

Hazardous waste – Regulated by the *BC Environmental Management Act and Hazardous Waste Regulation*. The *BC Hazardous Waste Regulation* classifies a waste asbestos-containing material (ACM) as "Hazardous Waste" when it contains friable asbestos fibers or asbestos dust in a concentration greater than 1% by weight. Asbestos that is tightly bound within a solid matrix so that it is not easily crumbled by hand is non-friable and is not classed as a hazardous waste.

Examples of asbestos-containing materials that **are** usually dangerous goods:

- fragments of cladding, wallboard, and floor tile
- insulation
- sprayed coatings
- fragments, scrapings, and dust from gaskets containing asbestos
- fragments of asbestos pipe
- used HEPA vacuum filters and paper filter bags
- rags and paper towels used to decontaminate equipment and clothing
- used drop sheets
- used disposable coveralls

Examples of asbestos-containing materials that are **not** usually dangerous goods:

- whole pieces of cladding, wallboard, and floor tile
- whole pieces of transit ducts or pipes
- coal tar coatings

Land Where There is Potential for the Spill to Reach Water – Land from which a spill could enter water or fish habitat, where:

- water means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada, and
- fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34]
- fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.

As a guideline, fish habitat includes the area extending 15 meters inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

Qualified asbestos contractor – A person who:

- has in place an Exposure Control Plan that meets the requirements of section 5.54 of the *OH&S Regulation*
- provides written work procedures that meet the requirements of section 6.8 of the *OH&S Regulation* and the WCB publication, *Safe Work Practices for Handling Asbestos*, and
- carries out the work under the direction of a supervisor with experience in the applicable work activity level (i.e., low, moderate, or high)

Sample Transmittal Form – Any document accompanying samples, such as a Chain of Custody Form.

Shipping Documentation – Whatever documents must go with a shipment. Depending what and how much is being shipped; these documents could be one or more of the following:

- a bill of lading
- a full dangerous goods shipping document
- a document with information required by an exemption from TDG requirements
- a movement document/manifest
- a Permit for Equivalent Level of Safety

TDG Regulated – Regulated by the *Transport of Dangerous Goods Act and Regulations* when transported. Asbestos-containing materials having fibers not fixed in a binder material or included in a manufactured product are classed as dangerous goods. Asbestos-containing materials where the fibers are fixed in a binder or included a manufactured product are **not** classed as dangerous goods.

UN Number – Previously known as product identification number (PIN).

Water – All water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada. [*Fisheries Act* section 2, definition of Canadian Fisheries Waters] and includes fish habitat. Fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34]. Fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow.

References

This section contains information about:

- Marking Instructions
 - Waste TDG Regulated Asbestos
 - Waste Non TDG Regulated Asbestos
- Placard Table
- Hazardous Waste Transport Licence Requirements
- TDG Information Table

Marking Instructions: Waste TDG Regulated ACM

All containers of waste TDG regulated ACM must have:

- completed waste labels

In addition, drums or other containers of waste TDG regulated ACM less than 450 L must have:

- TDG hazard labels, and
- a UN packaging code

The shipper must make sure that the markings and labels are on the containers before loading begins. The carrier must maintain the markings and labels during transport.

If the containers were used before for something else, remove or erase any labels that no longer apply.

Waste Labels

Get waste labels from the MMBU Environmental Technical Specialist.

Fill in:

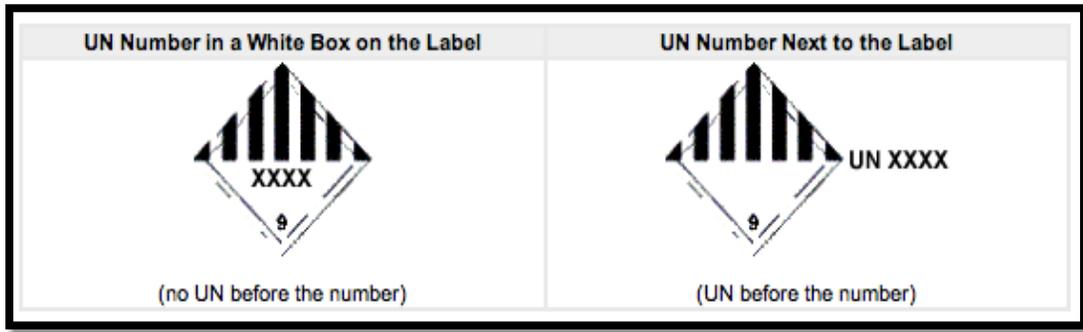
- Container ID: A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label.
- Contents: What is in the container – for example, waste asbestos (insulation).
- Shipping Name: White asbestos, brown asbestos, or blue asbestos.
- UN number: UN2590 or UN2212, depending on the type of asbestos. Use UN2590 unless “Classification and Testing” indicates otherwise.
- Origin: Where the waste was generated – for example, Burrard Generating Station.
- Date: When the waste was generated – use the start date if the container is filled over time.

BC Hydro	
CONTAINER ID	A123
CONTENTS	Waste Asbestos (insulation)
SHIPPING NAME	White Asbestos
UN	UN2590
ORIGIN	Burrard GS
DATE	Jan 14/2005
<small>Refer to MSDS if applicable</small> <small>BCH STOCK #222-0357</small>	

TDG Hazard Labels

Put a Class 9 hazard label on the side (not the bottom or the top), next to the waste label.

Note: If the hazard label cannot be put next to the waste label, the UN number must be shown with the hazard label in one of the ways below:



Replace XXXX with 2590 or 2212, depending on the type of asbestos. Use 2590 unless lab testing indicates otherwise.

UN Packaging Codes

Drums of waste TDG regulated waste ACM must have a packaging code like that to the right, unless an [exemption](#) allows something else.



Marking Instructions: Waste Non TDG Regulated ACM

All containers of TDG ACM must have:

- completed waste labels

If the containers were used before for something else, remove or erase any labels that no longer apply.

Waste Labels

Get waste labels from the MMBU Environmental Technical Specialist

Fill in:

- Container ID: A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label.
- Contents: What is in the container – for example, waste asbestos (floor tile).
- Origin: Where the waste was generated – for example, Burrard Generating Station.
- Date: When the waste was generated – use the start date if the container is filled over time.
- Shipping Name: NR (not regulated)
- UN Number: NR

BChydro 	
CONTAINER ID	A123
CONTENTS	Waste Asbestos (floor tile)
SHIPPING NAME	NR ← Not regulated
UN	NR ←
ORIGIN	Burrard GS
DATE	Jan 14/2005
<small>Refer to MSDS if applicable</small>	
<small>BCH STOCK #222-0357</small>	

Placards: TDG Regulated Waste ACM

Shipments of TDG regulated dangerous goods more than 500 kg gross mass must have placards.

If placards are needed:

- the shipper must offer to provide the placards, and
- the placards must be on all four sides of a transport unit before loading.

Note: When transport is by truck, the front placard can be put on the front of the truck. If the transport unit has a permanent frame, the placards can be attached to the frame.

The carrier must maintain the placards until after the goods have been unloaded, unless a spill or leak has occurred.

If a spill or leak has occurred, follow “Spill Response” for ACM and remove the placards after clean-up.

Warning! Do not handle spilled ACM unless you are a qualified asbestos contractor.

Types of Dangerous Goods	Placard	UN Number
ACM and no other TDG regulated Dangerous Goods (For example, white or brown asbestos only)		Show UN number if load is more than 4,000 kg of one material†
ACM and other TDG regulated Class 9 dangerous goods (For example, white or brown asbestos and waste antifreeze)		No UN number
ACM and other TDG regulated dangerous goods (For example, waste asbestos and flammable paint)		No UN number

Exceptions When Danger Placards Cannot Be Used

Danger placards cannot be used for any dangerous goods that:

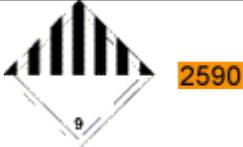
- need an [Emergency Response Assistance Plan](#)  (ERAP)
- are in a container larger than 450 L
- are explosives
- are more than 4,000 kg of the same UN number from one shipper

Note: For dangerous goods transported by BC Hydro, it will be very rare that Danger placards cannot be used for mixed loads when placards are needed.

The ERAP Checker can be used to see if an ERAP is needed.

Note: The ERAP Checker uses a macro. Click "Yes" or "Enable Macros" if a warning message appears.

If Danger placards cannot be used, contact the MMBU Environmental Technical Specialist with details to find out what is needed.

† The UN number can be shown either within a white rectangle on the placard or on an orange panel next to the placard. Do not include the letters "UN".		
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Hazardous Waste Transport Licence Requirements

Transport on a public road of more than the transport licence quantity of a hazardous waste requires a Hazardous Waste Transport Licence.

Waste Type	Transport License Quantity	
Friable Asbestos Waste	Transport by Contractor	Transport by BC Hydro Employee
	5kg	1,000kg

TDG Information Table: Waste ACM

Shipping Name	TDG Hazard Label	UN Number	Class	Packing Group
White Asbestos		UN2590	9	III
Blue Asbestos or Brown Asbestos		UN2212	9	II

Note: Classify waste ACM as white asbestos (UN2590) unless "Classification and Testing" indicates otherwise.

Batteries

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Introduction

Note: This EBMP was last comprehensively reviewed on February 17, 2007, and may be out of date. Please contact Environmental Risk Management for changes.

Purpose: To document Environmental Best Management Practices for using or managing batteries and battery fluids, based on a life-cycle approach from purchasing through to disposal.

Scope: All types of batteries and battery fluid used for any purpose.

General Principles for Managing Batteries

BC Hydro is committed to managing batteries in an environmentally sound and responsible manner. In summary, the main principles for managing batteries are:

- Batteries will be used and handled to minimize risks to human health, property, and the environment.
- Batteries will be used and handled according to applicable legislation and codes.
- Batteries will be handled and used so that the hazardous materials they contain are not released to the environment.
- Batteries will be reused or recycled as much as possible.
- Other sections of this best management practice provide more information for various specific situations.

Environmental Considerations

Hazards	<p>Wet cell batteries, gel cells, and dry cells all contain corrosive, reactive and/or toxic materials. Battery fluids are either very acidic or very alkaline corrosive liquids.</p> <p>Hydrogen can be given off during:</p> <ul style="list-style-type: none"> • charging of wet cells, and • storage of used dry cells <p>To prevent explosions:</p> <ul style="list-style-type: none"> • make sure that charging areas for wet cells are ventilated • do not pack used dry cells in tightly sealed containers • do not recharge dry cells unless they are made to be
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	<p>recharged</p> <p>Batteries can generate large amounts of heat and sparks if short-circuited.</p> <p>Spills or leaks of battery fluids, exposure of batteries to fire, improper disposal, improper handling, or lack of attention to regulatory requirements, can cause:</p> <ul style="list-style-type: none"> • personal injury • environmental damage (e.g., soil contamination) • damage to assets • non-compliance with environmental legislation, or • unplanned expenditures for corrective action <p>Batteries can give off hazardous materials if exposed to fire. Violent reactions can occur if battery contents come into contact with some metals or some solvents – refer to data sheets for specific battery types.</p>
WHMIS Regulation	<p>Batteries are manufactured articles under the <i>Hazardous Products Act</i> and are exempt from WHMIS labeling requirements. However, any person doing working with industrial batteries must be trained as to their hazards.</p> <p>Battery fluids are fully regulated by WHMIS because they are not manufactured articles.</p>
Transport of Dangerous Goods Regulations	<p>When new or waste, all batteries except some dry cells and all battery fluids are dangerous goods. Batteries and battery fluids which are dangerous goods are regulated in transport unless an exemption allows something else.</p> <p>New carbon zinc dry cells and new or waste small lithium batteries may not be regulated as dangerous goods.</p> <p>Note: The transport sections of this EBMP are based on the new Clear Language TDG Regulations.</p>
Environmental Management Act and Hazardous Waste Regulation	<p>Waste batteries and battery fluids must be managed as hazardous waste as per the <i>Environmental Management Act</i> and the <i>Hazardous Waste Regulation</i>.</p>

Battery Types

The environmental issues related to transporting, storing, collecting, disposing of, or recycling batteries and battery fluids vary according to battery type, because the chemical makeup is different for each type. Determine the battery or battery fluid type from markings, operating instructions, or [Material Safety Data Sheets](#). Following are some general notes on battery types.

Wet Cell Batteries

Wet Cell Batteries Filled With Acid	<p>Acid batteries are composed of a series of metal plates immersed in acid solution (electrolyte) in glass, hard rubber, or plastic compartments (cells). Acid electrolyte is corrosive to most metals. For example, wet cell batteries include lead acid batteries</p>
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	(including lead calcium and lead antimony) used in vehicles and at substations, diesel stations, or mobile stations.
Caustic Potash Batteries	Alkali batteries are composed of a series of metal plates immersed in alkaline solution (electrolyte) in glass, hard rubber, or plastic compartments (cells). Alkaline electrolyte is corrosive to aluminum, zinc, and tin. For example, BC Hydro uses caustic potash batteries on mountain-top repeater network sites where accessibility is a problem, and at tiltmeter sites. Non-activated caustic potash batteries are dry because they do not contain electrolyte. All spent caustic potash batteries are considered wet.
Nickel-Cadmium Cells	The two types of nickel-cadmium cells are gas-tight (or sealed) and open (or vented). The large rectangular nickel-cadmium cells in the open cells are often used for industrial applications – for example, at diesel stations and remote mountain-top repeater sites.
Non-Spillable Wet Cell Batteries	These batteries are also known as gel cells and are composed of a series of metal plates immersed in a non-spillable gel of alkaline or acid electrolyte in glass, hard rubber, or plastic cells. These batteries can be found at diesel generation sites. They are also used in conjunction with fire suppression systems.

Dry Cell Batteries

Carbon Zinc Batteries	Zinc-carbon or zinc chloride batteries (ordinary batteries) are the best-known, least-expensive, and least-powerful batteries. They are often used for low-power output devices such as flashlights, radios, lanterns, and toys and are not suitable for sudden or sustained output demands.
Alkaline Batteries	Alkaline (manganese dioxide) batteries, also called long-lasting batteries, are high-performance batteries. They are used for high-current demand applications or for devices that use current over long periods of time and at various temperature extremes.
Rechargeable Nickel Cadmium Cells	The two types of nickel-cadmium cells are gas-tight (or sealed) and open (or vented). Small gas-tight or sealed secondary cells, commonly known as rechargeable Ni-Cad batteries, can theoretically be recharged more than 1,000 times over periods of several years before disposal. Ni-Cad dry cells are used in power tools, cellular phones, computers, and camcorders.
Button Cells	Types of button cells include lithium, mercury oxide, and silver oxide. They are used in watches, calculators, and cameras.
Lithium	Lithium batteries have high energy density and long shelf life. These batteries are therefore useful for memory backup in case of power loss in electronic instruments and controllers. Because of the high energy density, short-circuiting lithium batteries can generate large amounts of heat leading to burns or explosion of the casing. Small lithium batteries are not TDG regulated.

Purchasing

The purchaser is responsible for the following:

Minimum Quantities	Purchase the minimum quantities of batteries needed to meet use and inventory requirements (because of the limited shelf life).
Purchase Direct	Purchase from a local supplier or from the manufacturer when required because batteries are not stocked in Stores.
Take-Back of Waste Batteries	Request that the supplier or manufacturer take back waste batteries equivalent to new batteries purchased.
Good Purchasing Practice	Use the good purchasing practices provided in BC Hydro's Effective Purchasing Guidelines.

Transporting New Batteries or Battery Fluid

If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Shipping: Planning

The shipper is responsible for the following:

Battery Types	Find out what type of batteries (wet or dry, acid or alkaline) or battery fluids are being transported. See "Battery Types" for more details if necessary.
TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training <p>When arranging transport, specify that the carrier must have:</p> <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training
Precautions	If handling wet batteries or battery fluids, have an Aggressive Liquids Spill Kit available. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose.

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle batteries or battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.
Precautions	If handling wet batteries or battery fluids, have an Aggressive Liquids Spill Kit available. Do not use oil spill kits on battery fluid spills—they are not effective for this purpose. Do not try to

	<p>neutralize the spill – this could result in a violent reaction</p> <p>Note: Waste sorbents from clean-up of battery fluid spills are hazardous waste and must be handled properly – see Waste Rags and Sorbents: WM-460 Make sure that drains or watercourses to which spilled battery fluids might leak are protected (e.g., use a drain cover).</p>
<p>Condition and Leak Check</p>	<p>Check that casings or containers are in good condition and suitable for transport.</p> <p>For all batteries this means that terminals are protected to prevent short circuits.</p> <p>In addition, for wet batteries or battery fluids this means that:</p> <ul style="list-style-type: none"> • cell or container caps are fully closed • casings or containers are not cracked, bulging, or leaking • containers of battery fluid are marked with a packaging code as shown in the section below on packaging, unless an exemption allows something else <p>If batteries or containers are found that are not suitable for transport:</p> <ul style="list-style-type: none"> • put the batteries or containers in an overpack <p>See “Spill Response” to clean up any leakage.</p>
<p>Packaging</p>	<p>Package separately batteries and battery fluids with different shipping names and UN numbers (see References – TDG Information Table).</p> <p>Note: Different types of batteries and battery fluids are packaged separately to avoid hazardous reactions in case of a leak, and to allow proper TDG labeling.</p> <p>For all batteries, make sure that:</p> <ul style="list-style-type: none"> • batteries are secured or packaged to prevent movement • anything stacked on top of the batteries will not be supported by the terminals (including upper layers of batteries where batteries are packed in layers) • layers of batteries are separated by a sheet of non-conductive material <p>In addition, for wet batteries or battery fluids, package:</p> <ul style="list-style-type: none"> • to keep batteries or containers upright • to prevent leaks or spills during expected conditions of transport • to prevent freezing if necessary—see freezing points • in containers marked with a packaging code like that at the right, unless an exemption allows something else <div style="text-align: right;">  </div> <p>Note: BC Hydro has a Wet Battery Permit  that allows transport of wet batteries in packaging that is not marked with a packaging code – see Wet Batteries for a summary of exemption conditions.</p>

Labels	<p>Make sure all packages or containers have TDG markings and labels unless an exemption allows something else.</p> <p>For:</p> <ul style="list-style-type: none"> wet batteries being transported under BC Hydro's Wet Battery Permit, see "Marking Instructions for Packages of Wet Batteries" all other cases, see the "Marking Instructions" and the "TDG Information Table" <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>
Documentation	<p>Complete a shipping document unless an exemption allows something else. When completing a shipping document, see if needed:</p> <ul style="list-style-type: none"> "TDG Information Table" for shipping name, UN number, class, and packing group "Placard Table" for placards How to Complete a Shipping Document <p>Note: If wet batteries are transported under BC Hydro's Wet Battery Permit, write: "Dangerous Goods Permit No. SU 6441 – by road or railway vehicle or by ship (and permit expiry date) on the shipping document.</p>

Shipping: Loading

The shipper is responsible for the following:

Safety	<p>Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.</p>
Precautions	<p>If handling wet batteries or battery fluids, have an Aggressive Liquids Spill Kit available. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose. Do not try to neutralize the spill – this could result in a violent reaction.</p> <p>Note: Waste sorbents from clean-up of battery fluid spills are hazardous waste and must be handled properly – see Waste Rags and Sorbents: WM-460. Make sure that drains or watercourses to which spilled battery fluids might leak are protected (e.g., use a drain cover).</p> <p>If loading wet batteries or battery fluids, check that the carrier has an Aggressive Liquids Spill Kit and a copy of the Spill Response Card 📄 on the truck.</p>
TDG Training	<p>Make sure that the carrier's <i>TDG Certificate of Training</i> has not expired.</p>
Placards	<p>If the gross mass of dangerous goods is more than 500 kg, make sure that the placards shown in the "Placard Table" are on all four sides of the transport unit before loading. The shipper must offer to provide the placards if they are needed.</p>

Loading Equipment and Methods	Use equipment and methods designed to handle and load the containers safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the materials loaded match what is given on the shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load (including protection from freezing – see freezing points) • batteries and containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
Documentation	If the load is being transported under an exemption, provide the carrier with: <ul style="list-style-type: none"> • a copy of the bill of lading for the shipment, and • any other shipping documentation the exemption says is needed Otherwise: <ul style="list-style-type: none"> • have the Carrier sign all copies of the shipping document when accepting the shipment • keep the Consignor (Shipper) copy on file for at least two years • give the other copies to the carrier

Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.
Precautions	If carrying wet batteries or battery fluids, have an Aggressive Liquids Spill Kit and a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose.

TDG Training	Have: <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training
Label Check	Unless an exemption allows something else, check that: <ul style="list-style-type: none"> • each outer package or container has a TDG hazard label, shipping name, and UN number • the markings and labels on the packages or containers match what is on the shipping documentation, and • the outer packaging is marked with a packaging code like that at the right  <p>Note: BC Hydro has a Wet Battery Permit that allows transport of wet batteries in packaging that is not marked with a packaging code. In this case, check that the shipping document has on it the words: "Dangerous Goods Permit No. SU 6441 – by road or railway vehicle or by ship (and permit expiry date)." </p>
Packaging and Leak Check	Check that the outer packaging for batteries or containers of battery fluids is in good condition and suitable for transport. This means that: <ul style="list-style-type: none"> • packaged materials are not leaking • outer containers are closed • any packaging (e.g., boxes, pallets, shrink-wrap, or strapping) is not damaged Do not accept materials unsuitable for transport unless fully contained in an overpack.
Placard Check	If the gross mass of all dangerous goods is more than 500 kg, make sure that the placards shown in the "Placard Table" are on all four sides of the transport unit before loading.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded. <p>If the load is being transported under an exemption:</p> <ul style="list-style-type: none"> • check that the terms of the exemption apply • take whatever shipping documentation the exemption says is needed <p>If the load is being transported using a shipping document, sign all copies and return the Consignor (Shipper) copy to the shipper.</p> <p>Note: The carrier is not allowed to take passengers if the mass of batteries or battery fluids per package is more than the quantity limit.</p>
Loading Check	Check that the materials loaded match what is given on the shipping documentation.

Load Safe and Secure	Check that: <ul style="list-style-type: none"> • batteries and containers are upright and protected from freezing if this is possible – see freezing points • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
Documentation	If the load is being transported under an exemption, take: <ul style="list-style-type: none"> • a copy of the bill of lading for the shipment, and • any other shipping documentation the exemption says is needed Otherwise, take a shipping document.

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	Keep a copy of the shipping documentation in the place specified by the TDG Regulations. See Document Locations if necessary.				
Placards	Replace any lost or damaged placards, if placards are needed. See the “Placard” Table if necessary.				
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.				
Spill Responses	Follow guidelines on the Spill Response Card in case of a spill.				
Spill Reporting – Verbal, Internal	Report any spill involving batteries or battery fluids in transit. <p>BC Hydro Employees Report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors Report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern. <table border="1" data-bbox="630 1822 1382 1873"> <tr> <td data-bbox="630 1822 824 1873"> Edie Thome </td> <td data-bbox="824 1822 1084 1873"> Tel. 604.528.3419 </td> <td data-bbox="1084 1822 1382 1873"> Cel. 778.828.6231 </td> </tr> </table>		Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231			

	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Spill Reporting – Verbal, External	<p>Spill to Water (Any Quantity), or Spill to Land (More than 5 L or 5 kg): (Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is more than the 5 L or 5 kg, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 5 L or 5 kg:</p> <p>For spills less than 5 L or 5 kg to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>		
Spill Reporting	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>		

Carrying: Delivery

The carrier is responsible for the following:

Receiver Signature	If a shipping document was used, have the receiver sign it when accepting the shipment.
Copies	If a shipping document was used, keep it on file for at least two years.
Removal of Placards	If placards had to be used, remove or cover them after unloading unless cleaning is needed to remove leaked or spilt dangerous goods. If cleaning is needed, remove any placards after cleaning.

Receiving

The receiver is responsible for the following:

Safety	Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.
TDG Training	Have, or work under the supervision and in the presence of someone who has: <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training
Precautions	If handling wet batteries or battery fluids, have an Aggressive Liquids Spill Kit available. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose. Do not try to neutralize the spill – this could result in a violent reaction. Note: Waste sorbents from clean-up of battery fluid spills are hazardous waste and must be handled properly – see Waste Rags and Sorbents: WM-460. Make sure that drains or watercourses to which spilled battery fluids might leak are protected (e.g., use a drain cover).
Shipment Check	Make sure that: <ul style="list-style-type: none"> • what is received agrees with what is on the shipping documentation • there are no signs of leakage from the batteries or containers If what is on the shipping documentation does not agree with what is received, report to the person who ordered the batteries and to the supplier. If leaks are found: <ul style="list-style-type: none"> • contain the leaking battery or container • see “Spill Response” to clean up any leakage

Acceptance	Accept the shipment based on the above checks. If a shipping document was used for the shipment, sign and return it to the carrier.
Unloading Equipment and Methods	Use equipment and methods designed to handle and unload the materials safely – see Loading and Unloading of Trucks .

Transporting Waste Batteries or Battery Fluids

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Shipping: Planning

The shipper is responsible for the following:

Battery Types	Find out what type of batteries (wet or dry, acid or alkaline) or battery fluids are being transported. See “Battery Types” for more details if necessary.
TDG Training	Have, or work under the supervision and in the presence of someone who has: <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid <i>TDG Certificate of Training</i> When arranging transport, specify that the carrier must have: <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid <i>TDG Certificate of Training</i>
Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.
Registration of Shipping and Receiving Sites	The shipping and receiving sites do not have to be registered if the amount of: <ul style="list-style-type: none"> • waste batteries is less than 2,000 kg and/or • waste battery fluid not in a battery is less than 100 L In this case, see “References – Hazardous Waste Transport Licence.” The shipping and receiving sites must be registered if the amount of: <ul style="list-style-type: none"> • waste batteries is more than 2,000 kg and/or • waste battery fluid not in a battery is more than 100 L In this case, see the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that: <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • batteries or battery fluid are registered according to the type of waste • the amount registered is more than the amount of waste

	<p>being shipped</p> <p>If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number.</p> <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Hazardous Waste Transport Licence	<p>Before arranging road transport, check if the carrier will need a Hazardous Waste Transport Licence. See “References – Hazardous Waste Transport License Requirements.”</p> <p>If a Hazardous Waste Transport Licence is needed, check at the time of arranging transport that the carrier has a valid license that allows for carrying of batteries or corrosive or class 8 wastes.</p>
Precautions	<p>If handling wet batteries or battery fluids, have an Aggressive Liquids Spill Kit available. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose.</p>

Shipping: Preparing

The shipper is responsible for the following:

Safety	<p>Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.</p>
Precautions	<p>If handling wet batteries or battery fluids, have an Aggressive Liquids Spill Kit available. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose. Do not try to neutralize the spill – this could result in a violent reaction.</p> <p>Note: Waste sorbents from clean-up of battery fluid spills are hazardous waste and must be handled properly – see Waste Rags and Sorbents: WM-460.</p> <p>Make sure that drains or watercourses to which spilled battery fluids might leak are protected (e.g., use a drain cover).</p>
Condition and Leak Check	<p>Check that casings or containers are in good condition and suitable for transport.</p> <p>For all batteries this means that terminals are protected to prevent short circuits.</p> <p>In addition, for wet batteries or battery fluids this means that:</p> <ul style="list-style-type: none"> • cell or container caps are fully closed • casings or containers are not cracked, bulging, or leaking • containers of battery fluid are marked with a packaging code as shown in the section below on packaging, unless an exemption allows something else <p>If batteries or containers are found that are not suitable for transport:</p> <ul style="list-style-type: none"> • put the batteries or containers in an overpack

	<ul style="list-style-type: none"> • see “Spill Response” for clean-up of any leakage
<p>Packaging</p>	<p>Package separately batteries and battery fluids with different shipping names and UN numbers (see “TDG Information Table”).</p> <p>Note: Different types of batteries and battery fluids are packaged separately to avoid hazardous reactions in case of a leak, and to allow proper TDG labeling.</p> <p>For all batteries make sure that:</p> <ul style="list-style-type: none"> • batteries are secured or packaged to prevent movement • anything stacked on top of the batteries will not be supported by the terminals (including upper layers of batteries where batteries are packed in layers) • layers of batteries are separated by a sheet of non-conductive material <p>In addition, for wet batteries or battery fluids, package:</p> <ul style="list-style-type: none"> • to keep batteries or containers upright • to prevent leaks or spills during expected conditions of transport • to prevent freezing if necessary – see Definitions: Freezing Points • in containers marked with a packaging code like that at the right, unless an exemption allows something else  <p>Note: BC Hydro has a Wet Battery Permit that allows transport of wet batteries in packaging that is not marked with a packaging code – see Wet Batteries for a summary of exemption conditions. If shipping wet batteries on pallets, see “Packing Waste Batteries on Pallets”.</p> <p>In addition, for waste dry cells, make sure that packages or containers are not tightly sealed (to prevent build-up of hydrogen, which can be given off slowly by these cells).</p>
<p>Labels</p>	<p>Make sure all packages or containers have TDG markings and labels unless an exemption allows something else.</p> <p>For:</p> <ul style="list-style-type: none"> • wet batteries being transported under BC Hydro's Wet Battery Permit, see “Marking Instructions for Packages of Wet Batteries” • all other cases, see the Marking Instructions and the “TDG Information Table” <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>

Shipping: Paperwork

The shipper is responsible for the following:

Type of Documentation	<p>Unless an exemption allows something else, use a shipping document to transport:</p> <ul style="list-style-type: none"> less than 1,000 kg of batteries only within BC, or less than 5 kg or L of battery fluids not in a battery <p>Otherwise, use a movement document/manifest.</p> <p>See below as applicable:</p> <ul style="list-style-type: none"> Transporting Using a Shipping Document Transporting Using a Movement Document/Manifest <p>Note: If shipping to a non-BC Hydro location without a movement document/manifest, check that the receiving company will accept the shipment. Some companies will not accept shipments without a movement document/manifest even if something else is allowed.</p>
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Transporting Using a Shipping Document

Shipping Document	<p>When completing a shipping document, see if needed:</p> <ul style="list-style-type: none"> the "TDG Information Table" for shipping name, UN number, class, and packing group the "Placard Table" for placards How to Complete a Shipping Document <p>Note: If wet batteries are transported under BC Hydro's Wet Battery Permit, write: "Dangerous Goods Permit No. SU 6441 – by road or railway vehicle or by ship (and permit expiry date) on the shipping document.</p>
Special Wording for Less than 1,000 kg of Waste Batteries	<p>When using a shipping document for shipments of waste batteries less than 1,000 kg within BC, enter the following wording in the "Special Instructions" box of the shipping document:</p> <p>Shipments of recyclable waste batteries less than 1,000 kg solely within BC are exempt from manifesting requirements under Section 46 of the BC <i>Hazardous Waste Regulation</i>.</p>
Carrier Signature	<p>Have the carrier sign all copies of the shipping document when accepting the shipment.</p>
Copies	<p>Do the following with copies of the shipping document:</p> <ul style="list-style-type: none"> Consignor (Shipper) copy – retain on file for at least 2 years Carrier copy – give to the carrier If the waste is being disposed without being shipped through Materials Management Business Unit (MMBU), photocopy the completed shipping document and send the copy to: <p>MMBU Environmental Technical Specialist 12345 - 88th Avenue, Surrey, BC V3W 5Z9</p>

Inventory Update	<p>Update the waste inventory records to show the waste materials shipped. Include the date the waste was shipped and the shipping document serial number.</p> <p>Download and use the Hazardous Waste Inventory Form  if necessary. For a guide to filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p>
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Transporting Using a Movement Document/Manifest

Consignor (Shipper) Information	<p>Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if needed.</p> <p>Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable.</p> <p>Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID.</p> <p>If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site.</p> <p>See "TDG Information Table" for shipping name, UN number, class, and packing group if needed.</p> <p>Make sure that emergency contact numbers are filled in.</p> <p>Note: If wet batteries are transported under BC Hydro's Wet Battery Permit, write: "Dangerous Goods Permit No. SU 6441 – by road or railway vehicle or by ship (and permit expiry date) on the shipping document.</p> <p>Note: When a container for battery fluid has been emptied so it is less than 10 percent full, write "Residue – Last Contained" followed by the shipping name to show the amount in the container.</p>
Carrier Information and Signature	<p>Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.</p>
Copies	<p>Do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment

	<ul style="list-style-type: none"> • Copies 3 to 6 – give to the carrier • if the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the movement document/manifest. • if the waste is being disposed of without being shipped through Salvage Warehouse M, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
Inventory Update	<p>Update the waste inventory records to show that the waste has been shipped. Include the date the waste was shipped and the movement document/manifest number.</p> <p>Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p>

Shipping: Loading

The shipper is responsible for the following

Safety	Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.
Precautions	<p>If handling wet batteries or battery fluids, have an Aggressive Liquids Spill Kit available. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose. Do not try to neutralize the spill – this could result in a violent reaction.</p> <p>Note: Waste sorbents from clean-up of battery fluid spills are hazardous waste and must be handled properly – see Waste Rags and Sorbents: WM-460 Make sure that drains or watercourses to which spilled battery fluids might leak are protected (e.g., use a drain cover).</p> <p>If loading wet batteries or battery fluids, check that the carrier has an Aggressive Liquids Spill Kit and a copy of the Spill Response Card on the truck.</p>
TDG Training	Make sure the carrier's <i>TDG Certificate of Training</i> has not expired.
Hazardous Waste Transport Licence Check	Check the carrier's Hazardous Waste Transport Licence unless one is not needed. See the "Hazardous Waste Transport Licence Requirements." Make sure that: <ul style="list-style-type: none"> • the carrier's vehicle description and registration number

	match one of those shown on the licence <ul style="list-style-type: none"> the licence allows for carrying of batteries or corrosive or class 8 wastes (and any other waste types, if more than one waste type is being shipped) the licence has not expired
Placards	If the gross mass of dangerous goods is more than 500 kg, make sure that the placards shown in the “Placard Table” are on all four sides of the transport unit before loading. The shipper must offer to provide the placards if they are needed.
Loading Equipment and Methods	Use equipment and methods designed to handle and load the containers or equipment safely – see Loading and Unloading of Trucks.
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the materials loaded match what is given on the shipping documentation.
Load Safe and Secure	Make sure that: <ul style="list-style-type: none"> the carrier's vehicle can safely transport the load (including protection from freezing – see freezing points) containers are upright the load will not shift during transport: <ul style="list-style-type: none"> in a trailer, the load is strapped or tied to both walls and floor on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides in a pickup, the load is strapped to the sides of the box no sharp edges might damage or puncture the load no other items being carried could shift and damage or puncture the load
Documentation	Make sure the carrier takes the shipping documentation with the load.

Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.
Precautions	If carrying wet batteries or battery fluids, have an Aggressive Liquids Spill Kit and a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose.

TDG Training	Have: <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid <i>TDG Certificate of Training</i>
Hazardous Waste Transport Licence	Have a valid Hazardous Waste Transport Licence that allows carrying of battery or corrosive or class 8 wastes, unless one is not needed. See “Hazardous Waste Transport Licence Requirements.”
Label Check	Unless an exemption allows something else, check that: <ul style="list-style-type: none"> • each outer package or container has a TDG hazard label, shipping name, and UN number • the markings and labels on the packages or containers match what is on the shipping documentation, and • the outer packaging is marked with a packaging code like that at the right  <p>Note: BC Hydro has a Wet Battery Permit that allows transport of wet batteries in packaging that is not marked with a packaging code. In this case, check that the shipping document has on it the words: "Dangerous Goods Permit No. SU 6441 – by road or railway vehicle or by ship (and permit expiry date)." </p>
Packaging and Leak Check	Check that the outer packaging for batteries or containers of battery fluids is in good condition and suitable for transport. This means that: <ul style="list-style-type: none"> • packaged materials are not leaking • outer containers are closed • any packaging (e.g., boxes or strapping) is not damaged Do not accept materials unsuitable for transport unless fully contained in an overpack
Placards	If the gross mass of all dangerous goods is more than 500 kg, make sure that the placards shown in the “Placard Table” are on all four sides of the transport unit before loading. The shipper must offer to provide the placards if they are needed.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded. If the load is being transported under an exemption: <ul style="list-style-type: none"> • check that the terms of the exemption apply • take whatever shipping documentation the exemption says is needed If the load is being transported using a shipping document, sign all copies and return the Consignor (Shipper) copy to the shipper. If the load is being transported using a movement document/manifest:

	<ul style="list-style-type: none"> complete Part B and sign all copies – see How to Complete Part B of a Movement Document/Manifest if needed return Copies 1 and 2 to the shipper take Copies 3 to 6 with the load <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p> <p>Note: The carrier is not allowed to take passengers if the mass of batteries or battery fluids per package is more than the quantity limit.</p>
Loading Check	Check that the materials loaded match what is given on the shipping documentation.
Load Safe and Secure	<p>Make sure that:</p> <ul style="list-style-type: none"> batteries and containers are upright and protected from freezing if this is possible – see freezing points the load will not shift during transport: <ul style="list-style-type: none"> in a trailer, the load is strapped or tied to both walls and floor on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides in a pickup, the load is strapped to the sides of the box no sharp edges might damage or puncture the load no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Location of the Documents	<p>Keep a copy of the shipping documentation in the place specified by the TDG Regulations. See Document Locations if necessary.</p> <p>If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. See “Hazardous Waste Transport Licence Requirements” if necessary.</p>
Placards	Replace any lost or damaged placards, if placards are needed. See “Placard Table” if necessary.
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.

<p>Spill Reporting – Verbal, Internal</p>	<p>Report any spill involving batteries or battery fluids in transit.</p> <p>BC Hydro Employees Report to:</p> <ul style="list-style-type: none"> work leader or manager, and owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors Report to:</p> <ul style="list-style-type: none"> BC Hydro person arranging the transport employer, and owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="634 730 1377 835"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 5 L or 5 kg): (Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> name and phone number of the person providing notification of the spill name and phone number of the spiller location, time, and date of the spill material spilled and quantity cause and effect of the spill action taken or proposed action to contain the spill duration of the spill weather conditions planned follow-up government agencies on the scene persons or agencies advised <p>In addition, if the spill is more than 5 L or 5 kg, also notify:</p> <ul style="list-style-type: none"> local police CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and 						

	<ul style="list-style-type: none"> owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 5 L or 5 kg:</p> <p>For spills less than 5 L or 5 kg to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
Spill Reporting – EIR	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	<p>If the load was transported using a shipping document, have the receiver sign it.</p> <p>If the load was transported using a movement document/manifest:</p> <ul style="list-style-type: none"> have the receiver complete Part C – see How to Complete Part C of a Movement Document/Manifest if needed sign Copies 3 to 6
Copies	<p>If the load was transported using a shipping document, keep it on file for at least two years.</p> <p>If the load was transported using a movement document/manifest:</p> <ul style="list-style-type: none"> keep Copy 4 on file for at least two years give Copies 3, 5, and 6 to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
Removal of Placards	<p>If placards had to be used, remove or cover them after unloading unless cleaning is needed to remove leaked or spilt dangerous goods.</p> <p>If cleaning is needed, remove any placards after cleaning.</p>

Receiving

The receiver is responsible for the following:

Documentation from Carrier	<p>Get the shipping documentation from the carrier.</p> <p>Contact Environmental Risk Management so that the appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one (more than 1,000 kg of batteries or more than 5 kg or L of battery fluids not in a battery).</p>
TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training
Authorization for Receiving Hazardous Waste	<p>The receiving site does not have to be registered if the amount of:</p> <ul style="list-style-type: none"> • waste batteries is less than 2,000 kg and/or • waste battery fluid not in a battery is less than 100 L <p>In this case, see the next section on “Receiving Check.”</p> <p>The receiving site must be registered if the amount of:</p> <ul style="list-style-type: none"> • waste batteries is more than 2,000 kg and/or • waste battery fluid not in a battery is more than 100 L <p>In this case, see the BC Hydro Hazardous Waste Generator Registration Summary and confirm that:</p> <ul style="list-style-type: none"> • the receiving site is on the list • batteries or battery fluid are registered according to the type of battery waste • the amount registered is more than the amount of waste being received <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Receiving Check	<p>If what is on the shipping documentation does not agree with what is received, report to your supervisor.</p> <p>Note: For a shipment requiring a movement document/manifest, contact Environmental Risk Management so that the appropriate authorities can be notified if the shipment:</p> <ul style="list-style-type: none"> • does not match the description on the movement document/manifest, or • is not within five percent of the amount shown on the movement document/manifest, when the shipment is more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.
Precautions	<p>If handling wet batteries or battery fluids, have an Aggressive Liquids Spill Kit available. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose. Do not try to neutralize the spill – this could result in a violent reaction.</p> <p>Note: Waste sorbents from clean-up of battery fluid spills are hazardous waste and must be handled properly – see Waste Rags and Sorbents: WM-460.</p> <p>Make sure that drains or watercourses to which spilled battery fluids might leak are protected (e.g., use a drain cover).</p>
Leak Check	<p>Make sure there are no signs of leakage from the batteries or containers. If leaks are found:</p> <ul style="list-style-type: none"> • contain the leaking battery or container • see “Spill Response” to clean up any leakage
Unloading Equipment and Methods	Use equipment and methods designed to handle and unload the materials safely – see Loading and Unloading of Trucks.

Receiving: Completion of Paperwork

The receiver is responsible for the following:

Completion of Movement Document/ Manifest Part C	<p>If the load was transported using a shipping document, sign it and return to the carrier.</p> <p>If the load was transported using a movement document/manifest:</p> <ul style="list-style-type: none"> • complete Part C – see How to Complete Part C of a Movement Document/Manifest if needed • enter BCG00122 as the Receiver/Consignee Registration No/Provincial ID • sign Copies 3 to 6
Copies	<p>If the load was transported using a movement document/manifest:</p> <ul style="list-style-type: none"> • mail Copy 3 within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 • return Copy 4 to the carrier • keep Copy 5 on file for at least two years • mail Copy 6 to the consignor

Inventory Update	<p>Update waste inventory records to show the amount of waste received. Include the date the waste was received and the movement document/manifest number if one was used.</p> <p>Download and use the Hazardous Waste Inventory Form if needed. For help in filling out this form, see "Hazardous Waste Inventory Form: Completed Example".</p>
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Transporting Drained Batteries or Containers

Transport drained batteries or containers using the same precautions as full ones unless they have been proven to be truly empty. This is because drained batteries or containers typically contain residual battery fluid when emptied. If these batteries or containers are not properly closed, or become damaged, there is a significant risk of leakage or spillage during transport.

See as applicable:

- Transporting New Batteries or Battery Fluids
- Transporting Waste Batteries or Battery Fluids

Storing New Batteries or Battery Fluids

Safety	Handle batteries and battery fluids as per the applicable occupational health and safety standards for your Business Group, Business Unit, or client.
Precautions	Have an Aggressive Liquids Spill Kit available in case leak/spill response is required. Do not use oil spill kits on battery fluid spills—they are not effective for this purpose.
Inventory	Store the minimum batteries needed to meet use and inventory requirements (because of the limited shelf life).
Casings and Containers	<p>Make sure that battery casings and containers for battery fluids are:</p> <ul style="list-style-type: none"> • compatible with the fluids (contact the supplier if unsure about compatible materials) • in good condition • closed during storage • handled, stored, or transported so as not to cause leaks or ruptures
Containment	Do not store batteries or battery fluids near floor drains. If this cannot be avoided, block or seal floor drains until the batteries or battery fluids can be moved.
Weather Protection	<p>Protect batteries or battery fluids from:</p> <ul style="list-style-type: none"> • extreme heat (keep below 55°C [130°F] at all times, and preferably below 45°C [110°F]) • freezing if this is a possibility (see freezing points) • wet weather and humid conditions <p>If roofed storage is not possible, keep the batteries or battery fluids in their original shrink-wrap or cover with a UV-resistant</p>

	nylon or polypropylene tarp. If tarps are used, make sure they extend over any containment trays to stop them filling with water.
Storage Arrangements	<p>Make sure that batteries or containers of battery fluids are stored:</p> <ul style="list-style-type: none"> • away from traffic in a designated, ventilated area that has fire protection and is free of ignition sources • with acid and alkaline batteries or battery fluids separated, and separate from oils, solvents, fuels, or any other TDG materials that are not class 8 • in storage areas identified with signs: • on racking, shelving, or pallets that are designed for the weight of the stored materials • upright, unless the batteries are dry or non-spillable • with batteries protected from short-circuits • with space for easy leak inspection (for example, off the floor on pallets with aisle space between the pallets)
Labels	<p>Make sure each container or package is marked with:</p> <ul style="list-style-type: none"> • a description of the contents • a TDG hazard label as shown in the “TDG Information Table”, and • for containers of battery fluid, a WHMIS label
Restricted Access	Restrict site access during non-working hours.
Inspections	<p>Inspect the storage facility monthly or as per the site or station maintenance plan. When inspecting, include:</p> <ul style="list-style-type: none"> • checking pallets for damage • checking batteries or containers of battery fluids for leaks or damage – if problems are found: <ul style="list-style-type: none"> – use an overpack drum to contain any leaking battery or container – see “Spill Response” to clean up any leakage • removal of any incompatible materials in the storage area (for example, oils, fuels, or solvents, etc.) <p>Keep a record of the inspection and report any findings.</p>

Storing Waste Batteries or Battery Fluids

Physical Requirements

Safety	Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.
Precautions	Have an Aggressive Liquids Spill Kit available in case leak/spill response is required. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose.

Casing and Containers	<p>Make sure that battery casings and containers for battery fluids are:</p> <ul style="list-style-type: none"> • compatible with the fluids (contact the supplier if unsure about compatible materials) • in good condition • closed during storage • handled, stored, or transported so as not to cause leaks or ruptures
Containment	<p>Store batteries and battery fluids in containment trays, curbed rooms, or transportable storage containers (TSCs) with non-absorbent and corrosion-resistant spill trays.</p> <p>Do not store batteries or battery fluids near floor drains. If this cannot be avoided, block or seal floor drains until the batteries or battery fluids can be moved.</p>
Weather Protection	<p>Protect batteries or battery fluids from:</p> <ul style="list-style-type: none"> • extreme heat (keep below 55°C [130°F] at all times and preferably below 45°C [110°F]) • freezing if this is a possibility (see freezing points) • wet weather and humid conditions <p>If roofed storage is not possible, cover batteries or battery fluids with a UV-resistant nylon or polypropylene tarp. Make sure the tarp extends over any containment trays to stop them filling with water.</p>
Storage Arrangements	<p>Make sure that batteries or containers of battery fluids are stored:</p> <ul style="list-style-type: none"> • away from traffic in a designated, ventilated area that has fire protection and is free of ignition sources • with acid and alkaline batteries or battery fluids separated, and separate from oils, solvents, fuels, or any other TDG materials that are not class 8 • in storage areas identified with signs • on racking, shelving, or pallets that are designed for the weight of the stored materials • upright, unless the batteries are dry or non-spillable • with batteries protected from short-circuits • with space for easy leak inspection (for example, off the floor on pallets with aisle space between the pallets)
Labels	<p>Make sure each container or package is marked with:</p> <ul style="list-style-type: none"> • a description of the contents • a TDG hazard label as shown in the “TDG Information Table”, and • for containers of battery fluid, a WHMIS label
Restricted Access	<p>Restrict site access during non-working hours.</p>

Administrative Requirements

Minimize Waste Storage	<p>Dispose of or recycle waste batteries or battery fluids regularly to keep the amount stored less than:</p> <ul style="list-style-type: none"> • 2,000 kg waste batteries • 100 L waste battery fluids <p>Note: If the amount of stored waste batteries or battery fluids cannot be kept less than those indicated above, many additional requirements of the <i>Hazardous Waste Regulation</i> apply. Contact the MMBU Environmental Technical Specialist for help in finding out what is needed.</p>
Storage Record	<p>Keep a record of stored waste batteries and battery fluids on site at all times. Record as applicable for each pallet or container:</p> <ul style="list-style-type: none"> • the identification number • when it was received or stored • a description of the contents, including shipping name and UN number • the amount of waste, in kilograms or litres • when it is removed from storage or shipped from site • where it is on site • the movement document/manifest number when received or shipped • the number of the certificate of processing or destruction when the wastes are treated or destroyed <p>Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p> <p>Keep the storage records on site for at least two years after the waste is removed from the site.</p>
Inspections	<p>When inspecting, include:</p> <ul style="list-style-type: none"> • checking pallets for damage • checking batteries or containers of battery fluids for leaks or damage – if problems are found: <ul style="list-style-type: none"> – use an overpack drum to contain any leaking battery or container – see “Spill Response” to clean up any leakage • checking that the containment is in good condition • removal of any incompatible materials in the storage area (for example, oils, fuels, or solvents, etc.) <p>Keep a record of the inspection and report any findings.</p>

Use/Handling

Safety	Handle batteries and battery fluids as per the applicable occupational health and safety standards for your business group, business unit, or client.
Containment	Block or seal any floor drains near the location where batteries are used. Keep containment areas for batteries or battery fluids free of non-compatible materials (for example, oils, fuels, or solvents).
Climate Protection	Shelter batteries from extreme temperatures (heaters, freezing), wet weather, and humid conditions. See freezing points.
Precautions	Have an Aggressive Liquids Spill Kit available in case leak/spill response is required. Do not use oil spill kits on battery fluid spills – they are not effective for this purpose.
Use and Maintenance	Use and maintain batteries according to BC Hydro standards. Handle to avoid damage or spills of battery fluids. Identify usage areas with signs.
Inspections	Ensure that inspection checklists include: <ul style="list-style-type: none"> • check for leaks or damage • check for incompatible materials in the usage area (for example, oils, fuels, or solvents)
Removal from Service	Batteries removed from service for recycling or disposal are hazardous waste and subject to numerous regulatory requirements. See “Recycling/Disposal”.

Spill Response for Acids or Alkalis (Caustics)

The following steps are presented as general guidelines for responding to spills of aggressive water-based acids or alkalis (caustics) such as battery fluid. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact Environmental Risk Management.

Ensure Safety	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response – see OSH Standard 301: WHMIS and Hazardous Materials and OSH Standard 302: Safety During Spill Response.</p> <p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE) such as that contained in an aggressive liquids spill kit . Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> • go to the Material Safety Data Sheet database, or <p>for dangerous goods in transport, contact ICC The Compliance</p>
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	Center at 604-986-4617 (24 hours)						
Stop the Flow	Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.						
Secure the Area	<p>Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources (reactions can generate flammable gases).</p> <p>Inform the owner(s) and/or occupant(s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>						
Contain the Spill	<p>Protect drains, sewers, culverts, waterways, and ditches, as appropriate.</p> <p>Contain the spilled product with sorbents, pads, or socks such as those contained in an aggressive liquids spill kit . Do not use oil spill kits on water-based acid or alkali spills—they are not effective for this purpose. If an Aggressive Liquids Spill Kit is not available or greater containment is required, use earth and/or sod.</p> <p>Identify all potential sources and the extent of the spilled material. Monitor containment measures.</p> <p>Warning! Do not try to neutralize spilled materials – this can cause hazardous reactions.</p>						
Notify/Report	<p>Internal: For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="634 1215 1382 1320"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table> <p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than Reportable Quantity): (Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and 	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

	<ul style="list-style-type: none"> • local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the reportable quantity, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
<p>Clean Up</p>	<p>Warning! Do not try to neutralize spilled materials – this can cause hazardous reactions.</p> <p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes (for example, HDPE or PVC for many acids or alkalis) • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, soil and battery acid mixture from spill clean-up) • shipping name and UN number, if the wastes are

	<p>dangerous goods</p> <ul style="list-style-type: none"> • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act and Regulations</i> if the wastes are dangerous goods <p><i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste</p>
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Recycling and Disposal

Disposal	<p>If possible, recycle or dispose of batteries through the supplier.</p> <p>If batteries cannot be returned to the supplier, arrange disposal through the MMBU Environmental Technical Specialist.</p> <p>Do not dispose of batteries to landfill, except for less than 5 kg of dry cells where it is not practical to ship them to Salvage Warehouse M.</p> <p>Do not dispose of battery fluids to drain or sewer.</p>
Storage Before Recycling or Disposal	See “Storing Waste Batteries and Battery Fluids”.
Shipping for Recycling or Disposal	See “Transporting Waste Batteries and Battery Fluids”.

Glossary - Definitions

Class 8: A corrosive substance as defined by the *Transport of Dangerous Goods Regulations*.



Placard and label for Class 8:

Freezing Points: Freezing points for acid batteries, acid gel cells, and battery fluids are:

- about -50°C when new and fully charged
- -15°C to 0°C when waste, depending on how charged they are

Freezing points for alkali batteries (caustic potash, nickel-cadmium, alkali gel cells) and battery fluids are:

- about -30°C when new and fully charged
- about -20°C when waste and discharged

Gross Mass: As applied to dangerous goods, means the total mass of dangerous goods including containers.

In Bulk: As it relates to transport of dangerous goods or hazardous waste, means transport where:

- the container is more than 450 L, and
- liquids or gases are in direct contact with the container

For example, transport of flammable paint in a 1.2 m³ [317 USgal] tote container is in bulk.

Transport of flammable paint in 20 L [5 USgal] pails in a 1.2 m³ skid tub is not in bulk.

Land Where There Is Potential for The Spill to Reach Water: land from which a spill could enter water or fish habitat, where:

- water means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada, and
- fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34]
- Fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.
- As a guideline, fish habitat includes the area extending 15 metres inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

Manufactured article: any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, under normal conditions of use, will not release or otherwise cause a person to be exposed to a controlled product [from the *Hazardous Products Act*, section 11(1)].

New: As applied to batteries or battery fluids, means:

- unused batteries or battery fluids, or
- defective unused batteries or battery fluids that are being returned directly to a supplier or manufacturer

Passenger: a person carried on a road or rail vehicle, **other than:**

- a crew member
- a person who is accompanying dangerous goods or other cargo
- an operator, owner or charterer of the vehicle
- an employee of the operator, owner, or charterer of the vehicle, who is acting in the course of employment
- a person carrying out inspection or investigation duties under an Act of Parliament or of a provincial legislature

Note: Edited definition from section 1.4 of the *Transport of Dangerous Goods Regulations*

Quantity Limits for Batteries and Battery Fluids: The quantity limits for transport of batteries or battery fluids in a road or rail passenger vehicle are shown below.

Battery or Battery Fluid Type	Quantity Limit
Wet batteries, acid or alkaline	30 kg per package
Dry batteries, other than lithium batteries	25 kg per package
Battery fluids, acid or alkaline	1 L per package
Lithium batteries other than small lithium batteries	5 kg per package
Small lithium batteries	No limit
Non-spillable batteries	No limit

Shipping Documentation: whatever documents must go with a shipment.

Depending what and how much is being shipped, these documents could be one or more of the following:

- a bill of lading
- a full dangerous goods shipping document
- a document with information required by an exemption from TDG requirements
- a movement document/manifest
- a Permit for Equivalent Level of Safety

Small Lithium Battery: a lithium battery that is not regulated by the *TDG Act and Regulations* when transported.

Examples of small non-TDG regulated lithium batteries are:

- Saft, 3.6 volt, model LS 14250
- Renata, 3.0 volt, model CR2477N
- Panasonic, 3.0 volt, model BR-2/3A

For other lithium batteries, refer to data sheets to find out if they are TDG regulated or not.

TDG Regulated: regulated by the *TDG Act and Regulations* when transported. When new or waste, all batteries except some dry cells and all battery fluids are dangerous goods. Batteries and battery fluids that are dangerous goods are regulated in transport unless an [exemption](#) allows something else.

New carbon zinc dry cells and new or waste small lithium batteries may not be regulated as dangerous goods.

UN Number: Previously known as product identification number (PIN).

Water: all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada. [*Fisheries Act* section 2, definition of Canadian Fisheries Waters] and includes fish habitat.

- Fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34]
- Fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.
- As a guideline, fish habitat includes the area extending 15 metres inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

References

Marking Instructions for Batteries or Battery Fluids

(Other than wet batteries carried under BC Hydro's Wet Battery Permit)

Unless an exemption allows something else, all packages or containers of batteries or battery fluids less than 450 L must have:

- TDG markings and labels
- UN packaging codes

In addition, containers of battery fluids must have:

- WHMIS labels

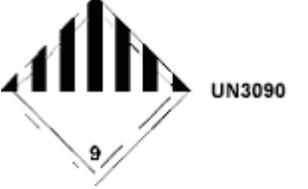
These marking requirements also apply to drained batteries or empty containers that have not been cleaned.

TDG Markings and Labels

The TDG markings and labels are:

- the shipping name
- the UN number
- a hazard label on the side (not the bottom or the top)

Get the shipping name and UN number from the TDG Information Table or from the battery or battery fluid data sheet.

Note: The UN number must be shown with the hazard label in one of the ways below:		
Battery or Battery Fluid Type	UN Number in a White Box on the Label	UN Number Next to the Label
Batteries or battery fluids other than lithium batteries	 <p>Replace XXXX with the number (no UN before the number)</p>	 <p>Replace XXXX with the number (UN before the number)</p>
Lithium batteries other than small lithium batteries	 <p>(no UN before the number)</p>	 <p>(UN before the number)</p>
Small lithium batteries	Not TDG regulated—no label or UN number needed	

The shipper must make sure that the markings and labels are on the packages or containers before loading begins.

The carrier must maintain the markings and labels during transport.

UN Packaging Codes

Packages or containers must have a packaging code like that at the right, unless an exemption allows something else.



WHMIS Labels

(For containers of battery fluid only)

If needed, get WHMIS workplace labels from the MSDS database. For containers of waste battery fluid, write "Waste" before the fluid name on the label.

If the containers were used before for something else, remove or erase any labels that no longer apply.

Marking Instructions for Packages of Wet Batteries Transported Under BC Hydro's Wet Battery Permit

All packages or containers for transporting wet batteries under the Wet Battery Permit must have TDG markings. The table below shows what markings are needed:

Package Type	Package Size	TDG Markings
Rigid boxes	Any size	Hazard Label, UN Number, and Shipping Name on one side (not the top or bottom) of the rigid box
Pallets or crates	Less than 450 L [15 ft ³]	Hazard Label, UN Number, and Shipping Name on one side (not the top or bottom) of the pallet or crate
	More than 450 L [15 ft ³]	Hazard Label, UN Number, and Shipping Name on four sides (not the top or bottom) of the pallet or crate or Placard and UN Number on two opposite sides (not the top or bottom) of the pallet or crate

Note: Drained batteries or empty containers that have not been cleaned must be marked also.

Hazard Label, UN Number, and Shipping Name

The UN number can be shown with the hazard label in one of the ways below. The shipping name must be next to the label.

Battery Type	UN Number in a White Box on the Label (no UN before the number)	UN Number Next to the Label (UN before the number)
Wet acid batteries	 Batteries, wet, filled with acid	 UN2794 Batteries, wet, filled with acid
Wet alkali batteries	 Batteries, wet, filled with alkali	 UN2795 Batteries, wet, filled with alkali

The shipper must make sure that the markings are on the packages or containers.

The carrier must maintain the markings during transport.

If the packaging was used before for something else, remove or erase any labels that no longer apply.

Placard and UN Number

The UN number can be shown with the placard in one of the ways below.

Battery Type	UN Number in a White Box on the Placard (no UN before the number)	UN Number on an Orange Panel Next to the Placard (UN before the number)
Wet acid batteries	 Batteries, wet, filled with acid	 UN2794 Batteries, wet, filled with acid
Wet alkali batteries	 Batteries, wet, filled with alkali	 UN2795 Batteries, wet, filled with alkali

The shipper must make sure that the placards are on the packages or containers.

The carrier must maintain the placards during transport.

Placards for Batteries or Battery Fluids

Unless an exemption allows something else, shipments of TDG regulated dangerous goods must have placards if:

- the gross mass of all dangerous goods is more than 500 kg, or
- any amount of liquid dangerous goods is transported in bulk

If placards are needed:

- the shipper must offer to provide the placards, and
- the placards must be on all four sides of a transport unit before loading

Note: When transport is by truck, the front placard can be put on the front of the truck. If the transport unit has a permanent frame, the placards can be attached to the frame.

The carrier must maintain the placards until after the goods have been unloaded, unless cleaning is needed to remove spilt or leaked dangerous goods. If cleaning is needed, remove the placards after cleaning.

Types of Dangerous Goods	Placard	UN Number
<p>Battery wastes all having the same UN number and no other TDG regulated dangerous goods</p> <p>(For example, acid batteries alone or battery fluid alone)</p>		<p>†Show UN number if: there is more than 4,000 kg, or the fluid is transported in bulk</p>
<p>Battery wastes not all having the same UN number and other TDG regulated Class 8 dangerous goods</p> <p>(For example, wet batteries of different types or wet batteries and battery fluid)</p>	 <p>(A Danger placard could be used instead of the Class 8 placard in this case)</p>	<p>No UN number</p>
<p>Battery wastes and other TDG regulated dangerous goods in a different class</p> <p>(For example, wet batteries and flammable paint)</p>	 <p>Exceptions when Danger placards cannot be used</p>	<p>No UN number</p>

<p>†The UN number can be shown either within a white rectangle on the placard or on an orange panel next to the placard. Replace XXXX with the UN number of the material being transported. Do not include the letters "UN".</p>	
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Hazardous Waste Transport Licence Requirements for Batteries or Battery Fluids

Transport on a public road of more than the transport licence quantity of a hazardous waste requires a Hazardous Waste Transport Licence.

Waste Type	Transport Licence Quantity	
	Transport by Contractor	Transport by BC Hydro Employee
Batteries, wet or dry, acid or alkaline	1,000 kg	2,000 kg
Battery fluids, not in a battery, acid, or alkaline	5 L	100 L

Transport by rail, ship, or air that does not involve any road transport does not require a Hazardous Waste Transport Licence.

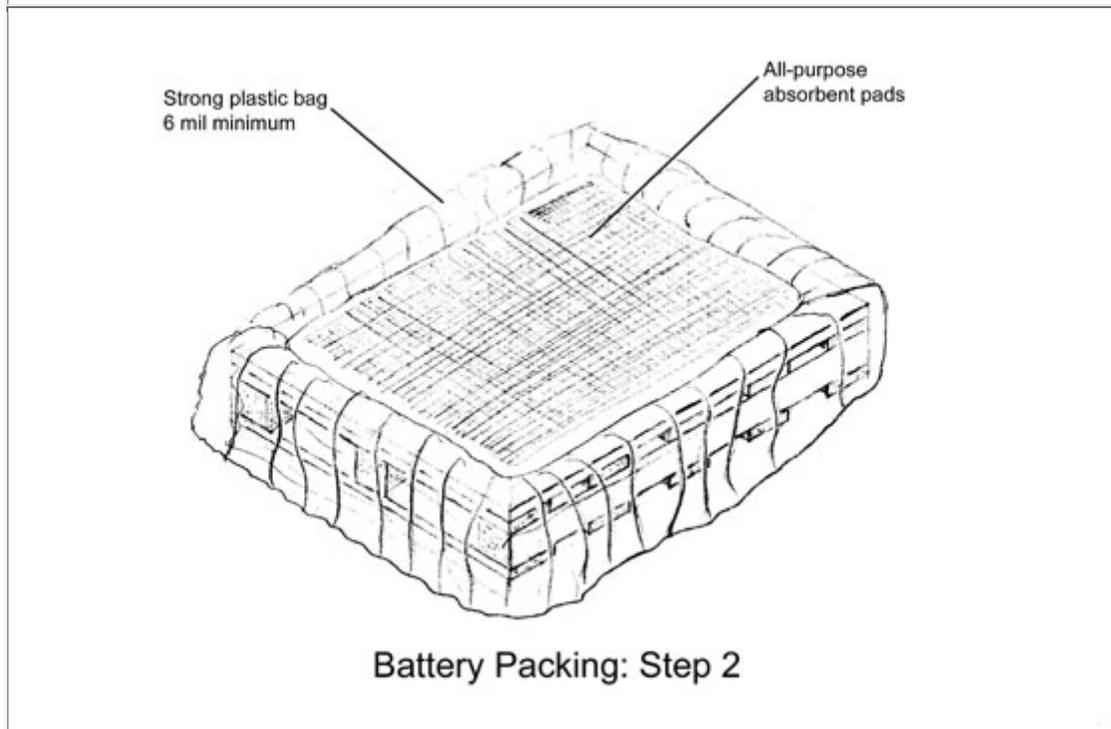
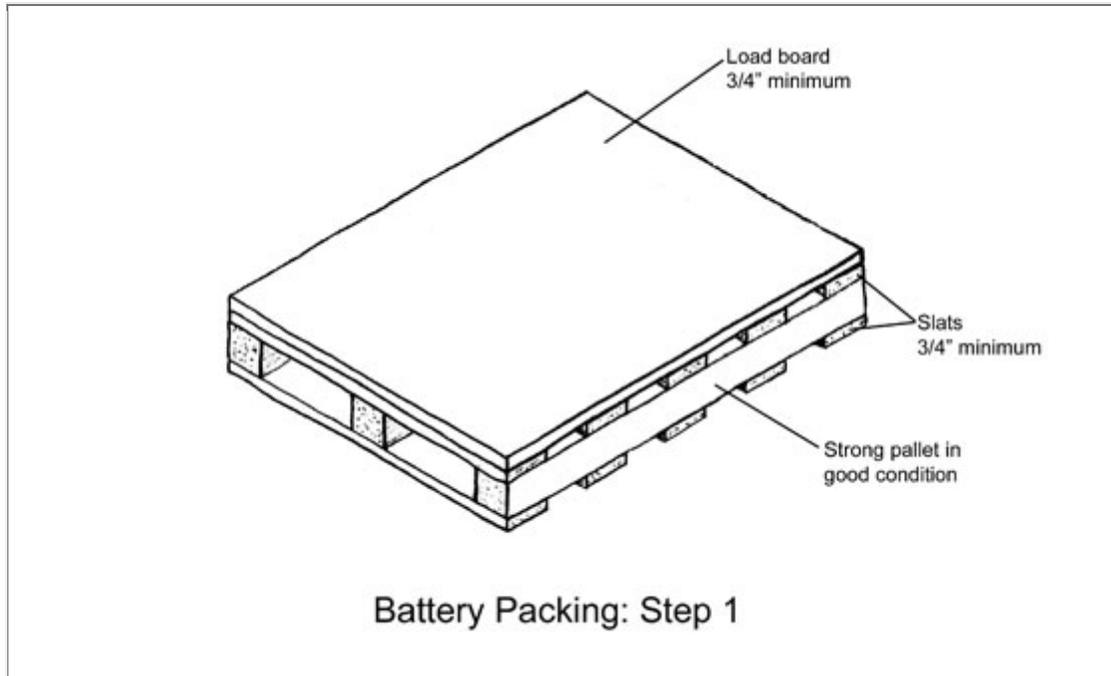
TDG Information Table: Batteries or Battery Fluids

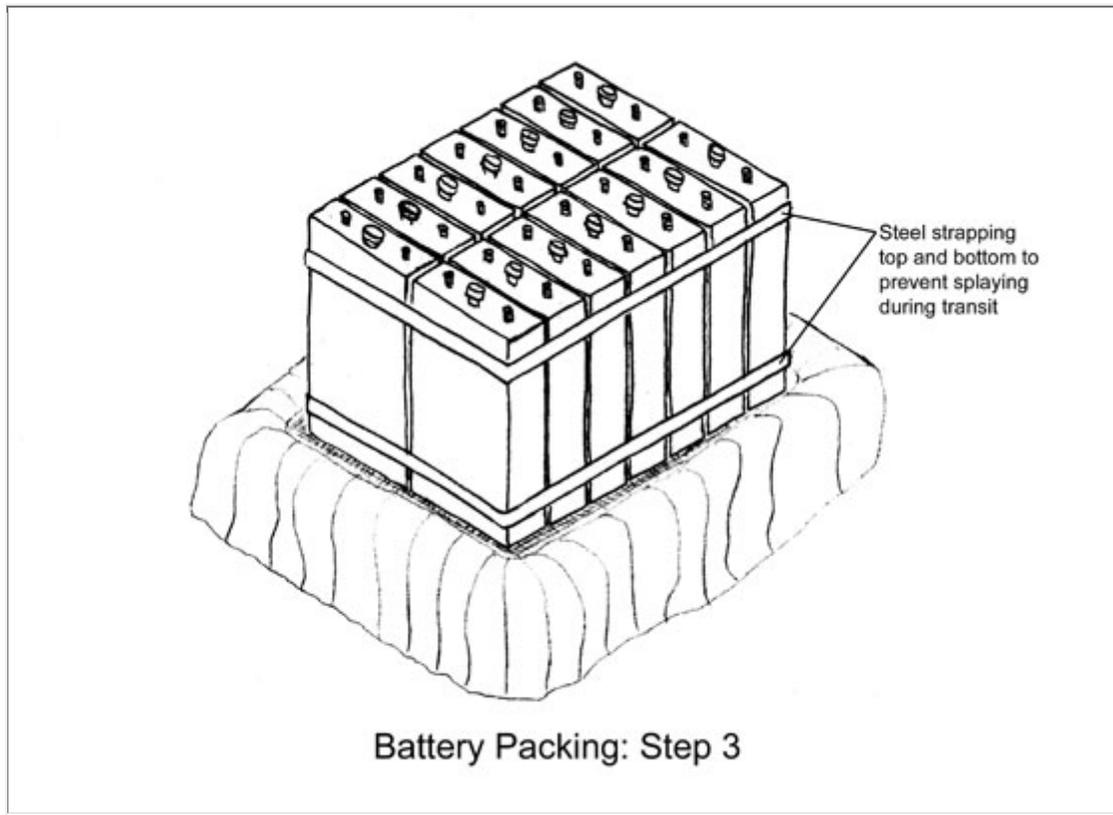
Battery or Fluid Type	Examples	Shipping Name	TDG Hazard Label	UN Number	Class	Packing Group
Wet acid batteries (New or waste)	Lead acid, lead calcium, or lead antimony batteries	Batteries, wet filled with acid		UN2794	8	III
Wet alkali batteries (New or waste)	Activated caustic potash or industrial nickel cadmium batteries	Batteries, wet filled with alkali		UN2795	8	III
Non-activated alkali batteries (New)	Caustic potash or industrial nickel cadmium batteries	Batteries, dry, containing potassium hydroxide solid		UN3028	8	III

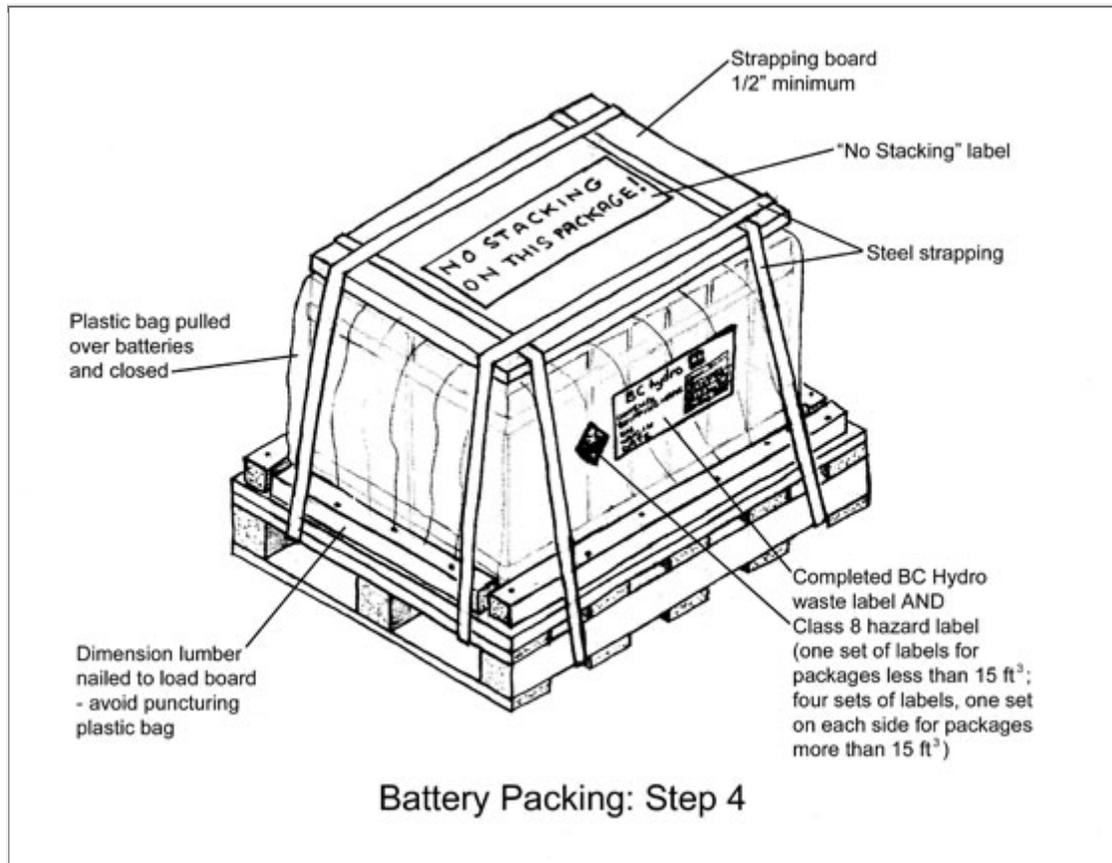
Non-spillable (gel type) batteries (New or waste)	Lead Absolyte® batteries	Batteries, wet, non-spillable		UN2800	8	III
Small lithium batteries	Saft, LS 14250, 3.6 volt Renata, CR2477N, 3.0 volt Panasonic, BR-2/3A, 3.0 volt	Not TDG regulated No shipping name, UN number, class, or packing group				
Other lithium batteries	See battery data sheet	Lithium batteries		UN3090	9	II
Non-lithium dry cell batteries (New or waste)	Alkaline or NiCad dry cells	Batteries, dry, containing potassium hydroxide solid		UN3028	8	III
Acid battery fluid (sulphuric acid) (New or waste)	Fluid for or from lead acid, lead calcium, or lead antimony batteries	Battery fluid, acid		UN2796	8	II
Alkali battery fluid (New or waste)	Fluid for or from caustic potash or industrial nickel cadmium batteries	Battery fluid, alkali		UN2797	8	II

Packing Waste Batteries on Pallets

Pack waste batteries on pallets as shown:







Coolants and Antifreeze

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Introduction

Note: This EBMP was last comprehensively reviewed on February 22, 2007, and may be out of date. Please contact Environmental Risk Management for changes.

Purpose: To document Environmental Best Management Practices for using or managing coolant or antifreeze, based on a life-cycle approach from purchasing through to recycling or disposal.

Scope: All types of coolant or antifreeze used in vehicles or generating equipment.

Note: This EBMP does not apply to methanol-based antifreeze products such as gas-line or windshield washer antifreeze.

General Principals for Managing Coolants and Antifreezes

BC Hydro is committed to managing coolant and antifreeze in an environmentally sound and responsible manner. In summary, the main principles for managing coolant and antifreeze are:

- Use and handle coolant and antifreeze to minimize risks to human health, property, and the environment.
- Use and handle coolant and antifreeze according to applicable legislation and codes.
- Use and handle coolant and antifreeze in ways that prevent release to water or land.
- Consider using propylene glycol as an alternative to ethylene glycol whenever antifreeze is needed.
- Do not mix materials other than water, glycol, or inhibitors with coolant or antifreeze.
- Keep different types of waste coolant and antifreeze separate to the extent possible.
- Recycle antifreeze as much as possible.
- Dispose of waste coolant and antifreeze that cannot be recycled in an environmentally sound manner.

Other sections of this best management practice provide more information for various specific situations.

Environmental Considerations

Environmental Hazards	Spills or leaks can cause: <ul style="list-style-type: none"> • environmental damage, including contamination of ground and surface water and soil, harm to animal life, damage to assets, and unplanned expenditures for corrective action • non-compliance with environmental legislation
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Avoidance of Mixing	<p>Do not mix coolant or antifreeze with materials other than water, glycol, or inhibitors.</p> <p>If possible, do not mix different types of coolants or antifreeze—that is, keep separate containers for:</p> <ul style="list-style-type: none"> • coolant without any antifreeze • waste ethylene glycol solution • waste propylene glycol solution
Regulation – Transportation of Dangerous Goods Regulations	<p>Coolant or antifreeze is not TDG regulated provided it is not mixed with other TDG regulated substances such as gasoline.</p>
Regulation – Environmental Management Act and Hazardous Waste Regulation	<p>Unless known otherwise from testing, waste coolant or antifreeze must be managed as leachable toxic waste according to the <i>Hazardous Waste Regulation</i> and the <i>Environmental Management Act</i>.</p> <p>Boron is the substance that most commonly makes waste coolant or antifreeze leachable toxic waste. Inhibitors often contain boron.</p> <p>Waste coolant or antifreeze that is not leachable toxic waste must still be managed as business waste according to the <i>Environmental Management Act</i>. For example, coolant or antifreeze may not be disposed to storm drain or sanitary sewer.</p>
Regulation – Fisheries Act and Spill Reporting Regulation	<p>Under the federal <i>Fisheries Act</i>, any spills of coolant or antifreeze to fish-bearing waters must be reported to the Department of Fisheries and Oceans.</p> <p>Under the BC <i>Spill Reporting Regulation</i>, spills of coolant or antifreeze must be reported if they are:</p> <ul style="list-style-type: none"> • more than 5 L for waste coolant or antifreeze that is TDG regulated, or • more than 200 L for all other cases
Regulation – Contaminated Sites Regulation	<p>Generic numerical water standards are listed for both ethylene and propylene glycol in the <i>Contaminated Sites Regulations</i>.</p>

Purchasing

Minimum Quantities	Purchase the minimum quantities of coolant additives or antifreeze to meet use and inventory needs.
Purchase Direct	Coolant additives or antifreeze are not available through MMBU – purchase direct from a local supplier.
Specifications	Select a product that is compatible with the equipment and recommended by the manufacturer.
Recycling Program	Where possible, select a supplier for antifreeze that has a recycling program.
Antifreeze Type	Consider use of propylene glycol instead of ethylene glycol whenever antifreeze is needed.
Safety Information	Make sure an MSDS is supplied with coolant additives or ethylene glycol based antifreeze or is available for them on the BC Hydro MSDS system.
Labels	<p>Make sure all containers have labels, including WHMIS labels if the contents are in any WHMIS class – see the MSDS database.</p> <p>Note: Consumer products bought at retail outlets do not have to have WHMIS labels. However, if these products are used in the workplace and are in one or more WHMIS classes, there must be an MSDS on site, and workplace WHMIS labels must be put on the containers.</p>

Transporting New Coolant or Antifreeze

Note: these sections also apply to empty containers

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents, as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).</p>
Documentation	Complete a bill of lading for the shipment.

Condition and Leak Check	<p>Check that containers are in good condition and suitable for transport – that is:</p> <ul style="list-style-type: none"> not leaking, bulging, or overfilled not significantly rusted, dented, or damaged (steel containers) not cracked or brittle as a result of exposure to sunlight (plastic containers) having closed, non-removable heads if using barrels (ring/open-top barrels are not suitable for liquids) <p>If unsound, unsuitable, or overfilled containers are found:</p> <ul style="list-style-type: none"> use an overpack drum to contain the unsound container, or transfer the coolant or antifreeze to a suitable container – see “Transfers” see “Spill Response” for clean-up of any leakage
Closure Check	<p>Make sure that all containers are properly closed.</p>
Packaging	<p>Package to:</p> <ul style="list-style-type: none"> keep containers upright prevent leaks or spills during expected conditions of transport allow safe unloading at the receiving location (call ahead – do not assume the receiving location has the same facilities as the shipping location) <p>Preferred packaging for barrels is strapped together and strapped to pallets in good condition, as long as the pallets can be safely handled at both the shipping and receiving locations</p>
Labels	<p>Make sure that all containers have labels, including WHMIS labels if the contents are in any WHMIS class. If WHMIS labels are missing, get them from the MSDS database.</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>

Shipping: Loading

The shipper is responsible for the following:

Safety	<p>Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.</p>
Precautions	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).</p> <p>Check that the carrier has a spill kit and a copy of the Spill Response Card on the truck.</p>

Loading Equipment and Methods	Use equipment and methods designed to handle and load the containers or equipment safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your Business group, or client.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit. Use "universal" sorbents if leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials. Check that drains to which spilled coolant or antifreeze might leak are protected during loading (for example, use a drain cover).
Label Check	Check that containers are labeled in weather-resistant form.
Condition Check	Check that containers are in good condition and suitable for transport—that is: <ul style="list-style-type: none"> • not leaking or bulging • not significantly rusted, dented, or damaged (steel containers) • not cracked or brittle as a result of exposure to sunlight (plastic containers) • having closed, non-removable heads if barrels are being used (ring/open-top barrels are not suitable for liquids) Do not accept containers unsuitable for transport unless fully contained in an overpack.

Closure Check	Check that all containers are properly closed.
Packaging Check	Check that any packaging (for example, pallets or strapping) is in good condition for transport.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded. If rejecting the shipment, explain the reasons to the shipper.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response Card  in case of a spill.						
Spill Reporting – Verbal, Internal	<p>Report any spill involving coolant or antifreeze in transit.</p> <p>BC Hydro employees report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the manager below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Edie Thome</td> <td style="text-align: center;">Tel. 604.528.3419</td> <td style="text-align: center;">Cel. 778.828.6231</td> </tr> <tr> <td style="text-align: center;">Lisa Seppala</td> <td style="text-align: center;">Tel. 604.528.2500</td> <td style="text-align: center;">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
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<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 200 L): (Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 200 L:</p> <p>For spills less than 200 L to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>						
<p>Spill Reporting – EIR</p>	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="623 1682 1369 1776"> <tr> <td data-bbox="623 1682 810 1734">Edie Thome</td> <td data-bbox="810 1682 1073 1734">Tel. 604.528.3419</td> <td data-bbox="1073 1682 1369 1734">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="623 1734 810 1776">Lisa Seppala</td> <td data-bbox="810 1734 1073 1776">Tel. 604.528.2500</td> <td data-bbox="1073 1734 1369 1776">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
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Receiving

The receiver is responsible for the following:

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).</p>
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> what is received agrees with what is on the shipping documentation there are no signs of leakage from the containers <p>If leaks are found:</p> <ul style="list-style-type: none"> use an overpack to contain the leaking container, or transfer waste to a sound container – see “Transfers” if needed see “Spill Response” for clean-up of any leakage
Unloading Equipment and Methods	Use equipment and methods designed to handle and unload the containers safely – Loading and Unloading of Trucks .

Transporting Waste Coolant or Antifreeze

Note: This section also applies to empty containers.

Shipping: Planning

The shipper is responsible for the following:

Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.
Registration of Shipping and Receiving Sites	<p>If the waste coolant or antifreeze being shipped is less than 500 L, the shipping and receiving sites do not have to be registered. See the next section on Hazardous Waste Transport Licence.</p> <p>If the waste being shipped is more than 500 L, the shipping and receiving sites must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> the shipping site is on the list the receiving site is on the list, if it is a BC Hydro site leachable toxic waste is registered the amount registered is more than the amount of waste coolant or antifreeze being shipped

	<p>If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number.</p> <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Hazardous Waste Transport Licence	<p>Before arranging road transport, check if the carrier will need a Hazardous Waste Transport Licence. See the “Hazardous Waste Transport Licence Requirements.”</p> <p>If a Hazardous Waste Transport Licence is needed, check at the time of arranging transport that the carrier has a valid licence that allows for carrying of antifreeze or leachable toxic waste.</p>

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).</p>
Condition and Leak Check	<p>Check that containers are in good condition and suitable for transport—that is:</p> <ul style="list-style-type: none"> • not leaking, bulging, or overfilled • not significantly rusted, dented, or damaged (steel containers) • not cracked or brittle as a result of exposure to sunlight (plastic containers) • having closed, non-removable heads, if using barrels (ring/open-top barrels are not suitable for liquids) <p>If unsound, unsuitable, or overfilled containers are found:</p> <ul style="list-style-type: none"> • use an overpack drum to contain the unsound container, or • transfer the coolant or antifreeze to a suitable container – see “Transfers” • see “Spill Response” for clean-up of any leakage
Closure Check	Make sure that all containers are properly closed
Packaging	<p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead – do not assume the receiving location has the same facilities as the shipping location)

	Preferred packaging for barrels is strapped together and strapped to pallets in good condition, as long as the pallets can be safely handled at both the shipping and receiving locations.
Labels	<p>Make sure that all containers have labels as per the “Marking Instructions.”</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>

Shipping: Paper Work

The shipper is responsible for the following:

Documentation	Use a movement document/manifest if the amount being shipped is more than 5 L
Inventory Update	<p>Update the waste inventory records to show the coolant or antifreeze shipped. Include the date the waste was shipped and the serial number from the shipping documentation, if any.</p> <p>Download and use the Hazardous Waste Inventory Form if necessary. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example</p>

Transporting Using a Movement Document/ Manifest

Consignor (Shipper) Information	<p>Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if necessary.</p> <p>Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable.</p> <p>Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID.</p> <p>If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site.</p> <p>Enter the:</p> <ul style="list-style-type: none"> Shipping Name as Leachable toxic waste (boron) UN number as Not applicable or N/A class as Not applicable or N/A packing group as Not applicable or N/A <p>Make sure that emergency contact numbers are filled in.</p>
Carrier Information and Signature	<p>Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.</p>

Copies	<p>Do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> • Copy 1 (white)—mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • If the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the province receiving the waste at the address listed on the back of the movement document/manifest. • if the waste is being disposed of without being shipped through Materials Management Business Unit, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
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Shipping: Loading

The shipper is responsible for the following:

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).</p> <p>Check that the carrier has a spill kit and a copy of the Spill Response Card on the truck.</p>
Hazardous Waste Transport Licence Check	<p>Check the carrier's Hazardous Waste Transport Licence unless one is not needed. See the "Hazardous Waste Transport Licence Requirements."</p> <p>Make sure that:</p> <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying of antifreeze or leachable toxic waste

	<ul style="list-style-type: none"> the licence has not expired
Loading Equipment and Methods	Use equipment and methods designed to handle and load the containers or equipment safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> the carrier's vehicle can safely transport the load containers are upright the load will not shift during transport: <ul style="list-style-type: none"> in a trailer, the load is strapped or tied to both walls and floor on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides in a pickup, the load is strapped to the sides of the box no sharp edges might damage or puncture the load no other items being carried could shift and damage or puncture the load

Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	Have a copy of the Spill Response Card  on the truck in case leak/spill response is needed in transit. Use "universal" sorbents if leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials. Check that drains to which spilled coolant or antifreeze might leak are protected during loading (for example, use a drain cover).
Hazardous Waste Transport Licence	Have a valid Hazardous Waste Transport Licence that allows carrying of antifreeze, environmentally hazardous substances, or leachable toxic waste, unless one is not needed. See the "Hazardous Waste Transport Licence Requirements".
Label Check	Check that: <ul style="list-style-type: none"> all containers have waste labels the labels on the containers are consistent with what is on the shipping documentation

Condition Check	<p>Check that containers are in good condition and suitable for transport—that is:</p> <ul style="list-style-type: none"> • not leaking or bulging • not significantly rusted, dented, or damaged (steel containers) • not cracked or brittle as a result of exposure to sunlight (plastic containers) • having closed, non-removable heads if barrels are being used (ring/open-top barrels are not suitable for liquids) <p>Do not accept materials unsuitable for transport unless fully contained in an overpack.</p>
Closure Check	<p>Check that all containers are properly closed.</p>
Packaging Check	<p>Check that any packaging (for example, pallets or strapping) is in good condition for transport.</p>
Acceptance	<p>Accept the shipment for transport based on the above checks and have it loaded.</p> <p>If the amount of waste coolant or antifreeze is more than 5 L:</p> <ul style="list-style-type: none"> • complete Part B of the movement document/manifest and sign all copies – see How to Complete Part B of a Movement Document/Manifest if needed • return copies 1 and 2 to the shipper • take copies 3 to 6 with the load <p>Distribution of the Movement Document Manifest summarizes how to distribute and retain the movement document/manifest copies.</p> <p>If rejecting the shipment, explain the reasons to the shipper.</p>
Loading Check	<p>Check that the containers loaded match the descriptions and quantities given on the shipping documentation.</p>
Load Safe and Secure	<p>Check that:</p> <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	<p>Keep a copy of the shipping documentation in the place specified by the TDG Regulations. See Document Locations if needed.</p> <p>If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. See “Hazardous Waste Transport Licence Requirements” if necessary.</p>						
Load Check	<p>Check the load at least every 8 hours to ensure that it has not shifted or started to leak.</p>						
Spill Response	<p>Follow guidelines on the Spill Response Card in case of a spill.</p>						
Spill Reporting – Verbal, Internal	<p>Report any spill involving coolant or antifreeze in transit.</p> <p>BC Hydro Employees Report to:</p> <ul style="list-style-type: none"> work leader or manager, and owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors Report to:</p> <ul style="list-style-type: none"> BC Hydro person arranging the transport employer, and owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <p>In addition, the manager below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="623 1230 1370 1335"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
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Spill Reporting – Verbal, External	<p>Spill to Water (Any Quantity), or Spill to Land (More than 5 L): (Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> name and phone number of the person providing notification 						

	<p>of the spill</p> <ul style="list-style-type: none"> • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 5 L:</p> <p>For spills less than 5 L to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
Spill Reporting – EIR	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	<p>If the shipment was more than 5 L, have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.</p>
Copies	<p>If a movement document/manifest was needed, do the following with the copies:</p> <ul style="list-style-type: none"> • Copy 4 – keep on file for at least two years • Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>

Receiving

The receiver is responsible for the following:

Documentation from Carrier	<p>Get the shipping documentation from the carrier.</p> <p>Contact Environmental Risk Management group so that appropriate authorities can be notified if there is no movement document/ manifest when there is supposed to be one (more</p>
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	than 5 L of coolant or antifreeze received).
TDG Training	Have, or work under the supervision and in the presence of someone who has: <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training
Authorization for Receiving Hazardous Waste	If the waste being received is less than 500 L, the receiving site does not have to be registered. In this case, see the next section on Receiving Check. If the waste being received is more than 500 L, the receiving site must be registered. In this case, go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that: <ul style="list-style-type: none"> • the receiving site is on the list • environmentally hazardous substance – liquid is registered • the amount registered is more than the amount of waste coolant or antifreeze being received If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.
Receiving Check	If what is on the shipping documentation does not agree with what is received, report to your supervisor. Note: For shipments more than 5 L, contact Environmental Risk Management group so that the appropriate authorities can be notified, if: <ul style="list-style-type: none"> • the description on the movement document/manifest does not match the shipment, or • the quantity shown on the movement document/manifest is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials. Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).
Leak Check	Make sure there are no signs of leakage. If leaks are found: <ul style="list-style-type: none"> • use an overpack to contain the leaking container, or • transfer the waste to a sound container – see "Transfers" if needed

	<ul style="list-style-type: none"> see “Spill Response” for clean-up of any leakage
Unloading Equipment and Methods	Use equipment and methods designed to handle and unload the containers safely – see Loading and Unloading of Trucks .

Receivers Responsibilities: Completion of Paperwork

Completion of Movement Document/Manifest	<p>If the shipment was more than 5 L, complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if necessary.</p> <p>Enter BCG00122 as the Receiver/Consignee Registration No/Provincial ID.</p>
Copies	<p>If the shipment was more than 5 L, do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 Copy 4 – return to the carrier Copy 5 – keep on file for at least two years Copy 6 – mail to the consignor
Inventory Update	<p>Update waste inventory records to show the amount of waste coolant or antifreeze received. Include the date the waste was received and the movement document/manifest number.</p> <p>Download and use the Hazardous Waste Inventory Form  if necessary. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example </p>

Transporting Empty Containers

Transport empty containers using the same precautions as full ones unless the containers are known to be really empty. This is because so-called empty containers often contain residues. If these containers are not properly closed, or become damaged, there is a significant risk of leakage or spillage during transport.

See as applicable:

- “Transporting New Coolant or Antifreeze”
- “Transporting Waste Coolant or Antifreeze”

Storage

Storing New Coolant or Antifreeze

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).</p>
Inventory	Minimize the storage of coolant or antifreeze by buying the smallest amount needed for use and inventory.
Containers	<p>Make sure that containers for coolant or antifreeze are:</p> <ul style="list-style-type: none"> • in good condition • closed during storage • handled, stored, or transported so as not to cause leaks or ruptures
Containment	Provide containment where possible.
Storage Location	<p>Store coolant or antifreeze:</p> <ul style="list-style-type: none"> • away from traffic • in a designated area • with protection from the weather, including freezing if this is a possibility <p>Do not store near drains or watercourses. If this cannot be avoided, block or seal drains until the coolant or antifreeze can be moved.</p> <p>If coolant or antifreeze is stored outdoors, put it under cover to protect it from the weather:</p> <ul style="list-style-type: none"> • using barrel covers, or • covered with a UV-resistant nylon or polypropylene tarpaulin <p>Cover containers in containment trays with a tarpaulin that extends over the entire containment tray to prevent rain or snow from filling up the containment.</p>
Storage Requirements	<p>Make sure that coolant or antifreeze is stored:</p> <ul style="list-style-type: none"> • separate from oxidizing agents, acids, and alkalis, and away from sources of ignition (smoking, open flames, and sparks) and heat • in a cool, well-ventilated place • if using any racking, shelving or pallets, with these: <ul style="list-style-type: none"> – in good condition – large enough so that containers do not hang over edges – adequate for the weight of the stored materials • with labels outward

	<ul style="list-style-type: none"> with containers upright to allow for easy leak inspection (for example, off the floor on pallets with aisle space between the pallets) not more than two high for palletized drums or barrels
Labels	<p>Make sure that all containers have labels, including WHMIS labels if the contents are in any WHMIS class. If WHMIS labels are missing, get them from the MSDS database.</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>
Restricted Access	<p>Restrict site access during non-working hours.</p>
Inspections	<p>Inspect the storage facility monthly or as per the site or station maintenance plan.</p> <p>When inspecting, include:</p> <ul style="list-style-type: none"> checking shelving or pallets for damage checking containers for leaks or damage – if problems are found: <ul style="list-style-type: none"> transfer the coolant or antifreeze to a suitable container—see “Transfers, or use an overpack drum to contain the leaking container see “Spill Response” for clean-up of any leakage removal of any incompatible materials in the storage area (for example, oxidizers, corrosives, and so on) <p>Keep a record of the inspection and report any findings.</p>

Storing Waste Coolant or Antifreeze

Safety	<p>Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.</p>
Precautions	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).</p>
Avoidance of Mixing	<p>Do not mix waste coolant or antifreeze with other materials.</p> <p>If possible, keep separate containers for waste:</p> <ul style="list-style-type: none"> coolant without any antifreeze ethylene glycol solution propylene glycol solution
Containers	<p>Make sure that containers for coolant or antifreeze are:</p> <ul style="list-style-type: none"> in good condition closed during storage handled, stored, or transported so as not to cause leaks or ruptures

Containment	<p>Provide containment where more than 500 L of waste coolant or antifreeze are stored. If possible, provide containment for quantities less than 500 L. Store material away from drains.</p> <p>Use containment trays, curbed rooms, or Transportable Storage Containers (TSCs) with spill trays. Provide containment that is the larger of:</p> <ul style="list-style-type: none"> • 110 percent of the volume of the largest single volume of waste coolant or antifreeze being stored • 25 percent of all the waste coolant or antifreeze being stored in the containment
Storage Location	<p>Store coolant or antifreeze:</p> <ul style="list-style-type: none"> • away from traffic • in a designated area • with protection from the weather, including freezing if this is a possibility • on non-absorbent surfaces <p>If is not possible to store under roof, cover containers in containment trays with a tarpaulin that extends over the entire containment tray to prevent rain or snow from filling up the containment.</p>
Storage Requirements	<p>Make sure that coolant or antifreeze is stored:</p> <ul style="list-style-type: none"> • separate from oxidizing agents, acids, and alkalis • away from sources of ignition (antifreeze sometimes contains flammable liquids although these should never be mixed with it on purpose) • in a cool, well-ventilated place identified with signs • if using any racking, shelving or pallets, with these: <ul style="list-style-type: none"> – in good condition – large enough so that containers do not hang over edges – adequate for the weight of the stored materials • with labels outward • with containers upright • to allow for easy leak inspection (for example, off the floor on pallets with aisle space between the pallets) • not more than two high for palletized drums or barrels
Labels	<p>Make sure that all containers have waste and WHMIS labels. See “Marking Instructions”.</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>
Restricted Access	<p>Restrict site access during non-working hours.</p>
Minimize Storage Quantities	<p>Dispose of or recycle waste coolant and antifreeze to keep the total amount stored less than 500 L.</p> <p>Note: All requirements of the <i>Hazardous Waste Regulation</i> apply to amounts of waste coolant and antifreeze more than 500 L that are stored for more than 4 days. Contact the MMBU Environmental Technical Specialist for assistance.</p>

<p>Storage Record</p>	<p>Keep a record of stored coolant and antifreeze on site at all times. Record as applicable:</p> <ul style="list-style-type: none"> • the identification number of each container • when the container is received or stored • what is in the container, including the shipping name, leachable toxic waste (boron) • how much is in the container, in litres (update if waste is added to a partly filled container) • when the container is removed from storage or shipped from site • where the container is on site • the movement document/manifest number for wastes received or shipped • the number of the certificate of processing or destruction for wastes treated or destroyed <p>Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p> <p>Keep the storage records on site for at least two years after the waste is removed from the site.</p>
<p>Inspections</p>	<p>Inspect the storage facility monthly or as per the site or station maintenance plan.</p> <p>When inspecting, check that:</p> <ul style="list-style-type: none"> • pallets are not damaged • containers are not leaking or damaged – if problems are found: <ul style="list-style-type: none"> – use an overpack to contain the leaking container, or – transfer waste water-based coolants to a sound container—see “Transfers” if transfers of liquid coolant are needed – see “Spill Response” for clean-up of any leakage • adjacent drains, if any, are blocked or sealed • no incompatible materials are in the storage area (for example, fuels, oxidizers, etc.) <p>Keep a record of the inspection and report any findings.</p>

Use and Handling

Transfers

<p>Safety</p>	<p>Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.</p>
<p>Precautions</p>	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain</p>

	cover).
Containment	<p>Where possible provide containment equal to 110 percent of the amount of coolant or antifreeze being handled.</p> <p>Keep transfer hoses within containment areas to the greatest extent possible</p>
Container Suitability and Cleanliness	<p>Make sure that the container or equipment to which the coolant or antifreeze will be transferred:</p> <ul style="list-style-type: none"> • is protected from traffic-use barriers and signs where necessary • is in good condition: <ul style="list-style-type: none"> – not significantly rusted, dented, or damaged (steel containers) – not cracked or brittle as a result of exposure to sunlight (plastic containers) • has caps, covers or bungs, and gaskets or seals that can be closed leak-tight • does not contain inappropriate materials or residues (for example, oil or gasoline) • has a reliable means to monitor the level as it is being filled
Container Check	<p>Check that:</p> <ul style="list-style-type: none"> • any outlets below the intended liquid level on the receiving container or equipment are closed and plugged, capped, or locked • any drains are closed and plugged, capped, or locked • transfer valves are open
Valve Check	<p>Check that:</p> <ul style="list-style-type: none"> • vents on both the container/equipment being filled and emptied are open • transfer valves are set correctly
Leak and Level Checks	<p>Monitor the transfer continuously to make sure that the receiving container or equipment is not leaking and is not overfilled.</p>
Drip Collection	<p>Use drip pans when breaking connections. Recycle collected drips</p>
Secure Openings	<p>Close and plug, cap, or lock openings on the filled and emptied container or equipment, as appropriate.</p>
Leak Check	<p>Check the filled container or equipment for leaks</p>
Labels	<p>Make sure that all containers have labels, including WHMIS labels if the contents are in any WHMIS class. If WHMIS labels are missing, get them from the MSDS database.</p> <p>In addition, waste coolant or antifreeze must have waste labels. See “Marking Instructions.”</p> <p>If the container previously used for something else, ensure that any non-applicable labels are removed or erased.</p>

Disposal of Used sorbents	Spill clean-up materials used only for clean-up of coolant or antifreeze are not hazardous waste and may be disposed of in a local landfill.
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Checking Equipment

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	<p>Have "universal" sorbents available in case leak/spill response is required. Do not use "oil-only" sorbents as they do not absorb water-based materials.</p> <p>Make sure that drains or watercourses to which spilled coolant or antifreeze might leak are protected (for example, use a drain cover).</p>
Inspection and Maintenance	<p>Inspect equipment (including spares) regularly for evidence of leaks.</p> <p>Check:</p> <ul style="list-style-type: none"> casings, hoses, connections, gaskets, seals, valves, and fittings on the equipment and the ground around the equipment
Repair	<p>Repair leaks as soon as possible.</p> <p>If leaks cannot be repaired immediately and no containment is provided:</p> <ul style="list-style-type: none"> address leaks as close to the source as possible lay universal sorbent pads around leaking components and replace as necessary to prevent escape of coolant or antifreeze to the environment prevent escape through drains (e.g., use a drain blocker)
Clean-Up	See Clean Up section in "Spill Response."
Reporting	Contact Environmental Risk Management group if the amount of spilled coolant or antifreeze is more than 5 L.

Spill Response for Water-Based Materials

The following steps are presented as general guidelines for responding to spills of non-aggressive water-based materials such as coolant. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your Regional Environmental Coordinator/Environmental and Social Issues Manager or your environmental services group.

1. Ensure Safety	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response – see OSH Standard 301: WHMIS and Hazardous Materials and OSH Standard 302: Safety During Spill Response.</p>
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	<p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE). Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> go to the Material Safety Data Sheet database, or for dangerous goods in transport, contact ICC The Compliance Center at 604-986-4617 (24 hours) 						
2. Stop the Flow	<p>Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.</p>						
3. Secure the Area	<p>Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources.</p> <p>Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>						
4. Contain the Spill	<p>Protect drains, sewers, culverts, waterways, and ditches, as appropriate.</p> <p>Contain the spilled product with sorbents, pads, or socks. Do not use "oil-only" sorbents as they do not absorb water-based materials. If a spill kit is not available or greater containment is required, use earth and/or sod.</p> <p>Identify all potential sources and the extent of the spilled material. Monitor containment measures.</p>						
5. Notify/Report	<p>Internal: For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="623 1247 1370 1352"> <tr> <td data-bbox="623 1247 808 1297">Edie Thome</td> <td data-bbox="808 1247 1073 1297">Tel. 604.528.3419</td> <td data-bbox="1073 1247 1370 1297">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="623 1297 808 1352">Lisa Seppala</td> <td data-bbox="808 1297 1073 1352">Tel. 604.528.2500</td> <td data-bbox="1073 1297 1370 1352">Cel. 778.866.3251</td> </tr> </table> <p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than Reportable Quantity):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain.)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the Fisheries Act), and 	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

	<ul style="list-style-type: none"> • local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the reportable quantity, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
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<p>6. Clean Up</p>	<p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get labels and UN certified containers, if required, from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, soil and coolant mixture from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act and Regulations</i> if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste
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Sampling and Testing

Testing Coolant or Antifreeze for Continued Use

Safety	Handle coolant or antifreeze as per the applicable occupational health and safety standards for your business group or client.
Precautions	Have "universal" sorbents readily available in case of accidental spills during sampling. Do not use "oil-only" sorbents as they do not absorb aqueous solutions.
Properties Check	Test the coolant or antifreeze from time to time to see if it is still suitable for continued use.
Sample Collection and Interpretation of Results	Follow Departmental Standards.

Transporting Samples

Documentation	Complete a sample transmittal form. Make sure the form has on it: <ul style="list-style-type: none"> the name and address of the shipper, and the words TEST SAMPLES
Packing	Pack the samples: <ul style="list-style-type: none"> to avoid damage or leakage during transport – for example, tape bubble wrap around glass sample bottles in boxes or other packaging with enough absorbent so that there will be no leakage from the package, if a sample container leaks or breaks so that the net mass of the samples is less than 5 kg including the completed sample transmittal form in a plastic sleeve to protect it in event of a leak Print the words TEST SAMPLES clearly in block letters on the outside of the package.
Shipment	When shipping to the testing laboratory, do NOT send by mail.

Testing Coolant or Antifreeze for Recycling/Disposal

Field Check	Contact the MMBU Environmental Technical Specialist for sampling procedures and other instructions.
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Recycling and Disposal of Coolant and Antifreeze

Recycling/Disposal from Non-Vehicle Sources	Recycle/dispose of waste coolant or antifreeze through MMBU. Contact the MMBU Environmental Technical Specialist for sampling procedures and other arrangements.
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Recycling/Disposal by Vehicle Support Services	Recycle/dispose of waste coolant or antifreeze through Store 66. Contact the MMBU Environmental Technical Specialist for sampling procedures and other arrangements.
Recycling/Disposal of Small Quantities	Where small quantities (5 L or less) of waste coolant or antifreeze are generated, for example, at NIA locations, these may be placed on an on-site Bio Pile.
Storage Before Recycling or Disposal	See “Storing Waste Coolant or Antifreeze.”
Shipping for Recycling or Disposal	See “Transporting Waste Coolant or Antifreeze.”

Glossary - Definitions

Antifreeze –Means either:

- ethylene or propylene glycol, or
- a liquid that contains ethylene or propylene glycol

Note: Antifreeze is often used as a coolant. However, not all coolants contain glycol. So to be clear in this EBMP what is being referred to, antifreeze means a material that contains glycol and coolant means a material that does not.

Boron – Substance that most commonly makes waste coolant or antifreeze leachable toxic waste. The boron comes from inhibitors. Hence, "leachable toxic waste (boron)" is the shipping name for waste coolant or antifreeze unless known otherwise.

Coolant – Means water that contains inhibitors but not antifreeze. Some inhibitors are added to coolant as a liquid (e.g., Liquid Perry) and some are slowly dissolved into the coolant from a filter cartridge (e.g., Baldwin Controlled Release Filters).

Inhibitors – Chemicals that are used in coolant or antifreeze to prevent corrosion or growth of slime. Inhibitors are often packaged together as Supplementary Cooling Additives (SCA).

Land Where There is Potential for the Spill to Reach Water – Land from which a spill could enter water or fish habitat, where:

- water means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada, and
- fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34]

Net mass – As it relates to dangerous goods, means the total mass of dangerous goods not including containers.

New – As applied to coolant or antifreeze, means:

- unused coolant or antifreeze, or
- recycled antifreeze that meets equipment manufacturer' specifications for use

Shipping Documentation – Whatever documents must go with a shipment.

Depending what and how much is being shipped, these documents could be one or more of the following:

- a bill of lading
- a full dangerous goods shipping document
- a document with information required by an exemption from TDG requirements
- a movement document/manifest
- a Permit for Equivalent Level of Safety

TDG regulated – Regulated by the *Transportation of Dangerous Goods Act and Regulations* when transported.

UN Number – Previously known as product identification number (PIN).

Waste – As applied to coolant or antifreeze, means coolant or antifreeze that is not suitable for reuse.

Note: Waste coolant or antifreeze may be hazardous waste (leachable toxic) because of substances in added inhibitors or metals picked up during use. It is assumed that all waste coolant or antifreeze is leachable toxic waste unless tests show otherwise.

Water – Means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada. [*Fisheries Act* section 2, definition of Canadian Fisheries Waters] and includes fish habitat. Fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34] Fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish. As a guideline, fish habitat includes the area extending 15 meters inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

References

Marking Instructions for Waste Coolant and Antifreeze

All containers of waste coolant or antifreeze must have:

- completed waste labels, and
- WHMIS labels

WHMIS Labels

If needed, get WHMIS workplace labels for the coolant additive or antifreeze from the MSDS database. Write "Waste" before the fluid name on the label.

If the containers were used before for something else, remove or erase any labels that no longer apply.

Waste Labels

Get waste labels from the MMBU Environmental Technical Specialist and fill in:

- Container ID: A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label.
- Contents: What is in the container – for example, waste antifreeze (ethylene glycol) or waste coolant.
- Shipping Name: Leachable toxic waste, (boron).

- [UN number](#): Not applicable.
- Origin: Where the waste was generated – for example, Fort Nelson Generating Station.
- Date: When the waste was generated – use the start date if the container is filled over time.

Hazardous Waste Transport Licence Requirements

Transport on a public road of more than the transport license quantity of a hazardous waste requires a Hazardous Waste Transport Licence.

Type of Waste	Transport Licence Quantity	
	Transport by Contractor	Transport by BC Hydro Employee
Coolant or Antifreeze	5 L	500L

A Hazardous Waste Transport Licence is not required for transport:

- only on BC Hydro property
- by rail, ship, or air that does not involve any road transport

Environmental Requirements for Planning and Doing Work

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Introduction

These procedures describe how work is to be planned and executed so that the potential for adverse environmental impacts is minimized and regulatory compliance is assured. They apply to all work done by BC Hydro employees, internal and external contractors, contractor employees, and subcontractors.

Note: This EBMP is over five years old and may contain out dated information. Please contact Environmental Risk Management prior to using this document.

Definitions

Adverse Environmental Impact: A negative environmental impact to air, water, land, wildlife, habitat, and/or social milieu resulting from a project, activity, or operation, that is deemed to be important by an organization or stakeholder.

(BMP) BC Hydro Best Management Practice: A comprehensive set of work instructions designed to ensure consistency, efficiency, and legal compliance for all parts of the life cycle for materials, equipment, and natural resources.

Detailed Environmental Screening Matrix: A tool developed to assist in conducting a systematic assessment of potential environmental aspects and impacts arising from the proposed project or work.

Environmental Management Plan: A plan, prepared by an environmental expert, that describes the potential environmental impacts of a proposed project or activity on the surrounding environment and the proposed mitigation measures to ensure the

appropriate level of environmental protection and compliance with environmental legislation and guidelines.

Environmental Practice: A brief, documented, standardized work instruction for a specific work activity.

Environmental Review Process: A process that involves one or a combination of the following activities:

- screening of a project/work activity for potential environmental concerns/regulatory requirements
- an evaluation of potential environmental impacts and risk of a proposed project or activity
- identification of regulatory requirements and measures to prevent, mitigate, and/or compensate for adverse environmental impacts and ensure compliance with environmental regulations
- the preparation of an Environmental Management Plan

Environmental Screening Checklist: A checklist to screen a project or work activities for potential environmental sensitivities.

Maintenance (Routine): These are common facility maintenance activities, typically carried out by facility staff, for which the environmental implications are well known and for which documented work procedures (EBMPs or Environmental Practices) are in place.

Maintenance (Non-Routine): These are unique or infrequent maintenance activities, carried out by facility staff and/or contractors, for which the environmental implications are not well understood, and there may be a risk that the effects of these activities would be unacceptable to BC Hydro, regulatory agencies, and/or affected communities.

Operations (Routine): These are common/typical operations within PS System Operating Order "flag values," the environmental implications of which are well known and acceptable to local agencies and affected communities.

Operations (Non-Routine): These are operations outside of PS System Operating Order "flag values" or infrequent operations within flag values where the environmental implications are not well known, and there may be a risk that the effects of the operation would be unacceptable to BC Hydro, regulatory agencies, and/or communities.

Permits, Licensing, Notification, and Approvals Table: A quick-reference table developed to assist in determining the legislative requirements associated with Project activities.

Pre-Job Conference: A discussion between the BC Hydro contract representative and the contractor regarding the environmental requirements of a project or work activity, held prior to starting work. A record of the discussion is made using an appropriate Generation Sustainability or Engineering Environment and Sustainability form.

Project Manager: BC Hydro representative responsible for managing and implementing the project.

Project / Work Activity: Refers to all work undertaken by BC Hydro staff and contractors, including: construction, operations, maintenance, modifications, decommissioning, capital acquisitions, reclamation, and enhancement activities.

Standard Work Procedures: Standard, documented work practices to ensure environmental protection, e.g., Spill Prevention Plan.

Plan Work: Responsibility:

Assess Work for Environmental Requirements

Project Manager or Delegate

In consultation with the Environment Manager or delegate:

1. Assess all work for potential environmental impacts and regulatory requirements prior to planning the work. Use the following tools for the assessment:
 - Environmental Screening Checklist
 - Environmental Screening Checklist Instructions
 - Permit and Approval Requirements for Typical Project Work
2. Determine:
 - Whether the BC or Canadian *Environmental Assessment Acts* apply. This determination may require communication with government agencies. If either act applies, use the legislated process rather than the remainder of this procedure.
 - Whether any other regulatory requirements apply, including the need for a permit.
 - Whether an Environmental Representative will be assigned to the project. If the Project Manager or delegate and the Environment Manager or delegate decide that aspects are complex or that there are unique risks or opportunities related to the work, the Environment Manager will appoint the Environmental Representative.
 - The need for an Environmental Impact Assessment (EIA) or an Environmental Management Plan (EMP). An EMP is required:
 - when detailed standards or work instructions are not available to cover all project activities that may impact the environment;
 - as a tool to communicate with government agencies and facilitate the approval process; or
 - as a tool to evaluate contractor performance.
3. If the scope of project activities changes at any time during the course of planning or execution, reassess the project for environmental requirements.

Prepare Environmental Components of Contract Documents

Contract Administrator

In consultation with the Environmental Representative (if appointed):

1. Ensure appropriate environmental protection measures and agency terms and conditions are included with, or in the text of, contract documents as set out in the tendering procedures outlined in the *BC Hydro Contract Administration Manual*.
 - Environmental requirements may vary depending on the nature and complexity of the work and may include one or a combination of the following:
 - an Environmental Management Plan (EMP) (a draft EMP may be used pending finalization of the EMP)
 - instructions in the Summary of Requirements (SOR)
 - Environmental Best Management Practices (EBMPs)
 - Generation Sustainability and/or Engineering Environment and Sustainability Practices

- terms and conditions of regulatory agency approvals, permits, and licences
 - instructions in Detailed Project Specifications
 - instructions in the General Conditions and Specifications as shown on construction drawings
- Environmental requirements may specify the need for the contractor to provide:
 - environmental qualifications and experience
 - environmental record and references
 - specialized tools and equipment
2. If an EMP is required, follow the EMP Instructions and use the [EMP Template](#). The EMP may be prepared by the Environmental Representative, the contractor, or an individual designated by the Environment Manager. Environmental Risk Management will provide Terms of Reference and assistance to persons writing EMPs as necessary.
 3. If an EMP is not required, assemble a set of Environmental Practices as appropriate to the work activities. If adequate instructions are not available for the work to be done, create written procedures and submit for review and approval as set out in point 4 below.
 4. Prior to use, submit the environmental requirements to Environmental Risk Management for review and approval.
 5. Ensure all required permits are obtained prior to starting work. Where work involves burning, the contractor must obtain a burning permit. All other permits will be obtained by BC Hydro under the direction of the Project Manager or delegate.

Tools

- [Environmental Screening Checklist & Instructions](#)
- [Permit and Approval Requirements](#)
- [Distribution Design Environmental Checklist](#)
- [Transmission Environmental Checklist](#)
- [Environmental Management Plan Template & Instructions](#)

Purpose of an EMP:

- Environmental aspects and impacts are identified, investigated, and communicated to staff, contractors, and regulatory authorities, communities, and stakeholders.
- Safeguards are in place to effectively minimize environmental impacts during construction and to address conditions in planning and environmental approvals, relevant regulations, guidelines, and policies.
- Responsibilities for environmental management are clearly defined and understood.

The EMP provides:

- a prescription for completing on-site work in an environmentally sound way
- a mechanism for incorporating environmental issues into contract documents
- a framework for discussion of environmental issues at project tender briefings with the contractor

Development of an EMP

The level of detail required in an EMP depends on all of the following:

- the scale and complexity of the project
- environmental issues and approvals identified in the project planning phase
- any additional environmental and social issues identified following the project planning
- issues raised by the community, regulatory authorities, and key stakeholders

The criteria for when an EMP will be prepared are found in the procedure to Assess Work for Environmental Requirements.

Guidelines for who is responsible for preparing and approving an EMP are found in the procedure to Prepare Environmental Components of Contract Documents, step 2.

An EMP typically includes the components listed in the [EMP Template](#). Detailed requirements are provided and serve as a general guide for preparing and reviewing EMPs. Select only those components appropriate to the project or work to be undertaken.

Manage and Check Work

Work Executed by BCH Crews and CBU

Step	Details	Tools/Requirements
1. Ensure a job package is available to crews	Typically, the job package contains: <ul style="list-style-type: none"> • Work order • Copy of applicable standards / work procedures, including an Environmental Management Plan if applicable • Drawings (as applicable) • Underground locates (as applicable) • Tailboard form 	Environment: <ul style="list-style-type: none"> • Ensure that environmental parameters of work are addressed through work specifications, standards and procedures, and other safeguards, as appropriate • Consult with Regional Environmental Coordinators as necessary • Include First Nations considerations, as applicable
2. Communicate assignment to crews	<ul style="list-style-type: none"> • Assignment communicated to crews verbally in mandatory tailboards • In cases complex/non-traditional assignments, the manager may hold a pre-job 	System: Assignments as per the local work plan Environment: Ensure that environmental concerns are clearly communicated to crews
3. Conduct work	Ensure that crews adhere to applicable standards and local operating orders (PSSP, SPR)	Environment: Report all environmental incidents through the SAP Incident Management System (IMS)

4. Accept work	<ul style="list-style-type: none"> • Accept and close the job if the work is completed as per the work order • Close the work order • Mark up drawings • Revise Local Operating Orders, as necessary • Update Passport Inventory 	Complete a Field Work Method - Safety Procedures Check
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Work Executed by External Contractors

Procedure: Evaluate Tenders and Award Contract

Project Manager and Environmental Representative (if appointed):

1. Evaluate bids against tender requirements. Contractors will have proven qualifications and expertise to comply with the environmental requirements of the work. Consult the [Contractor Performance Information System](#) (CPIS) for past performance of the bidder.
2. If the bid is rejected on the basis of a lack of environmental competence, or poor past performance, the Contract Administrator will document the decision, advise Purchasing, and award the contract to the next qualified bidder.

Procedure: Provide Environmental Orientation to Contractors

Contract Administrator and/or Environmental Representative (e.g., Environmental Monitor):

1. Ensure the contractor and staff receive an environmental orientation prior to starting work. The orientation may be done as part of an overall Pre-Job Conference, at a tailboard meeting, or at a specific meeting, depending on the nature of the issues.
 - The orientation will include a discussion of the following:
 - type and location of environmentally sensitive resources on or near the work site
 - potential environmental impacts of project activities and/or products used
 - legal requirements
 - the environmental protection measures specified in the contract
 - emergency response measures
 - environmental incident reporting requirements
 - Provide the contractor with a set of Environmental Field Guidelines (these are currently under development) as appropriate to the nature of the assignment.
2. Make a record of the contractor orientation using an appropriate form. Ensure the completed form is signed by the contractor and Contract Administrator. Document tailboard discussions using an appropriate form. File completed forms in the Project file. See Pre-Job Conference and Tailboard Forms for a selection of blank forms.

Procedure: Monitor and Review Contractor Performance

Contract Administrator and/or Environmental Representative (e.g., Environmental Monitor):

1. Monitor the contractor's work activities to check for adherence to environmental specifications, including all of the following:

- compliance with regulatory requirements
- the effectiveness of environmental protection measures
- conformance to measures specified in the environmental requirements

Document the checks and file them in the project file. For Generation, the [Sample Contractor Monitoring and Inspection Checklist](#)  may be used. For Engineering Environment work, use the Field Work Method - Safety Procedures Check.

2. If monitoring determines a nonconformance with environmental requirements, inform the contractor and ensure immediate corrective action is taken or that work is stopped. Non-conformances will be addressed as described in the Environmental Management System.
3. Forward documentation of outstanding deficiencies to Purchasing for tracking.
4. In the event of an environmental incident (spill of hazardous substance, erosion and siltation, fish kill, aquatic habitat damage, etc.), ensure that:
 - the contractor responds appropriately;
 - notification is given to regulatory agencies and the responsible Environment Manager, or delegate; and
 - a BC Hydro an environmental incident is filed through the [SAP Incident Management System](#) (IMS).

The Environmental Manager may choose to monitor the quality of the response if the incident is significant.

On completion of the work, evaluate the project and the Contractor's performance. Where there is evidence that a contractor has not satisfied the environmental requirements, document the deficiencies in a letter to the contractor. Forward a copy of the letter to Purchasing and make an entry into the [Contractor Performance Information System](#) (CPIS). This information will be used in evaluating future bids by the contractor.

For Generation work, opportunities for system improvement are communicated through the Generation Operations EMS Process Improvement Procedure 4.2.

Tools

Pre-Job Conference and Tailboard Forms

The following sample pre-job conference and tailboard forms are available:

- [Environmental Orientation Record](#) 
- [Tailboard Forms](#)
- [Sample Contractor Monitoring and Inspection Checklist](#) 

Contacts

For information, contact Environmental Risk Management

- [Greg Scarborough](#) 604-528-1721 (71721)
- [Carol Lamont](#) 604-528-1877 (71877)

Insulating Oil

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Introduction

Note: This EBMP was last updated on February 22, 2007, and may be out of date. Please contact Environmental Risk Management for changes.

Purpose: To document Environmental Best Management Practices for using or managing insulating oil containing less than 50 ppm PCBs based on a life-cycle approach from purchasing through to disposal.

Scope: All types of insulating oil containing less than 50 ppm PCBs used for any purpose.

General Principles for Managing Insulating Oil

BC Hydro is committed to managing insulating oil in an environmentally sound and responsible manner. In summary, the main principles for managing insulating oil are:

- Insulating oil will be used and handled to minimize risks to human health, property, and the environment.
- Insulating oil will be used and handled according to applicable legislation and codes.
- Insulating oil will be handled and used in ways that prevent release to water or land.
- Insulating oil will not be mixed with other materials.
- Insulating oil containing less than 2 ppm PCBs will not be mixed with insulating oil containing higher levels of PCBs.
- Waste insulating oil will be recycled as much as possible.
- Waste insulating oil that cannot be recycled will be disposed in an environmentally sound manner.

Other sections of this best management practice provide more information for various specific situations.

Environmental Considerations

Hazards	Spills or leaks can cause: <ul style="list-style-type: none"> • environmental damage • non-compliance with environmental legislation
Avoidance of Mixing	Avoid mixing insulating oil with other materials so it does not become contaminated and regulated. Dilution of contaminated oil with fresh oil or other materials to avoid regulation is expressly prohibited.
Transport of Dangerous Goods Regulations	Class 1 or 2 oil is not dangerous goods as defined by the federal Transportation of Dangerous Goods (TDG) Regulations and is not regulated when transported. Waste insulating oil may be TDG regulated if it contains: <ul style="list-style-type: none"> • materials such as paint thinners, solvents, or gasoline, or • more than 50 ppm PCBs This Environmental Best Management Practice does not apply to insulating oil containing more than 50 ppm PCBs – see PCB EBMP

Environmental Management Act and Regulations	Waste insulating oil is hazardous waste and is regulated under the BC <i>Environmental Management Act</i> and the BC <i>Hazardous Waste Regulation</i> . Under the <i>Spill Reporting Regulation</i> , spills of insulating oil more 100 L must be reported.
Fisheries Act and Soil Reporting Regulation	Under the federal <i>Fisheries Act</i> , any spill of insulating oil to fish-bearing waters must be reported to the Department of Fisheries and Oceans. Under the BC <i>Spill Reporting Regulation</i> , spills of insulating oil more 100 L must be reported to the BC Provincial Emergency Program.

Purchasing

Specifications	Purchase Class 1 or 2 oil meeting BC Hydro specifications.
Quantities'	Purchase minimum quantities of Class 1 or 2 oil necessary for use and inventory requirements (to minimize storage requirements). Note: Purchasing Class 1 oil from the Oil Management Department may be helpful in reducing site storage of oil because: <ul style="list-style-type: none"> • Oil Management Department can supply in large or small quantities as required • oil found to be in excess of requirements can be returned
Grade	Purchase Class 2 oil from the Oil Management Department, wherever applications allow use of Class 2 oil.

Transporting

Transporting Class 1 or 2 Oil In Containers

Note: This section also applies to empty containers

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	Have an oil spill kit available in case leak/spill response is required. Ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered).

PCBs Less Than 50 ppm	<p>Ensure that insulating oil contains less than 50 ppm PCBs – that is:</p> <ul style="list-style-type: none"> • Class 1 or 2 oil in unopened containers from the manufacturer/refiner, or • with test records showing less than 50 ppm <p>If testing is required, see Testing for PCBs.</p>
Condition and Leak Check	<p>Check that containers are in good condition and suitable for transport – that is:</p> <ul style="list-style-type: none"> • if using barrels, having closed, non-removable heads (ring/open-top barrels are not suitable for liquids) • not leaking • not bulging or overfilled (especially important when filled in cold weather) • not significantly rusted, dented, or damaged (steel containers) • not cracked or brittle as a result of exposure to sunlight (plastic containers) <p>If unsound, unsuitable, or overfilled containers are found:</p> <ul style="list-style-type: none"> • use an overpack drum to contain the unsound container, or transfer insulating oil to a suitable container – see Transferring Insulating Oil • see Spill Response for clean-up of any leakage
Closure Check	<p>Check to ensure that all openings on all containers are properly closed – that is:</p> <ul style="list-style-type: none"> • any gaskets or o-rings necessary for sealing are in place • any caps or bolted covers are tight • any valves are closed and locked or plugged or capped
Packaging	<p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead – do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (for example, sharp edges or containers of corrosive liquid such as battery acid, in case they should leak) <p>Preferred packaging for barrels is strapped together and strapped to pallets in good condition, provided pallets can be safely handled at both shipping and receiving locations.</p>

Labels	Label containers in a weather-resistant form if this has not already been done.
Documentation	Complete a bill of lading for the shipment.

Shipping: Loading

The shipper is responsible for the following:

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Have an oil spill kit available in case leak/spill response is required.</p> <p>Ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered).</p> <p>Check to ensure that the carrier has an oil spill kit and a copy of the Spill Response Card  on the truck.</p>
Proper Equipment and Techniques	Use proper equipment and techniques designed to handle and load the containers safely – see Loading and Unloading of Trucks .
Weight Distributions	Distribute the weight and size of the shipment equally to balance the load as instructed by the carrier.
Accessibility	Ensure the accessibility of the shipment for safe manual and mechanical unloading.
Check Against Bill of Lading	During loading, check to ensure that the containers loaded match the descriptions and quantities given on the bill of lading.
PCB Test Results	Give the carrier a copy of any PCB test results for the oil if these are available.
Load Safe and Secure	<p>Check to ensure that:</p> <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: Accepting

The carrier is responsible for the following:

Precautions	Have an oil spill kit and a copy of the spill response card on the truck in case leak/spill response is required in transit.
Label Check	Check that containers are labeled in a weather-resistant form.
Condition Check	<p>Check that containers are in good condition and suitable for transport – that is:</p> <ul style="list-style-type: none"> • if barrels are being used, that these have closed, non-removable heads (ring/open-top barrels are not suitable for liquids) • not leaking • not bulging • not significantly rusted, dented, or damaged (steel containers) • not cracked or brittle as a result of exposure to sunlight (plastic containers) <p>Do not accept any unsuitable or bulging containers, or any unsound containers unless fully contained in an overpack.</p>
Closure Check	<p>Check to ensure that all openings on all containers are properly closed – that is:</p> <ul style="list-style-type: none"> • any caps or bolted covers are tight • no gaskets or o-rings necessary for sealing are obviously missing or improperly seated • any valves are closed and locked, plugged, or capped
Packaging Check	Check to ensure that any packaging (for example, pallets or strapping) is in good condition for transport.
Acceptance	<p>Accept the shipment for transport based on the above checks and have it loaded.</p> <p>If rejecting the shipment, explain the reasons to the shipper.</p>
Check Against Bill of Lading	During loading, check to ensure that the containers loaded match the descriptions and quantities given on the bill of lading.
PCB Test Results	Obtain a copy of any PCB test results for the oil if these are available.
Load Safe and Secure	<p>Check to ensure that:</p> <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load

	<ul style="list-style-type: none"> no other items being carried could shift and damage or puncture the load
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Carrying: In Transit

The carrier is responsible for the following

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.						
Spill Reporting – Verbal, Internal	<p>Report any spill involving Class 1 or 2 oil in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> work leader or manager, and owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> BC Hydro person arranging the transport employer, and owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 30%;">Edie Thome</td> <td style="width: 30%;">Tel. 604.528.3419</td> <td style="width: 30%;">Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
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Spill Reporting – Verbal, External	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and local municipality or Regional District if the spill is to a source of drinking water 						

	<p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L:</p> <p>For spills less than 100 L to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
<p>Spill Reporting</p>	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Receiving

The receiver is responsible for the following:

<p>Safety</p>	<p>Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.</p>
<p>Precautions</p>	<p>Have an oil spill kit available in case leak/spill response is required.</p> <p>Ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered).</p>
<p>Shipment Check</p>	<p>Check to ensure that there is no evidence of leakage.</p> <p>If leaks are found:</p> <ul style="list-style-type: none"> • use an overpack drum to contain the leaking container, or • transfer insulating oil to a sound container – see Transferring Insulating Oil • see Spill Response for clean-up of any leakage

Proper Equipment and Techniques	Use proper equipment and techniques designed to handle and unload the containers safely – see Loading and Unloading of Trucks .
Check Against Bill of Lading	During unloading, check to ensure that the containers unloaded match the descriptions and quantities given on the bill of lading.

Transporting Class 1 or 2 Oil In Bulk

Note: This section also applies to empty containers

Shipping: Loading

The shipper is responsible for the following

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Where possible provide containment with a capacity sufficient to contain a reasonably foreseeable spill.</p> <p>Keep transfer hoses within containment areas to the greatest extent possible.</p> <p>At minimum:</p> <ul style="list-style-type: none"> ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered) have an oil spill kit available in case leak/spill response is required have additional oil-specific sorbents for clean-up after loading <p>Where transport is by road, check that the carrier has an oil spill kit and a copy of the Spill Response Card on the truck.</p>
PCBs Less than 50 ppm	<p>Ensure that the insulating oil to be loaded contains less than 50 ppm PCBs – for example:</p> <ul style="list-style-type: none"> Class 1 or 2 oil direct from the manufacturer/refiner, or with test records showing less than 50 ppm <p>If testing is required, see Testing for PCBs</p> <p>Give the carrier a copy of any PCB test results for the oil if these are available.</p>
Tanker Suitability and Cleanliness	<p>Check that the tanker:</p> <ul style="list-style-type: none"> is in good condition for transport of insulating oil does not contain inappropriate materials or residues (for example, water or dirt) has a reliable means to monitor the level as it is being filled is or can be suitably vented (at least as much

	<p>flow area as the fill line unless specifically designed otherwise)</p> <ul style="list-style-type: none"> • is protected against over-pressure if there is any possibility of the venting being blocked (for example, if tanker dome is left closed) <p>Ensure that the tanker has sufficient capacity to receive the full source volume. If there is not sufficient capacity to receive the full source volume, ensure that there are means to contain an overfill until transfer can be shut down.</p>
Hose Check	<p>Ensure that:</p> <ul style="list-style-type: none"> • transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened, or unduly worn) • fittings are fully inserted into the hoses and are tightly banded • connections and seals are in good condition to give a liquid-tight seal • hoses and lines are connected to transfer from the correct source
Secure Connection	<ul style="list-style-type: none"> • Ensure that the transport unit and transfer hoses are protected from vehicular traffic –use barriers and signs where necessary. • Use hoses with dripless connections where possible. • Minimize the number of connections and use the shortest length of hose necessary. • Secure connections to prevent accidental separation (for example, place a plastic band around camlock levers to prevent them opening). <p>Wrap and secure oil-specific sorbent pads around connections.</p>
Pump Type	<p>If a transfer pump is required, use a pump that:</p> <ul style="list-style-type: none"> • is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over-pressurized • where possible, can blow transfer lines hoses reasonably clear at the end of transfer
Valve Check	<p>Check that on the tanker:</p> <ul style="list-style-type: none"> • any outlets below the intended liquid level are closed and plugged, capped, or locked • any drains are closed and plugged, capped, or locked • there is venting <p>Ensure that:</p> <ul style="list-style-type: none"> • valves on the transfer line are open from the correct source • the source is vented (to prevent drawing a

	vacuum/tank collapse as oil is drained)
Pre-Arranged Emergency Shut-Down Procedures	Pre-arrange with the carrier a procedure and communication system for emergency shut-down of the loading.

During Transfer

Leak and Level Checks	Monitor transfer continuously to ensure that the tanker is not leaking and is not overfilled (especially important when filling in cold weather).
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After Transfer

Empty Hoses	Where possible drain, or use the transfer pump to blow out, the transfer hoses at the end of transfer.
Drip Collection	Use drip pans when breaking connections. Recycle collected drips.
Secure Openings	Close and plug, cap, or lock openings on the source as appropriate. Check that openings on the filled tanker are closed and plugged, capped, or locked as appropriate.
Leak Check	Check the filled tanker for leaks. If leaks are found, see Spill Response
Hose Storage	Cap or self-connect coiled hoses and transfer to contained, secure storage.
Disposal of Used Sorbents	Handle, store, and dispose of any used sorbents as specified in WM-460 .
Documentation	Complete bill of lading, recording quantity loaded.

Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Where possible load within containment with a capacity sufficient to contain a reasonably foreseeable spill.</p> <p>Keep transfer hoses within containment areas to the greatest extent possible.</p> <p>Where transport is by road, have an oil spill kit and a copy of the Spill Response Card in case leak/spill response is required in transit.</p>
PCBs Less Than 50 ppm	<p>Check with the shipper that the insulating oil to be loaded contains less than 50 ppm PCBs.</p> <p>Obtain a copy of any PCB test results for the oil if these are available.</p>

Tanker Suitability and Cleanliness	<p>Ensure that the tanker:</p> <ul style="list-style-type: none"> • is in good condition for transport of insulating oil • does not contain inappropriate materials or residues (for example, water or dirt) • has a reliable means to monitor the level as it is being filled • is or can be suitably vented (at least as much flow area as the fill line unless specifically designed otherwise) • is protected against over-pressure if there is any possibility of the venting being blocked (for example, if tanker dome is left closed) <p>Check that the tanker has sufficient capacity to receive the full source volume. If there is not sufficient capacity to receive the full source volume, check that there are means to contain an overfill until transfer can be shut down.</p>
Hose Check	<p>Check that:</p> <ul style="list-style-type: none"> • transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened or unduly worn) • fittings are fully inserted into the hoses and are tightly banded • connections and seals are in good condition to give a liquid-tight seal
Secure Connection	<ul style="list-style-type: none"> • Check that the transport unit and hoses are protected from vehicular traffic using barriers and signs where necessary. • Check that connections are secured to prevent accidental separation and wrapped with oil-specific sorbent pads.
Pump Type	<p>If a transfer pump is required, check that it is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over pressurized.</p>
Valve Check	<p>Ensure that on the tanker:</p> <ul style="list-style-type: none"> • any outlets below the intended liquid level are closed and plugged, capped, or locked • any drains are closed and plugged, capped, or locked • there is venting
Pre-Arranged Emergency Shut-Down Procedures	<p>Pre-arrange with the shipper a procedure and communication system for emergency shut-down of the loading.</p>

During Transfer

Leak and Level Checks	Monitor transfer continuously to ensure that the tanker is not leaking and is not overfilled (especially important when filling in cold weather).
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After Transfer

Secure Openings	Close and plug, cap, or lock openings on the filled tanker as appropriate.
Leak Check	Check the filled tanker for leaks. If leaks are found, see Spill Response.
Documentation	Check that the bill of lading correctly shows the quantity loaded.

Carrying: In Transit

The carrier is responsible for the following:

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.						
Spill Reporting – Verbal, Internal	<p>Report any spill involving Class 1 or 2 oil in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="630 1539 1382 1644"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
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<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L): (Spill to water includes anything directly connected to water, such as a ditch or storm drain) Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L: For spills less than 100 L to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
<p>Spill Reporting</p>	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in SAP and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Carrying Delivering

The carrier is responsible for the following:

Documentation to Receiver	Give bill of lading, and PCB test results if applicable, to the receiver.
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Preparation for Unloading

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	Where possible unload within containment with a capacity sufficient to contain a reasonably foreseeable spill. Keep transfer hoses within containment areas to the greatest extent possible.
Container Suitability and Cleanliness	Check that the tank or other container to which the oil will be transferred: <ul style="list-style-type: none"> • is in good condition: <ul style="list-style-type: none"> – not significantly rusted, dented, or damaged (steel containers) – not cracked or brittle as a result of exposure to sunlight (plastic containers) • does not contain inappropriate materials or residues (for example, water, dirt or oil containing more than 50 ppm PCBs) • has a reliable means to monitor the level as it is being filled • is or can be suitably vented (at least as much flow area as the fill line unless specifically designed otherwise) • is protected against over-pressure if there is any possibility of the venting being blocked (for example, if there is a valve on the vent or in case of an overfill if the vent is equipped with an air-drier) • has sufficient capacity to receive the full volume from the tanker; if there is not sufficient capacity to receive the full tanker volume, check that there are means to contain an overfill until transfer can be shut down
Hose Check	Check that: <ul style="list-style-type: none"> • transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened, or unduly worn) • fittings are fully inserted into the hoses and are tightly banded • connections and seals are in good condition to give a liquid-tight seal • hoses and lines are connected to transfer to

	the correct receiving tank or other container
Secure Connection	<ul style="list-style-type: none"> • Check that the transport unit and transfer hoses are protected from vehicular traffic using barriers and signs where necessary. • Use hoses with dripless connections where possible. • Minimize the number of connections and use the shortest length of hose necessary. • Secure connections to prevent accidental separation (for example, place a plastic band around camlock levers to prevent them opening). • Wrap and secure oil-specific sorbent pads around connections.
Pump Type	If a transfer pump is required, use a pump that: <ul style="list-style-type: none"> • is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over pressurized • where possible, can blow transfer lines hoses reasonably clear at the end of transfer
Valve Check	Check that on the tank or other container to which the oil will be transferred: <ul style="list-style-type: none"> • any outlets below the intended liquid level are closed and plugged, capped, or locked • any drains are closed and plugged, capped, or locked • there is venting • valves on the transfer line are open to the correct receiving tank or container Ensure that the tanker is vented (to prevent drawing a vacuum/collapse as oil is drained).
Pre-Arranged Emergency Shut-Down Procedures	Pre-arrange with the receiver a procedure and communication system for emergency shut-down of the unloading.

During Transfer

Leak and Level Checks	Monitor transfer continuously to ensure that the receiving tank or other container is not leaking and is not overfilled (especially important when filling in cold weather).
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After Transfer

Empty Hoses	Where possible drain, or use the transfer pump to blow out, the transfer hoses at the end of transfer.
Secure Openings	Close and plug, cap, or lock openings on the tanker as appropriate.

Receiving

The receiver is responsible for the following:

Documentation from Carrier	Obtain the bill of lading, and PCB test results if applicable, from the carrier.
Description and Quantity Check	<p>Inform your supervisor if the description or quantity of the shipment shown on the bill of lading does not match with what was ordered.</p> <p>If the shipment quantity will be determined by difference, record starting value (for example, tanker weight, tank volume, or off-loading meter volume).</p>

Preparation for Unloading

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Where possible provide containment with a capacity sufficient to contain a reasonably foreseeable spill.</p> <p>Keep transfer hoses within containment areas to the greatest extent possible.</p> <p>At minimum:</p> <ul style="list-style-type: none"> • ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered) • have an oil spill kit available in case leak/spill response is required • have additional oil-specific sorbents for clean-up after unloading
Container Suitability and Cleanliness	<p>Ensure that the receiving tank:</p> <ul style="list-style-type: none"> • is in good condition: <ul style="list-style-type: none"> – not significantly rusted, dented, or damaged (steel containers) – not cracked or brittle as a result of exposure to sunlight (plastic containers) • does not contain inappropriate materials or residues (for example, water or dirt or oil containing more than 50 ppm PCBs) • has a reliable means to monitor the level as it is being filled • is or can be suitably vented (at least as much flow area as the fill line unless specifically designed otherwise) • is protected against over-pressure if there is any possibility of the venting being blocked (for example, if there is a valve on the vent or in case of an overflow if the vent is equipped with an air-drier)

	<ul style="list-style-type: none"> • has sufficient capacity to receive the full tanker volume; if there is not sufficient capacity to receive the full tanker volume, ensure that there are means to contain an overfill until transfer can be shut down
Hose Check	Ensure that: <ul style="list-style-type: none"> • transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened, or unduly worn) • fittings are fully inserted into the hoses and are tightly banded • connections and seals are in good condition to give a liquid-tight seal • hoses and lines are connected to transfer to the correct receiving tank
Secure Connection	<ul style="list-style-type: none"> • Ensure that the transport unit and transfer hoses are protected from vehicular traffic—use barriers and signs where necessary. • Use hoses with dripless connections where possible. • Minimize the number of connections and use the shortest length of hose necessary. • Secure connections to prevent accidental separation (for example, place a plastic band around camlock levers to prevent them opening). • Wrap and secure oil-specific sorbent pads around connections.
Pump Type	If a transfer pump is required, use a pump that: <ul style="list-style-type: none"> • is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over-pressurized • where possible, can blow transfer lines hoses reasonably clear at the end of transfer
Valve Check	Ensure that on the receiving tank: <ul style="list-style-type: none"> • any outlets below the intended liquid level are closed and plugged, capped, or locked • any drains are closed and plugged, capped, or locked • there is venting • valves on the transfer line are open to the correct receiving tank Check that the tanker is vented (to prevent drawing a vacuum/collapse as oil is drained).
Pre-Arranged Emergency Shut-Down Procedures	Pre-arrange with the carrier a procedure and communication system for emergency shut-down of the unloading.

During Transfer

Leak and Level Checks	Monitor transfer continuously to ensure that the receiving tank is not leaking and is not overfilled (especially important when filling in cold weather).
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After Transfer

Empty Hoses	Where possible drain, or use the transfer pump to blow out, the transfer hoses at the end of transfer.
Drip Collection	Use drip pans when breaking connections. Recycle collected drips.
Secure Openings	Close and plug, cap, or lock openings on the receiving tank as appropriate.
Leak Check	Check the filled tank for leaks. If leaks are found, see Spill Response  .
Hose Storage	Cap or self-connect coiled hoses and transfer to contained, secure storage.
Disposal of Used Sorbents	Handle, store, and dispose of any used sorbents as specified in WM-460  .
Quantity Check	<p>If the shipment quantity was being determined by difference, record ending value (for example, tanker weight, tank volume, or off-loading meter volume), and calculate the shipment quantity.</p> <p>Inform your supervisor if the quantity received is not as expected from the bill of lading.</p>

Transporting Waste Insulating Oil In Containers

Contact the Oil Management Department Support Services Administrator if unsure whether to transport for recycling or disposal. If any part of the transport is outside of Canada, requirements are different from those provided below. Call the [MMBU Environmental Technical Specialist](#) for assistance.

Note: this section also applies to empty containers

Shipping: Planning

The shipper is responsible for the following:

Containment Check	<p>Check test results to confirm that the waste insulating oil contains less than 50 ppm PCBs. If the waste insulating oil contains more than 50 ppm PCBs, see PCB EBMP.</p> <p>If the waste insulating oil has not been tested for PCBs, see Testing for PCBs.</p> <p>If contamination with other regulated materials is suspected, see Testing Waste Oil or contact your environmental services group</p>
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Registration of Shipping and Receiving Sites	<p>The shipping and receiving sites do not have to be registered if the amount of waste oil is less than the 5,000 L. In this case, see the next section Shipments to the Oil Management Department.</p> <p>The shipping and receiving sites must be registered if the amount of waste oil is more than the 5,000 L. In this case, go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • waste oil - liquid is registered • the amount registered is more than the amount of waste oil being shipped <p>If the receiving site is not a BC Hydro site, contact the MMBU Environmental Technical Specialist or the site operator to get their registration or permit number.</p> <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Shipments to the Oil Management Department	<p>Contact the Oil Management Department Support Services Administrator and follow Oil Management Department procedures—see Oil Management Department Information for Clients if necessary.</p>
All Other Shipments	<p>Contact the MMBU Environmental Technical Specialist so that:</p> <ul style="list-style-type: none"> • the waste can be properly tracked, and • to get the registration or permit number of the facility that will receive the waste
Hazardous Waste Transport Licence	<p>Before arranging road transport, check whether the carrier will require a Hazardous Waste Transport Licence. See the Hazardous Waste Transport Licence Requirements..</p> <p>If a Hazardous Waste Transport Licence is required, check at the time of arranging transport that the carrier has a valid licence that authorizes carrying of waste oil or petroleum products.</p>

Shipping: Preparing

The shipper is responsible for the following:

Documentation	<p>Use a movement document/manifest if the quantity of waste insulating oil is greater than 210-Lsee Transporting Using a Movement Document Manifest below.</p> <p>Complete a bill of lading for the shipment if a movement document/manifest is not required.</p> <p>Ensure that shipments to the Oil Management Department are accompanied by a Job Plan.</p>
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Precautions	Have an oil spill kit available in case leak/spill response is required. Ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered).
Condition and Leak Check	Check that containers are in good condition and suitable for transport – that is: <ul style="list-style-type: none"> • if using barrels, having closed, non-removable heads (ring/open-top barrels are not suitable for liquids) • not leaking • not bulging or overfilled (especially important when filled in cold weather) • not significantly rusted, dented, or damaged (steel containers) • not cracked or brittle as a result of exposure to sunlight (plastic containers) If unsound, unsuitable, or overfilled containers are found: <ul style="list-style-type: none"> • use an overpack drum to contain the unsound container, or • transfer insulating oil to a suitable container – see Transferring Insulating Oil • see Spill Response for clean-up of any leakage
Closure Check	Check to ensure that all openings on all containers are properly closed – that is: <ul style="list-style-type: none"> • any gaskets or o-rings necessary for sealing are in place • any caps or bolted covers are tight • any valves are closed and locked or plugged or capped
Packaging	Package to: <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead – do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (for example, sharp edges or containers of corrosive liquid such as battery acid, in case they should leak) Preferred packaging for barrels is strapped together and strapped to pallets in good condition, provided pallets can be safely handled at both shipping and receiving locations.
Labels	Ensure that all containers are properly labeled:

	<ul style="list-style-type: none"> • use Oil Management Department labels for containers that will be shipped to Oil Management Department for recycling • use waste labels obtainable from the MMBU Environmental Technical Specialist for all other containers. Waste labels must show: <ul style="list-style-type: none"> – container ID number (for inventory purposes) – contents (for example, waste insulating oil from purging of sample valves) – shipping name (waste oil) – UN (not applicable) – waste origin (site/location where waste was generated) – date of generation (start date if container is filled over time) • if the container was previously used for something else, ensure that any non-applicable labels are removed or obliterated
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Shipping: Paperwork

The shipper is responsible for the following:

Documentation	<p>Use a movement document/manifest if the quantity of waste insulating oil is greater than 210 L – see <i>Transporting Using a Movement Document/Manifest</i> below.</p> <p>Complete a bill of lading for the shipment if a movement document/manifest is not required.</p> <p>Ensure that shipments to the Oil Management Department are accompanied by a Job Plan.</p>
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Transporting Using a Movement Document/Manifest

Consignor (Shipper) Information	<p>Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if necessary.</p> <p>Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID.</p> <p>If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site.</p> <p>Enter "waste oil" for shipping name (or "residue – last contained waste oil", if containers or tanker are empty) and "N/A" for UN number, class, and packing group.</p> <p>Ensure that the movement document/manifest lists all waste oil being shipped, and that emergency contact numbers are filled in.</p>
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	<p>Note: Use a ballpoint pen and press hard so that all six copies are fully readable.</p>
<p>Carrier Information and Signature</p>	<p>Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.</p>
<p>Copies</p>	<ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – retain on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – taken by the carrier • if the shipment is being transported out of BC, photocopy Copy 1 and call the MMBU Environmental Technical Specialist for instructions on where to mail this copy • if the waste is being disposed of without being shipped through MMBU, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
<p>Inventory Update</p>	<p>Update the waste inventory records to show that the waste has been shipped. Include the date the waste was shipped and the movement document/manifest number.</p> <p>Download and use the Hazardous Waste Inventory Form  if necessary. For a guide to filling out this form, see How to Complete a Hazardous Waste Inventory Form .</p>

Shipping: Loading

The shipper is responsible for the following:

<p>Hazardous Waste Transport Licence Check</p>	<p>Examine the carrier's Hazardous Waste Transport Licence unless one is not required. See the Hazardous Waste Transport Licence Requirements.</p>
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	Check to ensure that: <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence authorizes carrying of waste oil or petroleum products • the licence has not expired
Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or Client.
Precautions	Have an oil spill kit available in case leak/spill response is required. Ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered). Check to ensure that the carrier has an oil spill kit and a copy of the Spill Response Card  on the truck.
Proper Equipment and Techniques	Use proper equipment and techniques designed to handle and load the containers or equipment safely – see Loading and Unloading of Trucks .
Weight Distribution	Distribute the weight and size of the shipment equally to balance the load as instructed by the carrier.
Accessibility	Ensure the accessibility of the shipment for safe manual and mechanical unloading
Waste Check	During loading, check to ensure that the containers loaded match the descriptions and quantities given on the movement document/ manifest or bill of lading.
PCB Test Results	Give the carrier a copy of any PCB test results for the oil if these are available.
Load Safe and Secure	Check to ensure that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: Accepting

If any part of the transport is outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance

The carrier is responsible for the following:

Hazardous Waste Transport Licence	Have a valid Hazardous Waste Transport Licence suitable for carrying waste oil or petroleum products, unless one is not required. See the Hazardous Waste Transport Licence Requirements.
Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Have an oil spill kit and a copy of the Spill Response Card on the truck in case leak/spill response is required in transit.</p> <p>Ensure that drains to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered).</p>
Label Check	Check that containers are labeled in a weather-resistant form.
Condition Check	<p>Check that containers are in good condition and suitable for transport – that is:</p> <ul style="list-style-type: none"> ▪ if barrels are being used, that these have closed, non-removable heads (ring/open-top barrels are not suitable for liquids) ▪ not leaking ▪ not bulging ▪ not significantly rusted, dented, or damaged (steel containers) ▪ not cracked or brittle as a result of exposure to sunlight (plastic containers) ▪ Do not accept any unsuitable or bulging containers, or any unsound containers unless fully contained in an overpack
Closure Check	<p>Check to ensure that all openings on all containers are properly closed – that is:</p> <ul style="list-style-type: none"> ▪ any caps or bolted covers are tight ▪ no gaskets or o-rings necessary for sealing are obviously missing or improperly seated ▪ any valves are closed and locked, plugged, or capped
Packaging Check	Check to ensure that any packaging (for example, pallets or strapping) is in good condition for transport
Acceptance	<p>Accept the shipment for transport based on the above checks and have it loaded.</p> <p>If a movement document/manifest is required (ask the shipper), complete Part B (see How to Complete Part B of a Movement Document/Manifest if necessary) and</p> <ul style="list-style-type: none"> ▪ sign all copies. ▪ Return Copies 1 and 2 to the shipper. Take Copies 3 to 6 with the load.

	If rejecting the shipment, explain the reasons to the shipper
Waste Check	During loading, check to ensure that the containers loaded match the descriptions and quantities given on the movement document/ manifest or bill of lading
PCB Test Results	Obtain a copy of any PCB test results for the oil if these are available
Load Safe and Secure	<p>Check to ensure that:</p> <ul style="list-style-type: none"> ▪ containers are upright ▪ the load will not shift during transport <ul style="list-style-type: none"> ▪ in a trailer, the load is strapped or tied to both walls and floor ▪ on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides ▪ in a pickup, the load is strapped to the sides of the box ▪ no sharp edges might damage or puncture the load ▪ no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	<p>Keep a copy of the shipping documentation in the place specified by the TDG Regulations. See Document Locations if needed.</p> <p>If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. See Hazardous Waste Transport Licence Requirements if necessary.</p> <p>Note: Be careful picking up small amounts of waste insulating oil from different sites. If each amount is less than 210 L, the shipper does not have to provide a movement document/manifest. However, if the total amount of waste oil on the truck at any time is more than 210 L, the carrier must then complete:</p> <ul style="list-style-type: none"> • a "multiple consignors form", and • parts A and B of a movement document/manifest <p>When completing the movement document/manifest for use with a multiple consignors form, enter the word "multiple" for the company name and shipping site address in Part A. See How to Complete Part A of a Movement Document/Manifest for further help if needed. The carrier must distribute copies of the completed movement document/manifest and multiple consignors form as indicated on the multiple consignors form.</p>
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.
Spill Response	Follow guidelines on the Spill Response Card  in case of a spill

<p>Spill Reporting – Verbal, Internal</p>	<p>Report any spill involving waste insulating oil in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="634 783 1385 890"> <tr> <td data-bbox="634 783 824 835">Edie Thome</td> <td data-bbox="824 783 1089 835">Tel. 604.528.3419</td> <td data-bbox="1089 783 1385 835">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="634 835 824 890">Lisa Seppala</td> <td data-bbox="824 835 1089 890">Tel. 604.528.2500</td> <td data-bbox="1089 835 1385 890">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene 						

	<ul style="list-style-type: none"> • persons or agencies advised <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L:</p> <p>For spills less than 100 L to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
Spill Reporting	The work leader or manager of the person providing notification of the spill must complete an environmental incident report in SAP and distribute the report as indicated preferably within 24 hours of the spill.

Carrying: Delivering

The carrier is responsible for the following:

Documentation to Receiver	Give to the receiver the documentation for the shipment (Copies 3 to 6 of the movement document/manifest for quantities greater than 210 L, or the bill of lading for quantities less than 210 L), and PCB test results if applicable
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Carrying: Completion of Paperwork

Receiver Information and Signature	If a movement document/manifest was required, have the receiver complete and sign Copies 3 to 6.
Copies	<p>If a movement document/manifest was required:</p> <ul style="list-style-type: none"> • Copy 4 – keep on file for at least two years • Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>

Receiving

The receiver is responsible for the following:

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Have an oil spill kit available in case leak/spill response is required.</p> <p>Ensure that drains or water courses to which spilled oil might lead are protected (for example, equipped with an oil separator/stop or drain opening covered).</p>
Shipment Check	<p>Check to ensure that there is no evidence of leakage.</p> <p>If leaks are found:</p> <ul style="list-style-type: none"> • Use an overpack drum to contain the leading container,

	or <ul style="list-style-type: none"> • Transfer insulating oil to a sound container – see “Transferring Insulating Oil” • See Spill Response for clean-up of any leakage
Proper Equipment and Techniques	Use Proper equipment and techniques designed to handle and unload the containers safety – see Loading and Unloading and Unloading of Trucks.
Check Against Bill of Lading	During unloading, check to ensure that the containers unloaded match the descriptions and quantities given on the bill of lading.

Transporting Waste Insulating Oil in Bulk

If any part of the transport is outside of Canada, requirements are different from those provided below. Call the [MMBU Environmental Technical Specialist](#) for assistance.

Shipping: Planning

The shipper is responsible for the following:

Contaminants Check	Check test results to confirm that the waste insulating oil contains less than 50 ppm PCBs. If the waste insulating oil contains more than 50 ppm PCBs, see PCB EBMP If the waste insulating oil has not been tested for PCBs, see Testing for PCBs. If contamination with other regulated materials is suspected, see Testing Waste Oil or contact Environmental Risk Management.
Registration of Shipping and Receiving Sites	The shipping and receiving sites do not have to be registered if the amount of waste oil is less than the 5,000 L. In this case, see the next section Shipments to the Oil Management Department. The shipping and receiving sites must be registered if the amount of waste oil is more than the 5,000 L. In this case, go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that: <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • waste oil - liquid is registered • the amount registered is more than the amount of waste oil being shipped If the receiving site is not a BC Hydro site, contact the MMBU Environmental Technical Specialist or the site operator to get their registration or permit number. If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.

Shipments to the Oil Management Department	Contact the Oil Management Department Support Services Administrator and follow Oil Management Department procedures – see “Oil Management Department Information for Clients” If necessary.
All Other Shipments	Contact the MMBU Environmental Technical Specialist so that: <ul style="list-style-type: none"> • the waste can be properly tracked, and • to get the registration or permit number of the facility that will receive the waste
Hazardous Waste Transport Licence	Before arranging road transport, check whether the carrier will require a Hazardous Waste Transport Licence. See the Hazardous Waste Transport Licence Requirements. If a Hazardous Waste Transport Licence is required, check at the time of arranging transport that the carrier has a valid licence that authorizes carrying of waste oil or petroleum products.

Shipping: Paperwork

The shipper is responsible for the following:

Documentation	Use a movement document/manifest if the quantity of waste insulating oil is greater than 210 L – see <i>Transporting Using a Movement Document/Manifest</i> below. Complete a bill of lading for the shipment if a movement document/ manifest is not required. Ensure that shipments to the Oil Management Department are accompanied by a Job Plan.
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Shipping: Transporting Using a Movement Document/Manifest

Consignor (Shipper) Information	Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if necessary. Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID. If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/ Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site. Enter "waste oil" for shipping name (or "residue – last contained waste oil", if containers or tanker are empty) and "N/A" for UN number, class, and packing group. Ensure that the movement document/manifest lists all waste oil being shipped, and that emergency contact numbers are filled in. Note: Use a ballpoint pen and press hard so that all six copies are fully readable.
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Carrier Information and Signature	Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.
Copies	<ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 • Note: The Ministry does not accept fax copies. • Copy 2 (green) – retain on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – taken by the carrier • if the shipment is being transported out of BC, photocopy Copy 1 and call the MMBU Environmental Technical Specialist for instructions on where to mail this copy • if the waste is being disposed of without being shipped through MMBU, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist, 12345 - 88th Avenue, Surrey, BC V3W 5Z9 <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
Inventory Update	Update the waste inventory records to show that the waste has been shipped. Include the date the waste was shipped and the movement document/manifest number. Download and use the Hazardous Waste Inventory Form  if necessary. For a guide to filling out this form, see Hazardous Waste Inventory Form  .

Shipping: Loading

The shipper is responsible for the following:

Hazardous Waste Transport Licence Check	Examine the carrier's Hazardous Waste Transport Licence unless one is not required. See Hazardous Waste Transport Licence Requirements. Check to ensure that: <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence
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	<ul style="list-style-type: none"> • the licence authorizes carrying of waste oil or petroleum products • the licence has not expired
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Shipping: Preparation for Loading

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Where possible provide containment with a capacity sufficient to contain a reasonably foreseeable spill.</p> <p>Keep transfer hoses within containment areas to the greatest extent possible.</p> <p>At minimum:</p> <ul style="list-style-type: none"> • ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered) • have an oil spill kit available in case leak/spill response is required • have additional oil-specific sorbents for clean-up after loading <p>Where transport is by road, check that the carrier has an oil spill kit and a copy of the Spill Response Card on the truck.</p>
Tanker Suitability and Cleanliness	<p>Check that the tanker:</p> <ul style="list-style-type: none"> • is in good condition for transport of insulating oil • does not contain inappropriate materials or residues (for example, water or dirt) • has a reliable means to monitor the level as it is being filled • is or can be suitably vented (at least as much flow area as the fill line unless specifically designed otherwise) • is protected against over-pressure if there is any possibility of the venting being blocked (for example, if tanker dome is left closed) <p>Ensure that the tanker has sufficient capacity to receive the full source volume. If there is not sufficient capacity to receive the full source volume, ensure that there are means to contain an overfill until transfer can be shut down.</p>
Hose Check	<p>Ensure that:</p> <ul style="list-style-type: none"> • transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened, or unduly worn) • fittings are fully inserted into the hoses and are tightly banded • connections and seals are in good condition to give a liquid-tight seal

	<ul style="list-style-type: none"> hoses and lines are connected to transfer from the correct source
Secure Connection	<ul style="list-style-type: none"> Ensure that the transport unit and transfer hoses are protected from vehicular traffic – use barriers and signs where necessary. Use hoses with dripless connections where possible. Minimize the number of connections and use the shortest length of hose necessary. Secure connections to prevent accidental separation (for example, place a plastic band around camlock levers to prevent them opening). Wrap and secure oil-specific sorbent pads around connections.
Pump Type	If a transfer pump is required, use a pump that: <ul style="list-style-type: none"> is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over-pressurized where possible, can blow transfer lines hoses reasonably clear at the end of transfer
Valve Check	Check that on the tanker: <ul style="list-style-type: none"> any outlets below the intended liquid level are closed and plugged, capped, or locked any drains are closed and plugged, capped, or locked there is venting Ensure that: <ul style="list-style-type: none"> valves on the transfer line are open from the correct source the source is vented (to prevent drawing a vacuum/tank collapse as oil is drained)
Pre-Arranged Emergency Shut-Down Procedures	Pre-arrange with the carrier a procedure and communication system for emergency shut-down of the loading.

Shipping - During Transfer

Leak and Level Check	Monitor transfer continuously to ensure that the tanker is not leaking and is not overfilled (especially important when filling in cold weather).
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Shipping - After Transfer

Empty Hoses	Where possible drain, or use the transfer pump to blow out, the transfer hoses at the end of transfer.
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Drip Collection	Use drip pans when breaking connections. Recycle collected drips.
Secure Openings	Close and plug, cap, or lock openings on the source as appropriate. Check that openings on the filled tanker are closed and plugged, capped, or locked as appropriate.
Leak Check	Check the filled tanker for leaks. If leaks are found, see Spill Response
Hose Storage	Cap or self-connect coiled hoses and transfer to contained, secure storage.
Disposal of Used Sorbents	Handle, store, and dispose of any used sorbents as specified in WM-460 .
Quantity Loaded	Ensure that the movement document/manifest or bill of lading correctly shows the quantity loaded.

Carrying: Accepting

The carrier is responsible for the following:

Hazardous Waste Transport Licence	Have a valid Hazardous Waste Transport Licence suitable for carrying waste oil or petroleum products, unless one is not required. See the Hazardous Waste Transport Licence Requirements.
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Carrying: Preparation for Loading

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Where possible load within containment with a capacity sufficient to contain a reasonably foreseeable spill.</p> <p>Keep transfer hoses within containment areas to the greatest extent possible.</p> <p>Where transport is by road, have an oil spill kit and a copy of the Spill Response Card in case leak/spill response is required in transit.</p>
PCBs Less Than 50 ppm	<p>Check with the shipper that the insulating oil to be loaded contains less than 50 ppm PCBs.</p> <p>Obtain a copy of any PCB test results for the oil if these are available.</p>
Tanker Suitability and Cleanliness	<p>Ensure that the tanker:</p> <ul style="list-style-type: none"> • is in good condition for transport of insulating oil • does not contain inappropriate materials or residues (for example, water or dirt) • has a reliable means to monitor the level as it is being filled • is or can be suitably vented (at least as much

	<p>flow area as the fill line unless specifically designed otherwise)</p> <ul style="list-style-type: none"> is protected against over-pressure if there is any possibility of the venting being blocked (for example, if tanker dome is left closed) <p>Check that the tanker has sufficient capacity to receive the full source volume. If there is not sufficient capacity to receive the full source volume, check that there are means to contain an overfill until transfer can be shut down.</p>
Hose Check	<p>Check that:</p> <ul style="list-style-type: none"> transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened, or unduly worn) fittings are fully inserted into the hoses and are tightly banded connections and seals are in good condition to give a liquid-tight seal
Secure Connection	<ul style="list-style-type: none"> Check that the transport unit and hoses are protected from vehicular traffic using barriers and signs where necessary. Check that connections are secured to prevent accidental separation and wrapped with oil-specific sorbent pads.
Pump Type	<p>If a transfer pump is required, check that it is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over pressurized.</p>
Valve Check	<p>Ensure that on the tanker:</p> <ul style="list-style-type: none"> any outlets below the intended liquid level are closed and plugged, capped, or locked any drains are closed and plugged, capped, or locked there is venting
Pre-Arranged Emergency Shut-Down Procedures	<p>Pre-arrange with the shipper a procedure and communication system for emergency shut-down of the loading.</p>

Carrying: During Transfer

Leak and Level Checks	<p>Monitor transfer continuously to ensure that the tanker is not leaking and is not overfilled (especially important when filling in cold weather).</p>
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Carrying: After Transfer

Secure Openings	<p>Close and plug, cap, or lock openings on the filled tanker as appropriate.</p>
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Leak Check	Check the filled tanker for leaks. If leaks are found, see Spill Response.
Quantity Loaded	Check that the movement document/manifest correctly shows the quantity loaded

Carrying: In Transit

The carrier is responsible for the following

Location of Documents	<p>Keep a copy of the shipping documentation in the place specified by the TDG Regulations. See Document Locations if needed.</p> <p>If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. See Hazardous Waste Transport Licence Requirements if necessary.</p> <p>Note: Be careful picking up small amounts of waste insulating oil from different sites. If each amount is less than 210 L, the shipper does not have to provide a movement document/manifest. However, if the total amount of waste oil on the truck at any time is more than 210 L, the carrier must then complete:</p> <ul style="list-style-type: none"> • a "multiple consignors form", and • parts A and B of a movement document/manifest <p>When completing the movement document/manifest for use with a multiple consignors form, enter the word "multiple" for the company name and shipping site address in Part A. See How to Complete Part A of a Movement Document/Manifest for further help if needed. The carrier must distribute copies of the completed movement document/manifest and multiple consignors form as indicated on the multiple consignors form.</p>
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.
Spill Response	Follow guidelines on the Spill Response Card  in case of a spill.
Spill Reporting – Verbal, Internal	<p>Report any spill involving waste insulating oil in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle

	<p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="634 344 1385 449"> <tr> <td data-bbox="634 344 824 394">Edie Thome</td> <td data-bbox="824 344 1089 394">Tel. 604.528.3419</td> <td data-bbox="1089 344 1385 394">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="634 394 824 449">Lisa Seppala</td> <td data-bbox="824 394 1089 449">Tel. 604.528.2500</td> <td data-bbox="1089 394 1385 449">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L:</p> <p>For spills less than 100 L to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>						
<p>Spill Reporting</p>	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in SAP and distribute the report as indicated, preferably within 24</p>						

	hours of the spill.
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Carrying: Delivering

The carrier is responsible for the following

Documentation to Receiver	Give bill of lading, and PCB test results if applicable, to the receiver.
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Carrying: Preparation for Unloading

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	<p>Where possible unload within containment with a capacity sufficient to contain a reasonably foreseeable spill.</p> <p>Keep transfer hoses within containment areas to the greatest extent possible.</p>
Container Suitability and Cleanliness	<p>Check that the tank or other container to which the oil will be transferred:</p> <ul style="list-style-type: none"> • is in good condition: <ul style="list-style-type: none"> ○ not significantly rusted, dented, or damaged (steel containers) ○ not cracked or brittle as a result of exposure to sunlight (plastic containers) • does not contain inappropriate materials or residues (for example, water, dirt, or oil containing more than 50 ppm PCBs) • has a reliable means to monitor the level as it is being filled • is or can be suitably vented (at least as much flow area as the fill line unless specifically designed otherwise) • is protected against over-pressure if there is any possibility of the venting being blocked (for example, if there is a valve on the vent or in case of an overfill if the vent is equipped with an air-drier) • has sufficient capacity to receive the full volume from the tanker; if there is not sufficient capacity to receive the full tanker volume, check that there are means to contain an overfill until transfer can be shut down
Hose Check	<p>Check that:</p> <ul style="list-style-type: none"> • transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened, or unduly worn) • fittings are fully inserted into the hoses and are tightly banded • connections and seals are in good condition to give a liquid-tight seal

	<ul style="list-style-type: none"> hoses and lines are connected to transfer to the correct receiving tank or other container
Secure Connection	<ul style="list-style-type: none"> Check that the transport unit and transfer hoses are protected from vehicular traffic using barriers and signs where necessary. Use hoses with dripless connections where possible. Minimize the number of connections and use the shortest length of hose necessary. Secure connections to prevent accidental separation (for example, place a plastic band around camlock levers to prevent them opening). <p>Wrap and secure oil-specific sorbent pads around connections.</p>
Pump Type	<p>If a transfer pump is required, use a pump that:</p> <ul style="list-style-type: none"> is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over-pressurized where possible, can blow transfer lines hoses reasonably clear at the end of transfer
Valve Check	<p>Check that on the receiving tank:</p> <ul style="list-style-type: none"> any outlets below the intended liquid level are closed and plugged, capped, or locked any drains are closed and plugged, capped, or locked there is venting valves on the transfer line are open to the correct receiving tank <p>Ensure that the tanker is vented (to prevent drawing a vacuum/collapse as oil is drained).</p>
Pre-Arranged Emergency Shut-Down Procedures	<p>Pre-arrange with the receiver a procedure and communication system for emergency shut-down of the unloading.</p>

Carrying: During Transfer

Leak and Level Checks	<p>Monitor transfer continuously to ensure that the receiving tank is not leaking and is not overfilled (especially important when filling in cold weather).</p>
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Carrying: After Transfer

Empty Hoses	<p>Where possible drain, or use the transfer pump to blow out, the transfer hoses at the end of transfer.</p>
Secure Openings	<p>Close and plug, cap, or lock openings on the tanker as appropriate.</p>

Carrying: Completion of Paperwork

Receiver Information and Signature	<p>Have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.</p>
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<p>Copies</p>	<ul style="list-style-type: none"> • Copies 3, 5, and 6 – give to the receiver • Copy 4 – keep on file for at least two years <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p> <p>Note: If the tanker is transported empty but without being cleaned, amend Copy 4 by adding the words "Residue—last contained" and crossing out the quantity. Keep Copy 4 with the tanker until it is refilled or cleaned.</p>
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Receiving

The receiver is responsible for the following:

<p>Documentation from Carrier</p>	<p>Get Copies 3 to 6 of the movement document/manifest, and PCB test results if applicable, from the carrier.</p> <p>Inform your supervisor so that appropriate authorities can be notified if there is no movement document/manifest.</p>
<p>Authorization for Receiving Hazardous Waste</p>	<p>If the waste being received is less than 5,000 L, the receiving site does not have to be registered. In this case, see the next section on Receiving Check.</p> <p>If the waste being received is more than 5,000 L, the receiving site must be registered. In this case, go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the receiving site is on the list • waste oil - liquid is registered • the amount registered is more than the amount of waste oil being received <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
<p>Receiving Check</p>	<p>Inform your supervisor so that the appropriate authorities can be notified if:</p> <ul style="list-style-type: none"> • the description on the movement document/manifest does not match the shipment, or • the amount shown on the movement document/manifest is not within five percent of the shipment amount <p>If the shipment amount will be determined by difference, record starting value (for example, tanker weight, tank volume, or off-loading meter volume).</p>

Receiving: Preparation for Unloading

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or client.
Precautions	Where possible provide containment with a capacity sufficient to contain a reasonably foreseeable spill. Keep transfer hoses within containment areas to the greatest extent possible. At minimum: <ul style="list-style-type: none"> • ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered) • have an oil spill kit available in case leak/spill response is required have additional oil-specific sorbents for clean-up after unloading
Container Suitability and Cleanliness	Ensure that the receiving tank or container: <ul style="list-style-type: none"> • is in good condition: <ul style="list-style-type: none"> – not significantly rusted, dented, or damaged (steel containers) – not cracked or brittle as a result of exposure to sunlight (plastic containers) • does not contain inappropriate materials or residues (for example, water, dirt, or oil containing more than 50 ppm PCBs) • has a reliable means to monitor the level as it is being filled • is or can be suitably vented (at least as much flow area as the fill line unless specifically designed otherwise) • is protected against over-pressure if there is any possibility of the venting being blocked (for example, if there is a valve on the vent or in case of an overfill if the vent is equipped with an air-drier) • has sufficient capacity to receive the full tanker volume; if there is not sufficient capacity to receive the full tanker volume, ensure that there are means to contain an overfill until transfer can be shut down
Hose Check	Ensure that: <ul style="list-style-type: none"> • transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened, or unduly worn) • fittings are fully inserted into the hoses and are tightly banded • connections and seals are in good condition to give a liquid-tight seal • hoses and lines are connected to transfer to

	the correct receiving tank
Secure Connection	<ul style="list-style-type: none"> • Ensure that the transport unit and transfer hoses are protected from vehicular traffic—use barriers and signs where necessary. • Use hoses with dripless connections where possible. • Minimize the number of connections and use the shortest length of hose necessary. • Secure connections to prevent accidental separation (for example, place a plastic band around camlock levers to prevent them opening). • Wrap and secure oil-specific sorbent pads around connections.
Pump Type	If a transfer pump is required, use a pump that: <ul style="list-style-type: none"> • is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over-pressurized • where possible, can blow transfer lines hoses reasonably clear at the end of transfer
Valve Check	Ensure that on the receiving tank: <ul style="list-style-type: none"> • any outlets below the intended liquid level are closed and plugged, capped, or locked • any drains are closed and plugged, capped, or locked • there is venting • valves on the transfer line are open to the correct receiving tank Check that the tanker is vented (to prevent drawing a vacuum/collapse as oil is drained).
Pre-Arranged Emergency Shut-Down Procedures	Pre-arrange with the carrier a procedure and communication system for emergency shut-down of the unloading.

Receiving: During Transfer

Leak and Level Checks	Monitor transfer continuously to ensure that the receiving tank is not leaking and is not overfilled (especially important when filling in cold weather).
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Receiving: After Transfer

Empty Hoses	Where possible drain, or use the transfer pump to blow out, the transfer hoses at the end of transfer.
Drip Collection	Use drip pans when breaking connections. Recycle collected drips.

Secure Openings	Close and plug, cap, or lock openings on the receiving tank as appropriate.
Leak Check	Check the filled tank for leaks. If leaks are found, see Spill Response  .
Hose Storage	Cap or self-connect coiled hoses and transfer to contained, secure storage.
Receiving Check	<p>If the shipment amount was being determined by difference, record ending value (for example, tanker weight, tank volume, or off-loading meter volume), and calculate the shipment amount.</p> <p>Inform your supervisor so that the appropriate authorities can be notified if the amount shown on the movement document/manifest is not within five percent of the amount received.</p>

Receiving: Paperwork

The receiver is responsible for the following:

Completion of Movement Document/Manifest Part C	<p>Complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if necessary.</p> <p>Enter BCG00122 as the Receiver/Consignee Registration No/Provincial ID</p>
Copies	<ul style="list-style-type: none"> • Copy 3 – mail within three days to: <p>Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1</p> • Copy 4 – return to the carrier • Copy 5 – retain on file for at least two years • Copy 6 – mail to the consignor <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
Inventory Update	<p>Update waste inventory records to show the amount of waste oil received. Include the date the waste was received and the movement document/manifest number.</p> <p>Download and use the Hazardous Waste Inventory Form  if necessary. For a guide to filling out this form, see How to Complete a Hazardous Waste Inventory Form .</p>

Transporting Empty Containers

Transport empty containers using the same precautions as used for full ones, unless the containers have been proven to be truly empty. This is because containers typically

contain residual oil when emptied. If these containers are not properly closed, or become damaged, there is a significant risk of leakage or spillage during transport.

See as applicable:

- Class 1 or 2 Oil
- Waste Insulating Oil

Storage

Storage of Class 1 or 2 Oil

Containers	Ensure that containers for Class 1 or 2 oil are: <ul style="list-style-type: none"> • compatible with the oil • in good condition: <ul style="list-style-type: none"> – not significantly rusted, dented, or damaged (steel containers) – not cracked or brittle as a result of exposure to sunlight (plastic containers) • closed during storage, using leak-tight bungs and seals • handled, stored, or transported so as not to cause leaks or ruptures
Containment – More Than 2,000 Litres Stored, or High-Risk Area	Provide containment that is the larger of: <ul style="list-style-type: none"> • 110 percent of the volume of the largest single volume of oil being stored • 25 percent of all the oil being stored in the containment Ensure that any drains within the containment are sealed or plugged. Clean up spills or leaks promptly to minimize contamination of rain or snow that gets into the containment.
Containment – Less Than 2,000 Litres Stored in Low-Risk Area	Provide containment where possible. Clean up spills or leaks promptly to minimize contamination of rain or snow that gets into the containment. Do not store oil near drains or water courses. If this cannot be avoided, block or seal drains until the oil can be moved.
Draining Contained Areas	Discharge contained areas through an oil-water separator if possible. If no oil-water separator is available, recover as much free floating oil as possible, and then use oil-specific sorbents to remove any surface sheen before discharging water.
Storage Location	Store containers of Class 1 or 2 oil away from traffic, in a designated area. If possible, store containers of Class 1 or 2 oil under cover to protect them from the weather. Protect all containers of Class 1 or 2 oil stored outdoors:

	<ul style="list-style-type: none"> • using barrel covers, or • covered with a UV-resistant nylon or polypropylene tarpaulin <p>Cover containers in containment trays with a tarpaulin that extends over the entire containment tray to prevent rain or snow from filling up the containment.</p>
Labeling	<p>Label containers in a weather-resistant form if this has not already been done.</p> <p>If the containers were previously used for something else, ensure that any non-applicable labels are removed or obliterated.</p>
Storage Arrangement	<p>Ensure that Class 1 or 2 oil is stored:</p> <ul style="list-style-type: none"> • separate from waste or incompatible materials (for example, oxidizers, corrosives, and so on) • with any drain or sample valves below the oil level plugged or locked • with each storage area identified by signs • if using any racking, shelving, or pallets, with these: <ul style="list-style-type: none"> – in good condition – large enough so that containers do not hang over edges – adequate for the weight of the stored materials • with labels outward • with containers upright if possible, or using barrel cradles or containment trays if horizontal storage is necessary • arranged to allow for easy leak inspection (for example, provide aisle space between containers or pallets, and elevate off the floor) • not more than two high for palletized barrels
Precautions	<p>Have an oil spill kit available in case leak/spill response is required.</p>
Restricted Access	<p>Restrict site access during non-working hours.</p>
Inspections	<p>Inspect the storage facility at least monthly. Include the following in the inspection:</p> <ul style="list-style-type: none"> • inspect pallets for damage • check containers containing Class 1 or 2 oil for leaks or damage—if problems are found: <ul style="list-style-type: none"> – use an overpack drum to contain the leaking container, or – transfer insulating oil to a sound container—see Transfers of Insulating Oil – see Spill Response  for clean-up of any leakage • check for, and if found remove, incompatible materials in the storage area (for example,

	fuels, oxidizers, corrosives, and so on) <ul style="list-style-type: none"> • document the inspection and report the findings
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Storage of Waste Insulated Oil

Containers	Ensure that containers of waste are: <ul style="list-style-type: none"> • made of or lined with materials that are compatible with the oil • in good condition: <ul style="list-style-type: none"> – not significantly rusted, dented, or damaged (steel containers) – not cracked or brittle as a result of exposure to sunlight (plastic containers) • closed during storage, using leak-tight bungs and seals • handled, stored, or transported so as not to cause leaks or ruptures
Containment – More Than 2,000 Litres Stored, or High-Risk Area	Provide containment that is the larger of: <ul style="list-style-type: none"> • 110 percent of the volume of the largest single volume of oil being stored • 25 percent of all the oil being stored in the containment Ensure that any drains within the containment are sealed or plugged. Clean up spills or leaks promptly to minimize contamination of rain or snow that gets into the containment.
Containment – Less Than 2,000 Litres Stored in Low-Risk Area	Provide containment where possible. Clean up spills or leaks promptly to minimize contamination of rain or snow that gets into the containment. Do not store oil near drains or water courses. If this cannot be avoided, block or seal drains until the oil can be moved.
Draining Contained Areas	Discharge contained areas through an oil-water separator if possible. If no oil-water separator is available, recover as much free floating oil as possible, and then use oil-specific sorbents to remove any surface sheen before discharging water.
Storage Location	Store containers of waste insulating oil: <ul style="list-style-type: none"> • away from traffic, in a designated area protected from the weather, and from freezing if the waste contains water
Labeling	Ensure that all containers are properly labeled: <ul style="list-style-type: none"> • use Oil Management Department labels for containers that will be shipped to the Oil Management Department for recycling

	<ul style="list-style-type: none"> • use waste labels obtainable from the MMBU Environmental Technical Specialist for all other containers. Waste labels must show: <ul style="list-style-type: none"> – container ID number (for inventory purposes) – contents (for example, waste insulating oil from purging of sample valves) – shipping name (waste oil) – UN (not applicable) – waste origin (site/location where waste was generated) – date of generation (start date if container is filled over time) <p>if the container was previously used for something else, ensure that any non-applicable labels are removed or obliterated</p>
<p>Storage Arrangement</p>	<p>Ensure that waste insulating oil is stored:</p> <ul style="list-style-type: none"> • separate from incompatible materials (for example, oxidizers, corrosives, and so on) • with any drain or sample valves below the oil level plugged or locked • with each storage area identified with signs • if using any racking, shelving, or pallets, with these: <ul style="list-style-type: none"> – in good condition – large enough so that containers do not hang over edges – adequate for the weight of the stored materials • with labels outward • with containers upright if possible, or using barrel cradles or containment trays if horizontal storage is necessary • to allow for easy leak inspection (for example, provide aisle space between containers or pallets, and elevate off the floor) • not more than two high for palletized barrels
<p>Precautions</p>	<p>Have an oil spill kit available in case leak/spill response is required.</p>
<p>Restricted Access</p>	<p>Restrict site access during non-working hours.</p>

Administrative Requirements

<p>Minimize Storage Quantities</p>	<p>Arrange for regular disposal or recycling to keep the stored quantities of waste insulating oil less than 5,000 L.</p> <p>Note: All requirements of the <i>Hazardous Waste Regulation</i> apply to quantities of waste insulating oil more than 5,000 L that are stored for more than 4 days. Contact the MMBU Environmental Technical Specialist for assistance.</p>
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<p>Inventory</p>	<p>Maintain an inventory of stored waste insulating oil on site at all times. Record the following information for each container or tank as applicable:</p> <ul style="list-style-type: none"> • container or tank ID number • date received/placed in storage • date removed from storage/shipped • quantity in kilograms or litres • contents of the container or tank, including the shipping name • location of the container or tank within the facility • for wastes received or shipped, the movement document/manifest number • for wastes treated or destroyed, the number of the certificate of processing or destruction <p>Download and use the Hazardous Waste Inventory Form  if necessary. For a guide to filling out this form, see How to Complete a Hazardous Waste Inventory Form .</p> <p>Retain the inventory records on site for at least two years following removal of the wastes from the site.</p>
<p>Inspections</p>	<p>Inspect the storage facility at least monthly. Include the following in the inspection:</p> <ul style="list-style-type: none"> • inspect pallets for damage • check containers containing waste insulating oil for leaks or damage—if problems are found: <ul style="list-style-type: none"> – use an overpack drum to contain the leaking container, or transfer insulating oil to a sound container—see Transfers of Insulating Oil – see Spill Response  for clean-up of any leakage • check that adjacent drains, if any, are blocked or sealed • check for, and if found remove, incompatible materials in the storage area (for example, fuels, oxidizers, corrosives, and so on) • document the inspection and report the findings

Temporary Storage of Insulating Oil

Store insulating oil on a temporary basis using the same precautions as used for longer term storage, except:

- where the oil is in transit, or
- in extraordinary circumstances approved by the Business Unit Environmental Manager

This is because temporary storage is likely to occur in the course of active operations (for example, filling and draining equipment, or barrels being moved to and from a storage location by fork truck), where the risks of a leak or spill are greater.

See as applicable:

- Class 1 or 2 Oil
- Waste Insulating Oil

Using Insulating Oil

For use in oil-filled equipment, see Oil-Filled Equipment.

Preparation

Safety	Handle insulating oil as per the applicable occupational health and safety standards for your Business Group or Client.
Containment	<p>Where possible provide containment with a capacity equal to 110 percent of the container being filled.</p> <p>Keep transfer hoses within containment areas to the greatest extent possible.</p> <p>At minimum:</p> <ul style="list-style-type: none"> • ensure that drains or water courses to which spilled oil might leak are protected (for example, equipped with an oil separator/stop or drain opening covered) • have an oil spill kit available in case leak/spill response is required • have additional oil-specific sorbents for clean-up after loading
Container Suitability and Cleanliness	<p>Ensure that the barrel, tank, tanker, equipment, or other container to which the oil will be transferred:</p> <ul style="list-style-type: none"> • is protected from vehicular traffic – use barriers and signs where necessary • is in good condition – that is: <ul style="list-style-type: none"> – not significantly rusted, dented, or damaged (steel containers) – not cracked or brittle as a result of exposure to sunlight (plastic containers) – has caps, covers, or bungs, and gaskets or seals that can be closed leak-tight • does not contain inappropriate materials or residues (for example, water or dirt) • has a reliable means to monitor the level as it is being filled • has a suitably sized vent (at least as much flow area as the fill line unless specifically designed otherwise) • is protected against over-pressure if there is any possibility of the vent being blocked (for example, if there is a valve on the vent or in

	<p>case of an overfill if the vent is equipped with an air-drier)</p> <ul style="list-style-type: none"> • has sufficient capacity to receive the full source volume; if there is not sufficient capacity to receive the full source volume, ensure that there are means to contain an overfill until transfer can be shut down
Hose Check	<p>Ensure that:</p> <ul style="list-style-type: none"> • transfer hoses are intended for use with petroleum products and are in good condition (not kinked, flattened, or unduly worn) • fittings are fully inserted into hose and are tightly banded • connections and seals are in good condition to give a liquid-tight seal • hoses and lines are connected to transfer from the correct source
Secure Connection	<ul style="list-style-type: none"> • Ensure hoses are protected from vehicular traffic-use barriers and signs where necessary. • Use hoses with dripless connections where possible. • Minimize the number of connections and use the shortest length of hose necessary. • Secure connections to prevent accidental separation (for example, place a plastic band around camlock levers to prevent them opening). • Wrap and secure oil-specific sorbent pads around connections.
Pump Type	<p>If a transfer pump is required, use a pump that:</p> <ul style="list-style-type: none"> • is equipped with a pressure relief valve or other means to ensure that transfer hoses cannot be over-pressurized • where possible, can blow transfer lines hoses reasonably clear at the end of transfer
Valve Check	<p>Check that:</p> <ul style="list-style-type: none"> • any outlets below the intended liquid level on the receiving barrel, tank, tanker, equipment, or other container are closed and plugged, capped, or locked • any drains are closed and plugged, capped, or locked <p>Ensure that:</p> <ul style="list-style-type: none"> • vents on both the container being filled and emptied are open • transfer valves are open from the correct source

Pre-Arranged Emergency Shut-Down Procedures	Pre-arrange with the carrier a procedure and communication system for emergency shut-down of the unloading.
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During Transfer

Leak and Level Checks	Monitor transfer continuously to ensure that the receiving barrel, tank, tanker, equipment, or other container is not leaking and is not overfilled (design capacity or 90 percent full for containers without an obviously indicated design capacity – especially important when filling in cold weather).
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After Transfer

Empty Hoses	Where possible drain, or use the transfer pump to blow out, the transfer hoses clear at the end of transfer.
Drip Collection	Use drip pans when breaking connections. Recycle collected drips.
Secure Openings	Close and plug, cap, or lock openings on the filled and emptied barrel, tank, tanker, equipment, or other container as appropriate, ensuring that any gaskets or o-rings necessary for a leak-tight seal are in good condition and properly seated.
Leak Check	<p>Check filled barrel, tank, tanker, equipment, or other container for leaks. If leaks are found:</p> <ul style="list-style-type: none"> • use an overpack drum to contain the unsound container, or • transfer insulating oil to a sound container • see Spill Response  for clean-up of any leakage
Hose Storage	Cap or self-connect coiled hoses and transfer to contained, secure storage.
Disposal of Used Sorbents	Handle, store, and dispose of any used sorbents as specified in WM-460  .
Labeling	<p>Label all barrels, tanks, tankers, or other containers.</p> <p>If the container was previously used for something else, ensure that any non-applicable labels are removed or obliterated.</p>

Testing Insulating Oil

There are different requirements for sample volume, type of sample container, and so on, depending on the purpose and type of testing.

See as applicable:

- Testing for Operational and Maintenance Purposes
- Testing for PCBs
- Testing for Transport

Testing for Operational and Maintenance Purposes

- Containers and Equipment for Sampling—see Departmental Standards
- Sampling—see Departmental Standards
- Shipment of Samples to Laboratory – see below

Shipments of Samples to Laboratory

Labels	Make sure that at least the following is on the sample label: <ul style="list-style-type: none"> • BC Hydro department and location • identification of container or equipment item sampled • sample identification (number or description) • date sample was collected • tests required • name and telephone number of the person doing the sampling • name and contact details of person to whom test results should be sent
Documentation	Complete a Sample Transmittal form. Make sure the name and address of the shipper are filled in.
Packaging	Pack the samples: <ul style="list-style-type: none"> • to avoid damage or leakage during transport e.g. tape bubble wrap around glass sample bottles • in boxes or other packaging with enough absorbent (e.g. rags or oil-specific absorbent) • so that there will be no leakage from the package, if a sample container leaks or breaks so that the gross mass of the samples is less than 5 kg • including the completed Sample Transmittal form in a plastic sleeve to protect it in event of a leak Print the words TEST SAMPLES clearly in block letters on the outside of the package.
Shipment	Complete the sample submission form and ship to Powertech Labs: <p style="text-align: center;"> Powertech Labs Inc. Insulating Oil Laboratory 12388 - 88th Ave Surrey, BC V3W 7R7 </p> Do NOT send the package by Canada Post.

Sampling - see Departmental Standards

Containers and Equipment for Sampling

Testing for PCBs

Containers and Equipment for Sampling for PCBs

Sample Containers	<p>Testing of insulating oil for PCBs should be done by Powertech Labs for all non-emergency situations and for confirmation of any emergency field tests.</p> <p>Contact Powertech Labs for:</p> <ul style="list-style-type: none"> • sample containers (to ensure cleanliness it is recommended that containers be obtained from Powertech rather than using stock containers) • sample labels, and • sample submission forms <p>In emergency situations (for example, spill response), 25 mL amber glass bottles can be used-Stock Number 113-0140 for lots of fifty from Store 1</p>
Equipment and Materials for Sample Collection	<p>Assemble the following before collecting a sample:</p> <ul style="list-style-type: none"> • appropriate personal protective equipment (see the applicable occupational health and safety standards for your Business Group or client) • label for the container from which the sample will be collected if it is not otherwise identified (use bar-coded Oil Management Department labels for barrels that will be shipped to the Oil Management Department) • tags or labels for sample containers • indelible pen for completing labels • Powertech sample submission form • containers to collect oil if purging is necessary during sampling • oil-specific sorbents for clean-up (not from spill kits- these should be reserved for emergency use only) • clean equipment for sample collection such as a pipette, or polythene tubing if required • polythene plastic sheeting • Note: Contamination of insulating oil with trace amounts of chlorinated materials can cause interference with tests for PCBs. <p>In particular, contact of the oil sample with articles made from polyvinyl chloride (PVC) such as vinyl gloves, vinyl lined bottle caps, vinyl tubing (includes most Tygon tubing), etc.</p>

	<p>must be avoided.</p> <p>Other sources are residual amounts of chlorinated solvents such as chlorobenzene.</p> <p>If the oil will be tested using a Clor-N-Oil Kit, any source of chlorides such as sweat or seawater must also be avoided.</p> <p>Have the following on hand for shipping samples to Powertech Labs:</p> <ul style="list-style-type: none"> • box to ship the samples • packing material such as bubble wrap to protect sample containers • oil-specific sorbents such as sorb-all or rags to absorb oil in case samples leak during shipment • packing tape for binding and sealing the shipping box
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Emergency Field Test for PCBs Using Clor-N-Oil Kit

The Clor-N-Oil Kit should only be used in emergency situations (for example, spill response) to test insulating oil for PCBs. For all non-emergency situations and for confirmation of emergency field tests, samples should be shipped for laboratory testing – see Shipment of Samples for Laboratory Analysis.

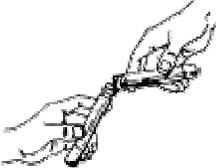
Note: Clor-N-Oil kits contain sodium and must be transported as per BC Hydro's PCB Test Kit Permit. See PCB Test Kits for a summary of the permit conditions

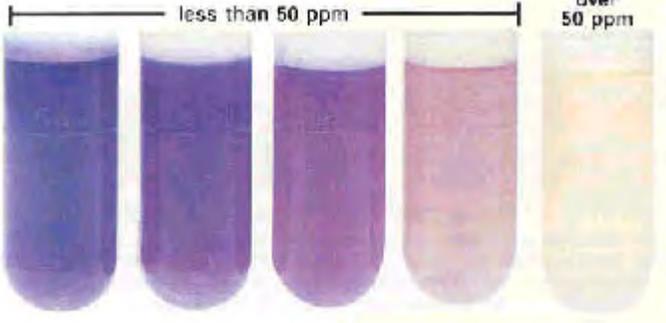
Instructions for CLOR-N-OIL® PCB Screening Kit 50

Each kit contains:

1. A polyethylene tube with a black dispensing cap containing a colorless ampule (bottom) and gray ampule (top) - Tube #1.
 2. A polyethylene tube with a white cap containing 7 mL of buffer solution, a clear ampule (bottom) and a red-green ampule (top) - Tube #2.
 3. A polyethylene pipette.
 4. A glass ampule contained in a cardboard and plastic tube designated as "Disposal Ampule."
- READ ALL SUGGESTIONS, SPECIAL INSTRUCTION AND CAUTIONS FOR USE BEFORE DOING TEST.
 - WEAR RUBBER GLOVES AND SAFETY GLASSES

Directions:

<p>Step 1</p> 	<p>Unscrew the dispenser cap from Tube 1 (with black cap). Using the polyethylene pipette, add exactly 5 mL (up to line) of transformer oil to the tube. Replace the cap securely</p>
<p>Step 2</p> 	<p>Break the colorless ampule (lower) in the tube by compressing the sides of the tube. Shake for 10 seconds. Break the gray ampule (top) in the tube and shake thoroughly for 10 seconds. (Make sure that the colorless ampule is broken first, the gray one second.) Allow to react for 50 seconds (total of 60 second reaction time), shaking intermittently several times while timing with a watch.</p>
<p>Step 3</p> 	<p>Remove the caps from both tubes and pour the buffer solution from Tube 2 (with white cap) into Tube 1. Replace the cap tightly on Tube 1 and shake vigorously for 10 seconds. Vent the tube by partially unscrewing the dispenser cap. Close securely and shake well for 10 seconds more. Vent the tube once again and tighten the cap securely. The oil should no longer appear gray.</p>
<p>Step 4</p> 	<p>Stand Tube 1 upside-down on its cap and allow to settle for two minutes. If the oil layer is below the buffer layer, discontinue the test at this point as the oil is primarily pure PCB (Askarel). See Figure 1. If the oil layer is on top of the water layer, position Tube 1 over the top of Tube 2 and open the nozzle on the black cap. Be sure to point the nozzle away from the operator while opening it, and check that the nozzle is open completely before dispensing the buffer. Dispense exactly 5 mL of the buffer solution into Tube 2 (up to line). Replace the cap on Tube 2 and close the dispenser cap on Tube 1</p>
<p>Step 5</p>	<p>Break the colorless ampule (bottom) in Tube 2 and shake for 10 seconds. Break the colored ampule (top), shake for 10 seconds, and observe color</p>
<p>Step 6</p>	<p>If the solution appears purple, the oil sample contains less than 50 ppm PCB. If it appears yellow or colorless, it MAY contain more than 50 ppm PCB and should be tested further by a PCB specific method. Disregard any color that may develop in a thin layer of oil that might form on top of the solution</p>

	
<p>Step 7</p>	<p>Open the disposal ampule container and drop the ampule into Tube 2. Replace the cap on tube 2. Crush the ampule by squeezing the sides of the tube. Shake for 5 seconds. This reagent immobilizes the mercury so that the kit passes the EPA's TCLP test. See caution section above for additional disposal information.</p>

About the CLOR-N-Oil Test Kit

The Clor-N-Oil Test Kit works on the principle of chloride determination. Since PCBs contain chlorine the test kit is able to detect them. However, the test cannot distinguish between any other chlorine containing compound such as trichlorobenzene which may also be in transformer oil. This may cause a result which is known as a "false positive", for instance, the oil will indicate the presence of over 50 ppm PCBs but when analyzed by gas chromatography will show somewhat less than 50 ppm.

Chemistry of the Test

A precise amount of transformer oil is placed into Tube 1. The colorless ampule containing a catalyst is broken and thoroughly mixed with the oil. A second ampule containing metallic sodium is broken and the sodium, activated by the catalyst, strips chlorine from the PCBs forming sodium chloride. A buffer solution in water is added to the oil which neutralizes the excess sodium and extracts the sodium chloride into the water. The water layer is then separated from the oil and returned to Tube 2. An ampule containing a precise amount of reagent is broken and mixed with the water. An indicator ampule is then broken and mixed. The color of the mixture is dependent on the amount of PCBs (chlorine) in the transformer oil sample.

Suggestions for Using the CLOR-N-Oil Test

Kit http://hw/our_bus/she/environment/ebmp/me/oil/insulating_oil/test/pcbs/Pages/fst.aspx - s4-bodyContainer

- The test works on the principle of chloride detection. Therefore, contamination by salt (sodium chloride), sea water, perspiration, and so on, will give a false positive result and require further testing in a laboratory.

- Never touch the ampules, the holder inside the tube, or the pipette tip, as salt may contaminate the test.
- The kit should be examined upon opening to see that all of the components are present and that all the ampules (4) are in place and not leaking. The liquid in Tube 2 (white cap) should be approximately 1/2 inch above the 5 mL line and the tube should not be leaking. The ampules are not supposed to be completely full.
- The Clor-N-Oil test will not work on a sample that contains water. If, in Step 2, the tube gets noticeably warm, builds up pressure, or loses its gray color, the sample probably contains water and the test should not be run. Another test may be tried if the oil sample is dried first.
- Perform the test in a warm, dry area with adequate light. In cold weather, a truck cab is sufficient. If a warm area is not available, Step 4 should be performed while warming Tube 1 in palm of hand.
- When drawing oil into the pipette, do not submerge tip too deeply into the oil sample. This will cause the pipette to drip.
- When inserting the pipette into the polyethylene tube, insert it all the way to the 5 mL line. This prevents oil from getting on the tube walls and reagent holder and allowing too much oil in the tube.
- Always crush the clear ampule in each tube first. If this has not been done, stop the test and start over using another complete kit. A false negative may result and allow a contaminated sample to pass without detection.
- In Step 3, tip Tube 2 to an angle of only about 45°. This will prevent the holder from sliding out.



Special Instructions for Askarel Filled Transformers

- In Step 4, if the oil layer goes to the bottom (as shown in figure 1 on the right), discontinue test at this point as the oil is nearly pure PCB (Askarel). Continuing the test further will transfer the oil into Tube 2 and leave the water layer behind, causing false results.
- The Clor-N-Oil test is intended for use only with transformer oil of petroleum origin. It may not be useful for other fluids.
- **CAUTION**
 - When crushing the glass ampules, press firmly in the center of the glass ampule ONCE. Never attempt to recrush broken glass in test tube as the glass may come through the plastic and cut fingers.
 - In case of accidental breakage onto skin or clothing, wash with large amounts of water. All the ampules are poisonous and should not be taken internally.
 - Do not ship kits on passenger aircraft.
 - Dispose of kits properly. Tube #1 may contain residual PCBs and should be treated as PCB waste if the test result is positive. The mercury in tube #2 has been made insoluble by the disposal ampule and used kits will pass the USEPA TCLP test for land disposal. More stringent state and

local regulations may apply. Please contact Dexsil about disposal of unused, expired test kits.

Manufactures Warranty

- The Clor-N-Oil test kit is warranted to be free of defects in material and workmanship until the expiration date stamped on the box.
- Manufacturer's sole and exclusive liability under warranty is limited to replacement of any kit that is proved to be defective.
- Manufacturer is not liable for any incidental or consequential damages.
- Reliable test results are highly dependent upon the care with which the directions are followed and, consequently, cannot be guaranteed.
- Kits are manufactured by DEXSIL® Corporation, One Hamden Park Drive, Hamden, Connecticut 06517 Tel. 203.288.3509 Fax 203.248.6523

Shipment of Samples to Laboratory for PCB Analysis

Note: If samples are for operational and maintenance tests, see "Shipment of Samples to Laboratory for Operational and Maintenance Tests".

<p>Labels</p>	<p>Complete the sample label that comes with the sample bottle.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>TO: PowerTech Labs — Applied Chemistry 12388 – 88th Avenue, Surrey, B.C. V3W 7R7</p> <p>Insulating Oil — PCB Analysis</p> <p>Str./Grid No. _____ Sample No./W.O.# _____ Eqpt. _____ Mfg. Code _____ Maj – Comp. _____ BCH# _____ Serial No. _____ Sample Loc. _____ Sampled By _____ Eqpt. Vol. _____ Date _____ Send results to _____ Charge to _____</p> <p><small>DES-101 92-04</small></p> </div> <p>Sample bottles and labels (stock #1130140) can be ordered:</p> <ul style="list-style-type: none"> • from the Main Distribution Centre by filling out a Material Request on Passport, or • from a local storekeeper
<p>Documentation</p>	<p>Complete a PCB Sample Transmittal form – click to download a copy of the form as a Word document.</p> <p>Make sure the name and address of the shipper are filled in.</p>
<p>Packaging</p>	<p>Pack the samples:</p> <ul style="list-style-type: none"> • to avoid damage or leakage during transport – e.g., tape bubble wrap around glass sample bottles • in boxes or other packaging with enough absorbent (e.g., rags or oil-specific absorbent) so that there will be no leakage from the package, if a sample container leaks or breaks • so that the gross mass of the samples is less than 5 kg

	<ul style="list-style-type: none"> including the completed PCB Sample Transmittal form in a plastic sleeve to protect it in event of a leak <p>Print the words TEST SAMPLES clearly in block letters on the outside of the package.</p>
Shipment	<p>Ship the package to:</p> <p>Powertech Labs Inc. Applied Chemistry Department 12388 - 88th Ave Surrey, BC V3W 7R7</p> <p>Do NOT send the package by Canada Post.</p>

Testing Insulating Oil or Oil-Filled Equipment Prior to Transport

All insulating oil must be tested for PCBs prior to transport, except for:

- Class 1 or 2 oil in unopened containers from the manufacturer/refiner
- Class 1 or 2 oil in bulk direct from the manufacturer/refiner
- insulating oil in oil-filled equipment with an oil capacity less than 500 L, or
- insulating oil in oil-filled transformers manufactured after 1983

See “Testing for PCBs”.

Recycling/Disposing of Waste Insulating Oil

Waste insulating oil is hazardous waste and is subject to numerous regulatory requirements.

Waste insulating oil may not be used for road oiling/dust suppression or disposed of to land, drain or sewer.

Recycling or Disposal	<p>Recycle waste insulating oil through the Oil Management Department, if possible. Contact the Oil Management Department Support Services Administrator to determine if the oil can be recycled.</p> <ul style="list-style-type: none"> • If the oil can be recycled, follow Oil Management Department procedures – see Oil Management Department Information for Clients. • If the waste insulating oil cannot be recycled through the Oil Management Department, contact the MMBU Environmental Technical Specialist to arrange for disposal.
Storage before Recycling or Disposal	<p>See “Storing Waste Insulating Oil”.</p>
Shipping For Recycling or Disposal	<p>See “Transporting Waste Insulating Oil”.</p>

Spill Response

The following steps are presented as general guidelines for responding to spills of oil-based materials such as insulating oil, lube oil, or Varsol. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your Environmental Risk Management.

Ensure Safety	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response</p> <ul style="list-style-type: none"> See OSH Standards 301: WHMIS and Hazardous Materials and 302: Safety During Spill Response. <p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE). Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> go to the Material Safety Data Sheet database, or for dangerous goods in transport, contact ICC Compliance Center at 604-986-4617 (24 hours) 						
Stop the Flow	<p>Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.</p>						
Secure the Area	<p>Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources. Determine the PCB concentration if applicable – see Testing for PCBs</p> <p>Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>						
Contain the Spill	<p>Protect drains, sewers, culverts, waterways, and ditches, as appropriate.</p> <p>Contain the spilled product with sorbents, pads, or socks such as those contained in an oil spill kit. If an oil spill kit is not available or greater containment is required, use earth and/or sod.</p> <p>Identify all potential sources and the extent of the spilled material. Monitor containment measures.</p>						
Notify/Report	<p>Internal</p> <ul style="list-style-type: none"> For all spills, notify your work leader or manager as soon as possible. In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern <table border="1" data-bbox="634 1734 1385 1839"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table> <p>The work leader or manager of the person providing notification</p>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

	<p>of the spill must complete an environmental incident report in SAP and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than <u>Reportable Quantity</u>):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the Fisheries Act), and • local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the reportable quantity, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <ul style="list-style-type: none"> • For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further
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	notification.
Clean Up	<p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, oil, water, and sorbent mixture from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act and Regulations</i> if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste

Glossary - Definitions

Class 1 or 2: As applied to insulating oil, means any of the following:

- new or reclaimed insulating oil that is suitable for service in electrical equipment or cables and that contains less than 50 ppm PCBs
- insulating oil in service in electrical equipment or cables that contains less than 50 ppm PCBs
- insulating oil that contains less than 50 ppm PCBs and that will be returned to service in electrical equipment or cables, after field treatment to remove moisture and small amounts of carbon particles (does **not** include shipments of oil to the Oil Management Department for treatment)

Gross Mass: As applied to dangerous goods, means the total mass of dangerous goods including containers.

In Bulk: As it relates to transport of insulating oil, means transport where the insulating oil is loaded directly into or onto the transport vehicle.

Examples are transport where the insulating oil is loaded into a:

- tanker truck,
- rail car, or
- tank that remains on a truck

In Containers: As it relates to transport of insulating oil, means transport where the containers are not filled or emptied on the transport vehicle.

Examples are:

- barrels, or
- portable tanks where the tank and contents are loaded/unloaded as a unit

Land Where There Is Potential for The Spill to Reach Water: land from which a spill could enter water or fish habitat, where:

- water means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada, and

Shipping Documentation: whatever documents must go with a shipment.

Depending what and how much is being shipped, these documents could be one or more of the following:

- a bill of lading
- a full dangerous goods shipping document
- a document with information required by an exemption from TDG requirements
- a movement document/manifest
- a Permit for Equivalent Level of Safety

UN Number: Previously known as product identification number (PIN).

Waste: As applied to insulating oil, means any of the following:

- insulating oil that will be or is being recycled through the Oil Management Department
- scrap insulating oil
- insulating oil that will be disposed of (e.g., by burning in cement kilns)
- any liquid that contains more than 3 percent by mass of insulating oil (e.g., oily water)

Water: all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada. [*Fisheries Act* section 2, definition of Canadian Fisheries Waters] and includes fish habitat.

- Fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34]
- Fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.
- As a guideline, fish habitat includes the area extending 15 metres inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

References

Hazardous Waste Transport Licence Requirements

Transport on a public road of more than the transport licence quantity of a hazardous waste requires a Hazardous Waste Transport Licence.

Type of Waste Insulating Oil	Transport Licence Quantity	
	Transport by Contractor	Transport by BC Hydro Employee
Not TDG regulated	210 L	5,000 L

A Hazardous Waste Transport Licence is not required in any of the following cases:

- transport solely within the boundaries of BC Hydro property
- transport by rail, ship, or air that does not involve any road transport
- transport of Class 1 or 2 oil

Mercury and Mercury-Contaminated Materials

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Introduction

Note: This EBMP was last comprehensively reviewed on November 3, 2008, and may be out of date. Please contact Environmental Risk Management for changes.

Purpose: To document Environmental Best Management Practices for storage, transport and disposal of mercury and mercury-contaminated material.

Scope: Storage, transport and disposal of all types of mercury and mercury-contaminated material. Examples of mercury and mercury-containing items include:

- Elemental mercury (new and used)
- Equipment that may contain elemental mercury includes voltage regulators, switches, contacts, seals, rectifiers, transformers, lamps, and mercury vacuums.
- Instruments that may contain elemental mercury include barometers, manometers, pressure gauges, hydrometers, thermostats, current meters, vacuum pumps, and fire detection/suppression systems.
- Mercury-contaminated spill clean up materials
- Mercury-contaminated clothing, gloves, and expired respirator cartridges
- Materials or items that have become contaminated with mercury including rags and mops
- Decontamination room wash water contaminated with mercury

Note: This is not a complete list.

For fluorescent light tubes, mercury vapour lamps, and compact fluorescent lights (CFLs), follow instructions in “Mercury-Containing Light Bulbs.”

For mercury oxide batteries, follow instructions in the EMBP - Batteries.

General Principals for Managing Mercury

BC Hydro is committed to managing mercury and mercury-contaminated material in an environmentally sound and responsible manner. In summary the main principles for managing mercury and mercury-contaminated material are:

- Use and handle mercury and mercury-contaminated material in ways that minimize risks to human health, property and the environment.
- Use and handle mercury and mercury-contaminated material according to applicable legislation and codes.
- Use and handle mercury and mercury-contaminated material in ways that prevent release to water, land, and air.
- Where possible, eliminate mercury hazards by substituting mercury and mercury-containing devices with other materials or equipment.

- Where elimination of mercury hazards is not currently possible, control and minimize the hazard through one or a combination of the following: engineering controls, increased awareness, worker training, safe work procedures, and adequate personal protective equipment (PPE).
- Purchase mercury and mercury-containing devices only if there is no viable alternative for the application.
- Do not mix different types of waste mercury and do not mix mercury-contaminated material with other materials.
- Dispose of waste mercury and mercury-contaminated material in an environmentally sound manner.
- Keep an inventory of mercury, mercury-containing equipment, and mercury-contaminated material on site at all times.

Other sections of this best management practice provide more information for various specific situations.

Environmental Considerations

Environmental Hazards	Improper management of mercury and mercury-contaminated material can cause: <ul style="list-style-type: none"> • environmental damage including contamination of surface water and soil, and harm to animal, marine and aquatic life • contamination of assets resulting in unplanned expenditures for corrective action • non-compliance with environmental legislation
BC Environmental Management Act: Hazardous Waste Regulation	<ul style="list-style-type: none"> • Waste elemental mercury is classed as hazardous waste. • Waste material contaminated with mercury will generally meet criteria for leachable toxic waste and also be classed as hazardous waste. • Hazardous waste is regulated in storage and transport.
BC Environmental Management Act: Spill Reporting Regulation	<ul style="list-style-type: none"> • Spills of more than 5 kg (370 ml) of elemental mercury, or more than 5 kg of mercury-contaminated solids, or more than 5 L of mercury-contaminated liquids are to be reported to the BC Provincial Emergency Program. • See “Spill Response” or Reportable Spill Quantities for reporting requirements.
BC Environmental Management Act: Recycling Regulation	<ul style="list-style-type: none"> • In December 2008 the BC <i>Recycling Regulation</i> was amended to include mercury-containing light bulbs and mercury-containing electrical instruments. • A province-wide recycling program is scheduled for launch in July 2010.
Canadian Transportation of Dangerous Goods Regulations	<ul style="list-style-type: none"> • Waste elemental mercury is classed as dangerous goods (class 8) and is regulated in transit when shipped in a quantity of 5 kg (370 ml) or more. • Transport Canada has issued an Interim Order, effective July 2009, requiring reporting to local police and CANUTEC at 613-996-6666 if dangerous goods (other than class 9) have been lost, stolen, or unlawfully interfered with.

<p>Canadian Environmental Protection Act (CEPA): Environmental Emergency Regulations</p>	<p>Any person who owns or manages mercury in a quantity of 1,000 kg (74 L of liquid elemental mercury) or more, stored in containers with a capacity of 30 kg or more, at a single site must:</p> <ul style="list-style-type: none"> • notify Environment Canada, and • prepare and implement an environmental emergency plan
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In Service

<p>Safety</p>	<p>Handle mercury and mercury-contaminated material as per the occupational health and safety standards, policies and procedures for your Business Unit. For assistance contact your OSH Specialist.</p>
<p>Precautions</p>	<p>Follow instructions in “Spill Preparedness”</p>
<p>Labels</p>	<p>Place a DANGER MERCURY label on each mercury-containing device and piece of equipment. If this is not practical, place the label as close as possible to the device or equipment.</p> <p>Also place a label on the door or entrance where mercury-containing devices and equipment are located.</p> 
<p>Inspections</p>	<p>Regularly inspect mercury-containing devices in service for damage and leaks.</p> <p>In case of a mercury spill or leak, follow instructions in “Spill Response”</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill clean up procedures. See OSH Standard 311 Mercury.</p> <p>Keep a record of the inspection and report any findings to the site manager, or Environmental Risk Management.</p>
<p>Mercury in Service Inventory</p>	<p>Keep an inventory of mercury in service at all times. This is a requirement of OSH Standard 311 Mercury. Download the Mercury Inventory Spreadsheet  if needed.</p> <p>Record as applicable for each instrument or piece of equipment:</p> <ul style="list-style-type: none"> • the date the item was put into service (if available)

	<ul style="list-style-type: none"> • the type of equipment • the quantity of mercury in the item (preferably in kg) • the service location <p>Note: To estimate the quantity of elemental mercury in kilograms, multiply the number of litres by 13.5, the specific gravity for mercury.</p> <p>When elemental mercury is removed from storage and put into service, record the quantity and adjust both the Usable Mercury In Storage and Mercury In Service inventories.</p> <p>When a mercury-containing device is removed from service, adjust both the Mercury In Service and Waste Mercury In Storage inventories.</p> <p>Keep mercury inventory records for at least 2 years after the mercury is removed from the site.</p>
<p>Minimize Mercury Quantities</p>	<p>Keep the total amount of elemental mercury (i.e. new, in use, and waste) on site to less than 1,000 kg.</p> <p>Note: If the total amount of elemental mercury cannot be kept less than 1,000 kg, then additional requirements of the federal <i>Environmental Emergency Regulations</i> apply. Contact Environmental Risk Management group for help in finding out what is needed.</p>

Storage of Usable Mercury

Physical Requirements

<p>Safety</p>	<p>Handle mercury and mercury-contaminated material as per the occupational health and safety standards, policies and procedures for your business group / business unit. For assistance contact your OSH Specialist.</p>
<p>Precautions</p>	<p>Follow instructions in “Spill Preparedness”</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. See OSH Standard 311 Mercury.</p>
<p>Containers</p>	<p>Use high density polyethylene (HDPE) bottles to store elemental mercury.</p> <p>Check that containers for new mercury are:</p> <ul style="list-style-type: none"> • in good condition with no dents or damage • closed during storage using leak-tight seals

<p>Labels</p>	<p>Make sure each container of elemental mercury has a DANGER MERCURY label.</p> 
<p>Storage Location and Signage</p>	<p>Store contained usable mercury in a designated area of the site away from traffic and away from heat sources.</p> <p>Restrict access to the storage location at all times.</p> <p>Post DANGER MERCURY signs or labels at the entrance to the storage location.</p>

Administrative Requirements

<p>Inspections</p>	<p>Inspect the storage facility monthly or as per the site or station maintenance plan.</p> <p>When inspecting:</p> <ul style="list-style-type: none"> • check for damage and leaks of mercury • remove any incompatible materials, including wastes, from the storage area • check mercury is not being stored near a heat source. If it is, remove the heat source or move the stored mercury <p>In case of a mercury spill or leak, follow instructions in “Spill Response”</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill clean up procedures. See OSH Standard 311 Mercury.</p> <p>Keep a record of the inspection and report any findings to the site manager or Environmental Risk Management.</p>
<p>Usable Mercury Storage Inventory</p>	<p>Keep an inventory of usable mercury stored on site at all times. This is a requirement of OSH Standard 311 Mercury. Download the Mercury Inventory Spreadsheet  if needed.</p> <p>Record as applicable for each bottle or mercury-containing item:</p> <ul style="list-style-type: none"> • when the item was stored • a description of the container or item type • where the container or item is stored on site • how much mercury is in the container or item in kilograms <p>Note: To estimate the quantity of elemental mercury in</p>

	<p>kilograms, multiply the number of litres by 13.5, the specific gravity for mercury.</p> <p>When contents of a bottle are put into service, record the quantity and adjust both the Usable Mercury In Storage and Mercury In Service inventories.</p> <p>Keep records of new mercury inventories for at least 2 years after the mercury is put into service.</p>
Minimize Storage Quantities	<p>Keep the total amount of elemental mercury (i.e. new, in use, and waste) on site to less than 1,000 kg.</p> <p>Note: If the total amount of mercury cannot be kept less than 1,000 kg, then additional requirements of the federal <i>Environmental Emergency Regulations</i> apply. Contact Environmental Risk Management for help in finding out what is needed.</p>

Storage of Waste Mercury

Physical Requirements

Safety	<p>Handle mercury and mercury-contaminated material as per the occupational health and safety standards, policies and procedures for your business unit. For assistance contact your OSH Specialist.</p>
Precautions	<p>Follow instructions in “Spill Preparedness.”</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. See OSH Standard 311 Mercury.</p>
Containers	<p>Make sure containers for mercury wastes are:</p> <ul style="list-style-type: none"> • in good condition • closed during storage • handled, stored, or transported so as not to cause leaks or ruptures • compatible with the wastes, if they are not the original containers (contact Environmental Risk Management if unsure about compatible materials) <p>Elemental mercury: use the original bottles the mercury came in when new to store dirty elemental mercury. If these are not available, use a high density polyethylene (HDPE) bottle with a tight fitting cap like that shown below. Place not more than 370 ml (5 kg) in each bottle to avoid TDG and UN packaging requirements.</p> <p>Wrap mercury containing bottles in bubble wrap. Place the wrapped bottle in a sealed plastic bag, then place securely in an appropriately sized, taped cardboard box.</p> <p>If necessary, get containers and/or assistance from the MMBU</p>

	<p>Environmental Technical Specialist.</p> <p>If any bottle is to be more than 370 ml contact the MMBU Environmental Technical Specialist for packaging instructions.</p> <p>Mercury-contaminated solids: use a steel or high density polyethylene (HDPE) open-top drum lined with a heavy duty (4 mil) plastic liner, like that shown at right, and fitted with a tight lid to store mercury-contaminated solids, including spill clean up materials.</p> <p>Mercury-contaminated liquids: use a high density polyethylene (HDPE) bung-type drum like that shown at right to store mercury-contaminated liquids, including contaminated wash water. Do NOT use a steel drum.</p> <p>Store HDPE drums of mercury-contaminated liquids inside plastic secondary containment tubs with capacity of at least 110% of the drum.</p> <p>Used instruments and equipment: See “Instruments and Equipment”.</p> <p>Used fluorescent tubes, mercury vapour lamps: See “Packaging Waste Lights” in “Instruments and Equipment.”</p> <p>Get containers from the MMBU Environmental Technical Specialist, if necessary.</p>  
<p>Labels</p>	<p>Put a DANGER MERCURY label on the outside of each container or package if the container is large enough. If the container is not large enough, attach the label to the container using a cord or other device.</p> <p>Also put on a completed waste label. See “Waste Labels” for instructions.</p> <p>See waste label examples as appropriate:</p> <ul style="list-style-type: none"> • Example 1: Waste elemental mercury 5 kg or more • Example 2: Mercury contaminated clean up materials (solids) 5 kg or more • Example 3: Mercury contaminated wash water 5 L or more • Example 4: Instruments and equipment containing mercury

	<ul style="list-style-type: none"> • Example 5: Unbroken mercury-containing lights Remove or erase any labels that do not apply.
Storage Location	Store contained usable mercury in a designated area of the site away from traffic and away from heat sources. Restrict access to the storage location at all times. Post DANGER MERCURY signs or labels at the entrance to the storage location.
Storage Requirements	Store containers of mercury waste: <ul style="list-style-type: none"> • with labels outward • with containers upright • to allow for easy leak inspection (for example, store drums off the floor on pallets with aisle space between the pallets) To minimize the spread of wastes, clean up spills or leaks promptly per instructions in "Spill Response" Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill clean up procedures. See OSH Standard 311 Mercury. Keep mercury-contaminated wastes separate from other wastes. Do not store any mercury-contaminated wastes in the same container as non mercury-contaminated wastes.
Restrict Access	Restrict access to the storage location at all times.

Administrative Requirements

Minimize Storage Quantities	Dispose of mercury wastes regularly. Keep the amount of mercury waste stored less than the BC <i>Hazardous Waste Regulation</i> (HWR) quantities listed below:			
	Waste Type	Examples	HWR Category	Registration Quantity
	Dirty Elemental Mercury	Change out material from mercury arc valve (MAV)	Corrosive waste in TDG Class 8	100 kg (7.4 L)
	Mercury-Contaminated Solids	Contaminated clothing, rags, clean up materials	Leachable toxic waste	500kg
	Mercury-Contaminated Liquids	Contaminated Wash Water	Leachable toxic waste	500 L
Note: If the amount of mercury waste cannot be kept less than the registration quantity, many additional requirements of the BC <i>Hazardous Waste Regulation</i> apply. Contact the MMBU				

	<p>Environmental Technical Specialist for help in finding out what is needed.</p> <p>Note: If the total amount of mercury cannot be kept less than 1,000 kg, then additional requirements of the Canadian <i>Environmental Emergency Regulations</i> apply. Contact your Regional Environmental Coordinator or Environmental Risk Management for help in finding out what is needed.</p>
<p>Waste Mercury Inventory</p>	<p>Keep an inventory of waste mercury stored on site at all times. This is a requirement of OSH Standard 311 Mercury. Download the Mercury Inventory Spreadsheet  if needed.</p> <p>Use the waste mercury inventory for dirty elemental mercury, waste mercury-contaminated solids, waste mercury-contaminated liquids, and used mercury-containing instruments and equipment.</p> <p>Do NOT combine the waste mercury inventory with the inventories of other hazardous wastes.</p> <p>Do NOT use the inventory for waste fluorescent light bulbs, mercury vapour lamps, or mercury-oxide batteries.</p> <p>Record as applicable for each drum, bottle, instrument, or piece of equipment:</p> <ul style="list-style-type: none"> • the identification number of the container or item • the date the container or item was received or put into storage • the type of waste • the shipping name and UN number (UN2809) if the waste is TDG regulated • the quantity of waste in the container (kg or litres as appropriate) • where the container or item is stored on site • when the container or item is removed from storage or shipped from site • the bill of lading number or waste manifest number, as applicable <p>Keep records of waste mercury inventories for at least 2 years after waste is removed from site.</p>
<p>Inspections</p>	<p>Inspect the storage facility weekly or as per the site or station maintenance plan.</p> <p>When inspecting check that:</p> <ul style="list-style-type: none"> • drums, bottles, packages, instruments and equipment are not damaged or leaking • there are no incompatible materials, including other wastes, in the storage area • there is no heat source near the waste. If there is, remove the heat source or move the stored mercury waste <p>Note: if any waste mercury has leaked, follow “Spill Response” for clean up instructions.</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in</p>

	<p>mercury spill clean up procedures. See OSH Standard 311 Mercury.</p> <p>Keep a record of the inspection and report any findings to the site manager, OSH Specialist or Environmental Risk Management.</p>
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Transporting TDG Regulated Waste Mercury

The shipment is classed as hazardous waste and is regulated in transport by the Hazardous Waste Regulation if it is:

- 5 kg or more of mercury-contaminated solids
- 5 L or more of mercury-contaminated wash water
- 5 kg or more of broken mercury-containing lights having a leachate extraction test result of 0.1 mg/L or more

The shipment is classed as hazardous waste and is also TDG regulated if it is:

- 5 kg or more elemental mercury
- an instrument or electrical device containing 5 kg or more elemental mercury

Shipping: Planning

The shipper is responsible for the following:

TDG Training	<p>If the shipment is TDG regulated, have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training <p>When arranging transport, specify that the carrier must have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Shipment Tracking	<ul style="list-style-type: none"> • Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.

<p>Registration of Shipping and Receiving Sites</p>	<p>The shipping and receiving sites do not have to be registered if the amount of waste being transported is less than:</p> <ul style="list-style-type: none"> • 100 kg (7.4 L) elemental mercury • 500 kg of mercury-contaminated solids (e.g. clothing, rags, clean up materials, soil) • 500 L of mercury-contaminated liquids (e.g. wash water) <p>If the waste being shipped is more than the limits above, the shipping and receiving sites must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • “14” (code for waste mercury or waste contaminated with mercury) is registered, if it is a BC Hydro site • the quantity registered is more than the amount of waste mercury being shipped <p>If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number.</p> <p>If the shipping or receiving site is not registered, contact the MMBU Environmental Technical Specialist to request a registration update.</p>																	
<p>Hazardous Waste Transport Licence Requirements</p>	<p>Transport on a public road of a hazardous waste may require a Hazardous Waste Transport Licence.</p> <p>Before arranging road transport, check if the carrier will need a Hazardous Waste Transport Licence.</p> <p>Transport Licence Quantity</p> <table border="1" data-bbox="646 1171 1360 1766"> <thead> <tr> <th rowspan="2">Waste Type</th> <th colspan="2">Transport by</th> </tr> <tr> <th>Contractor</th> <th>BC Hydro Employee</th> </tr> </thead> <tbody> <tr> <td>Elemental Mercury</td> <td>5 kg (370 ml)</td> <td>100 kg (7.4 L)</td> </tr> <tr> <td>Instrumental or Equipment Containing Mercury</td> <td>5 kg (370 ml)</td> <td>100 kg (7.4 L)</td> </tr> <tr> <td>Mercury-Contaminated Solids</td> <td>5 kg</td> <td>500 kg</td> </tr> <tr> <td>Mercury-Contaminated Liquids</td> <td>5 L</td> <td>500 L</td> </tr> </tbody> </table> <p>If a Hazardous Waste Transport Licence is needed, check at the time of arranging transport that the carrier has a valid license that allows for carrying the shipment.</p>	Waste Type	Transport by		Contractor	BC Hydro Employee	Elemental Mercury	5 kg (370 ml)	100 kg (7.4 L)	Instrumental or Equipment Containing Mercury	5 kg (370 ml)	100 kg (7.4 L)	Mercury-Contaminated Solids	5 kg	500 kg	Mercury-Contaminated Liquids	5 L	500 L
Waste Type	Transport by																	
	Contractor	BC Hydro Employee																
Elemental Mercury	5 kg (370 ml)	100 kg (7.4 L)																
Instrumental or Equipment Containing Mercury	5 kg (370 ml)	100 kg (7.4 L)																
Mercury-Contaminated Solids	5 kg	500 kg																
Mercury-Contaminated Liquids	5 L	500 L																

Shipping: Preparing

The shipper is responsible for the following:

<p>Safety</p>	<p>Handle mercury and mercury-contaminated material as per the occupational health and safety standards, policies and procedures for your Business Group/Business Unit. For assistance contact your OSH Specialist.</p>
<p>Precautions</p>	<p>When preparing a shipment of waste elemental mercury, follow instructions in “Spill Preparedness.”</p>
<p>Condition and Leak Check</p>	<p>Check that containers and/or packages are in good condition and suitable for transport. This means containers:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are not cracked • for TDG regulated shipments, are marked with a certification code like the one at the right, unless an exemption allows something else. <div style="text-align: right;">  <p>(Click for explanation)</p> </div> <p>Note: UN packaging is required only for shipments of TDG regulated elemental mercury 5 kg or more. It is not required for shipments classed only as hazardous waste.</p> <p>If leaks or bad containers are found follow instructions in “Spill Preparedness.”</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. See OSH Standard 311 Mercury.</p>
<p>Closure Check</p>	<p>Make sure all containers are properly closed.</p>
<p>Packaging</p>	<p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead—do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g. sharp edges) <p>Preferred packaging for:</p> <ul style="list-style-type: none"> • barrels is strapped together and strapped to pallets in good condition, as long as the pallets can be safely handled at both the shipping and receiving locations • containers less than 5 kg, is in a cardboard box with packing

Labels	Make sure that containers have: <ul style="list-style-type: none"> • a DANGER MERCURY label • a completed waste label • TDG Labels and Marks if the shipment is TDG regulated Remove or erase any labels that do not apply
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Shipping: Loading

The shipper is responsible for the following:

Safety	Handle mercury and mercury-contaminated material as per the occupational health and safety standards, policies and procedures for your Business Group/Business Unit. For assistance contact your OSH Specialist.
Precautions	Check that the carrier has a copy of the “Spill Response” Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill clean up procedures. See OSH Standard 311 Mercury.
TDG Training	If the shipment is TDG regulated, make sure the carrier's <i>TDG Certificate of Training</i> has not expired.
Hazardous Waste Transport	Check the carrier's Hazardous Waste Transport Licence unless one is not needed. See the “Hazardous Waste Transport Licence Requirements”. Make sure that: <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying the type of waste that will be transported • the licence has not expired
Loading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks in General References.
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor

	<ul style="list-style-type: none"> – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Shipping: Paperwork

The shipper is responsible for the following:

Movement Document/Manifest	Use a movement document/manifest to transport regulated mercury waste. See “Transporting Using a Movement Document/Manifest.”
Inventory Update	Update the Waste Mercury Inventory to show that the waste has been shipped off site. Include the date the waste was shipped and the waste manifest number. Download and use the Mercury Inventory Spreadsheet  if necessary.

Transporting Using a Movement Document/Manifest

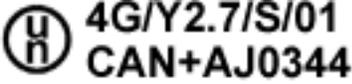
Consignor (shipper) Information	Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if needed. Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable. Enter BCG00122 as the Consignor (Generator) Provincial ID. If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site. For shipping name, TDG class, UN number, and packing group see “Waste Transport Information Table.” Make sure that emergency contact numbers are filled in. Note: The movement document/manifest must show the amount of the dangerous goods in kilograms or litres.
Carrier Information and Signature	Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.

<p>Copies</p>	<p>Do the following with the manifest/movement document copies:</p> <ul style="list-style-type: none"> • Copy 1 (white)—mail within two working days to: <p>Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1</p> <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • If the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the manifest. • If the waste is being disposed of without being shipped through Salvage Warehouse M [link to pop up], make an additional photocopy of Copy 1 and send the copy to: <p>MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9</p> <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
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Carrying: Accepting

The carrier is responsible for the following:

<p>Safety</p>	<p>Handle mercury and mercury-contaminated material as per the occupational health and safety standards, policies and procedures for your Business Group/Business Unit. For assistance contact your OSH Specialist.</p>
<p>Precautions</p>	<p>Have a copy of the “Spill Response” on the truck in case leak/spill response is needed in transit.</p> <p>Make sure that drains and watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures.</p>

<p>TDG Training</p>	<p>If the shipment is TDG regulated, have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
<p>Hazardous Waste Transport Licence</p>	<p>Have a valid Hazardous Waste Transport Licence that allows carrying of mercury, unless one is not needed. See “Hazardous Waste Transport Licence Requirements.”</p>
<p>Packaging and Leak Check</p>	<p>Check that packages or containers are in good condition and suitable for transport. This means that:</p> <ul style="list-style-type: none"> • cardboard boxes or drums are not torn, punctured or otherwise damaged • cardboard boxes are securely sealed and drum lids and/or bungs are tightly closed so that contents will not be released <p>Do not accept any damaged or unsealed drums, or any torn cardboard boxes. Do not accept any consignment that appears to be leaking.</p> <p>Follow Spill Response for Mercury and Mercury-Contaminated Material for cleanup of any released material.</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures.</p>
<p>Labels</p>	<p>Check that:</p> <ul style="list-style-type: none"> • containers have a DANGER MERCURY label • packages and any unpackaged containers have a completed waste label • containers have TDG Labels and Marks if the shipment is TDG regulated • labels are consistent with what is on the movement document/manifest • containers are marked with a packaging code like the one at the right, if the shipment is TDG regulated, unless an exemption allows something else. <div style="text-align: right;">  <p>(Click for explanation)</p> </div> <p>Note: UN packaging is required only for shipments of TDG regulated mercury waste. It is not required for shipments classed only as hazardous waste.</p>

Packaging and Leak Check	Check that containers and packaging are in good condition and suitable for transport. This means: <ul style="list-style-type: none"> • containers are tightly closed and do not leak or bulge • containers are not cracked or significantly rusted, dented, or damaged • any packaging (e.g. pallets, or strapping) is not damaged Do not accept materials unsuitable for transport unless fully contained in an overpack.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded.
Documentation	Complete Part B of the movement document/manifest and sign all copies - see How to Complete Part B of a Movement Document/Manifest if necessary. Return copies 1 and 2 to the shipper. Take copies 3 to 6 with the load.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the movement document/manifest.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	Keep a copy of the movement document/manifest in the place specified by <i>TDG Regulations</i> . See Required Locations for Documents in General References if needed. If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. See “Hazardous Waste Transport Licence Requirements” if needed
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.

Spill Response	<p>If a leak or spill is found, follow instructions on “Spill Response.”</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures.</p> <p>Arrange for trained mercury handling experts to travel to the spill site for cleanup.</p>						
Spill Reporting – Verbal, Internal	<p>Report any spill involving mercury or mercury contaminated material in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="646 1041 1377 1136"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
Spill Reporting – Verbal, External	<p>For a spill to water of any quantity, or a spill to land of more than 5 kg (370 ml) elemental mercury, 5 kg mercury contaminated solids, or 5 L mercury contaminated liquid notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada, and • local municipality or Regional District if the spill is to a source of drinking water <p>Note: a spill to water includes a spill to any feature directly connected to water, such as a ditch or storm drain.</p> <p>The notification to PEP must include the following:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up 						

	<ul style="list-style-type: none"> • government agencies on the scene • persons or agencies advised <p>If the spill is elemental mercury in transport and is more than 5 kg (370 ml), in addition to the above notifications also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • the owner of the road vehicle, if it is not a BC Hydro vehicle <p>The environmental specialist should also notify the Department of Fisheries and Oceans and the BC Ministry of Environment.</p> <p>If the spill is to land where there is potential for the spill to reach water, and the spill is less than 5 L or 5 kg, contact the group Environmental Specialist for advice on further notification.</p>
Spill Reporting – EIR	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	<p>Have the receiver complete and sign Copies 3 to 6 of the movement document/manifest. See How to Complete Part C of a Manifest if needed.</p>
Copies	<p>Do the following with the copies:</p> <ul style="list-style-type: none"> • Copy 4 – keep on file for at least two years • Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain movement document/manifest copies.</p>

Receiving

The Receiver is responsible for the following:

Documentation from the Carrier	<p>Get copies 3 to 6 of the movement document/manifest from the carrier.</p> <p>Contact Environmental Risk Management so that appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one (more than 5 kg elemental mercury, 5 kg mercury contaminated solids, or 5 L of mercury contaminated wash water).</p>
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<p>TDG Training</p>	<p>If the shipment is TDG regulated, have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
<p>Authorization for Receiving Hazardous Waste</p>	<p>If the waste being received is less than:</p> <ul style="list-style-type: none"> • 100 kg (7.4 L) of elemental mercury or • 500 kg of mercury-contaminated solids or • 500 L of mercury-contaminated wash water <p>the receiving site does not have to be registered. In this case, see the next section on “Description and Quantity Check.”</p> <p>If the waste being received is more than the quantities stated above, the receiving site must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the receiving site is on the list • “14” (the code for waste mercury or waste contaminated with mercury) is registered • the quantity registered is more than the amount of waste mercury or mercury-contaminated material being received <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
<p>Description and Quantity Check</p>	<p>Check that the description on the movement document / manifest matches the shipment.</p> <p>If:</p> <ul style="list-style-type: none"> • the description on the movement document / manifest does not match the shipment, or • the quantity shown on the shipping documentation is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L <p>Contact Environmental Risk Management for instructions.</p>

Receiving: Unloading

The receiver is responsible for the following:

<p>Safety</p>	<p>Handle mercury and mercury-contaminated material as per the occupational health and safety standards, policies and procedures for your business group / business unit. For assistance contact your OSH Specialist.</p>
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Precautions	Have a copy of the “Spill Response” on the truck in case leak/spill response is needed in transit. Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).
Shipment Check	Make sure there are no signs of leakage. If leaks or bad containers are found follow instructions in “Spill Response.” Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures .
Unloading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks in General References.

Receiving: Completion of Paperwork

The receiver is responsible for the following:

Completion of Movement Document/Manifest Part C	Complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if needed. Enter BCG00122 as the Consignee (Receiver) Provincial ID.
Copies	Do the following with the movement document/manifest copies: <ul style="list-style-type: none"> • Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 Note: The Ministry does not accept fax copies. <ul style="list-style-type: none"> • Copy 4 – return to the carrier • Copy 5 – keep on file for at least two years • Copy 6 – mail to the consignor
Inventory Update	Update the Waste Mercury Inventory to show that the waste has been received. Include the date the waste was received and the movement document/manifest number. Download and use the Mercury Inventory Spreadsheet  if necessary.

Transporting Non TDG Regulated Waste Mercury

The shipment is **not** regulated in transport by the *Hazardous Waste Regulation* or the *TDG Regulations* if it is:

- elemental mercury less than 5 kg
- an instrument or electrical device containing less than 5 kg of mercury
- less than 5 kg of mercury-contaminated solids
- less than 5 L of mercury-contaminated wash water
- unbroken mercury vapour lamps or fluorescent light bulbs

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle mercury as per the occupational health and safety standards, policies and procedures for your business group / business unit. For assistance contact your OSH Specialist.
Precautions	When preparing a shipment of elemental mercury or mercury-contaminated liquids, follow instructions in "Spill Preparedness."
Condition and Leak Check	<p>Check that bottles, drums, pails and/or packaging are in good condition and suitable for transport.</p> <p>This means containers:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are not cracked <p>If leaks or bad containers are found follow instructions in "Spill Response"</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. See OSH Standard 311 Mercury.</p>
Closure Check	Make sure that all containers are properly closed.
Packaging	<p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead—do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g. sharp edges)

Labels	Make sure that containers have: <ul style="list-style-type: none"> • a DANGER MERCURY label • a completed waste label • the words “ Limited Quantity ” if the shipment is a container of elemental mercury less than 5 kg. For more information see Exemptions from TDG Requirements – Dangerous Goods in Little Containers. Remove or erase any labels that do not apply.
Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.

Shipping: Paperwork

The shipper is responsible for the following:

Type of Documentation	All shipments of mercury waste should be accompanied by some form of shipping documentation. For shipments of non hazardous mercury waste use a bill of lading or a Waste Transfer Form.
Inventory Update	Update the Waste Mercury Inventory to show that the waste has been shipped. Include the date the waste was shipped and the bill of lading number. Download and use the Mercury Inventory Spreadsheet  if necessary.

Shipping: Loading

The shipper is responsible for the following:

Safety	Handle mercury as per the occupational health and safety standards, policies and procedures for your business group / business unit. For assistance contact your OSH Specialist .
Precautions	Check that the carrier has a copy of the “Spill Response.” Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. See OSH Standard 311 Mercury.
Loading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks in General References.
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.

Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle mercury as per the occupational health and safety standards, policies and procedures for your business group / business unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the "Spill Response" in case leak/spill response is needed in transit. Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover). Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures.
Labels	Check that: <ul style="list-style-type: none"> • containers have a DANGER MERCURY label • containers have a completed waste label • containers have the words "Limited Quantity" if the shipment is elemental mercury less than 5 kg • the labels are consistent with what is on the shipping documentation
Packaging and Leak Check	Check that containers and packaging are in good condition and suitable for transport. This means: <ul style="list-style-type: none"> • containers are tightly closed and do not leak or bulge • containers are not cracked or significantly rusted, dented, or damaged • any packaging (e.g. pallets, or strapping) is not damaged Do not accept materials unsuitable for transport unless fully contained in an overpack.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded. If rejecting the shipment, explain the reasons to the shipper.

Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow instructions on “Spill Response” in case of a spill. Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. Arrange for trained mercury handling experts to travel to the spill site for clean up						
Spill Reporting – Verbal, Internal	Report any spill involving mercury or mercury contaminated material in transit. BC Hydro Employees Report to: <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle Contractors Report to: <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle As well, the managers below must be notified promptly if there is potential for a large environmental impact or public concern: <table border="1" data-bbox="646 1696 1385 1791"> <tr> <td data-bbox="646 1696 833 1755">Edie Thome</td> <td data-bbox="841 1696 1092 1755">Tel. 604.528.3419</td> <td data-bbox="1101 1696 1385 1755">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="646 1755 833 1791">Lisa Seppala</td> <td data-bbox="841 1755 1092 1791">Tel. 604.528.2500</td> <td data-bbox="1101 1755 1385 1791">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
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<p>Spill Reporting – Verbal, External</p>	<p>For a spill to water of any quantity, or a spill to land of more than 5 kg (370 ml) elemental mercury, 5 kg mercury contaminated solids, or 5 L mercury contaminated liquid notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada, and • local municipality or Regional District if the spill is to a source of drinking water <p>Note: a spill to water includes a spill to any feature directly connected to water, such as a ditch or storm drain.</p> <p>The notification to PEP must include the following:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>If the spill is elemental mercury in transport and is more than 5 kg (370 ml), in addition to the above notifications also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • the owner of the road vehicle, if it is not a BC Hydro vehicle <p>The environmental specialist should also notify the Department of Fisheries and Oceans and the BC Ministry of Environment.</p> <p>If the spill is to land where there is potential for the spill to reach water, and the spill is less than 5 L or 5 kg, contact the group Environmental Specialist for advice on further notification.</p>
<p>Spill Reporting -- EIR</p>	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Receiving

The receiver is responsible for the following:

Safety	Handle mercury as per the occupational health and safety standards, policies and procedures for your business group / business unit. For assistance contact your OSH Specialist.
Precautions	Follow instructions in "Spill Preparedness."
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the containers <p>If a leak or damaged container is found, follow instructions in "Spill Response."</p> <p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures.</p>
Acceptance	Accept the shipment based on the above checks.
Unloading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .
Inventory Update	<p>Update the Waste Mercury Storage inventory to show the amount of waste received. Include the date the mercury was received, the type of item, the document number, and the quantity of mercury received.</p> <p>Download and use the Mercury Inventory Spreadsheet  if necessary.</p>

Transporting Ceramic Cylinders by Ferry

Ceramic cylinders that were previously in contact with mercury are not classed as hazardous waste or dangerous goods. However, some specific requirements apply when shipping cylinders by ferry.

Packaging	Completely enclose cylinders in plastic packaging.
Notification	<p>Print a copy of the Ceramic Cylinder Shipping Declaration  stating the equipment is not mercury-contaminated but was "once in contact with mercury." The letter must certify that the equipment is properly packaged.</p> <p>Forward a copy of the letter to the ship's captain in advance of the sailing.</p>

Disposing of Waste Mercury and Mercury-Contaminated Material

Recycling Restriction	Once elemental mercury or a mercury-containing device has been removed from service, do not reuse it for another application.
Disposal Options	<p>Dispose of dirty elemental mercury to the mercury supplier if possible.</p> <p>Dispose of all other mercury-contaminated items to Salvage Warehouse M including:</p> <ul style="list-style-type: none"> • Instruments and equipment containing elemental mercury • Bottles of elemental mercury that cannot be disposed of to a supplier • Mercury-contaminated solids including rags and other cleaning supplies, used disposable coveralls, spill clean up materials, used vacuum filters, exposed respirator cartridges, and mercury-contaminated soil • Mercury-contaminated wash water • Unbroken fluorescent light bulbs • Unbroken mercury vapour lamps • Mercury-oxide batteries <p>Contact the MMBU Environmental Technical Specialist prior to shipping mercury waste to Salvage Warehouse M.</p>
Storage Before Disposal	See "Storage of Waste."
Shipping for Disposal	See "Transport Waste."

Spill Response

The following steps are presented as general guidelines. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your OSH Specialist. Also contact Environmental Risk Management.

Ensure Safety	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response—see OSH Standards 301: WHMIS and Hazardous Materials, 302: Safety During Spill Response and 311: Mercury</p> <p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE). Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> • go to the Material Safety Data Sheet database, or • for dangerous goods in transport, contact ICC The Compliance Center at 604-986-4617 (24 hours)
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Stop the Flow	<p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill clean up procedures. See OSH Standard 311 Mercury.</p> <p>Act quickly. Plug leaks, set containers upright, and carry out any emergency repairs.</p>						
Secure the Area	<p>Limit or prevent access to the area. Clear the area of all personnel.</p> <p>Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>						
Contain the Spill	<p>Protect drains, sewers, culverts, waterways, and ditches, if there is a possibility of contaminants from the spill entering these.</p>						
Notify/Report	<p>Internal: For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="646 972 1377 1077"> <tr> <td data-bbox="646 972 833 1024"> Edie Thome </td> <td data-bbox="841 972 1092 1024"> Tel. 604.528.3419 </td> <td data-bbox="1101 972 1377 1024"> Cel. 778.828.6231 </td> </tr> <tr> <td data-bbox="646 1035 833 1077"> Lisa Seppala </td> <td data-bbox="841 1035 1092 1077"> Tel. 604.528.2500 </td> <td data-bbox="1101 1035 1377 1077"> Cel. 778.866.3251 </td> </tr> </table> <p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External:</p> <p>For a spill to water of any quantity, or a spill to land of more than 5 kg (370 ml) elemental mercury, 5 kg mercury contaminated solids, or 5 L mercury contaminated liquid notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada, and • local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>Note: a spill to water includes a spill to any feature directly connected to water, such as a ditch or storm drain.</p> <p>The notification to PEP must include the following:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller 	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

	<ul style="list-style-type: none"> • location, time and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>If the spill is elemental mercury in transport and is more than 5 kg (370 ml), in addition to the above notifications also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • the owner of the road vehicle, if it is not a BC Hydro vehicle <p>The environmental specialist should also notify the Department of Fisheries and Oceans and the BC Ministry of Environment.</p> <p>If the spill is to land where there is potential for the spill to reach water, and the spill is less than 5 L or 5 kg, contact the group Environmental Specialist for advice on further notification.</p>
<p>Clean Up</p>	<p>Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. See OSH Standard 311 Mercury.</p> <p>Handle waste mercury and mercury-contaminated material using only specialized equipment and trained personnel working in accordance with written procedures that meet the BC <i>Occupational Health and Safety Regulation</i>. Contact your OSH Specialist for assistance.</p> <p>Put mercury-contaminated clean up wastes including coveralls, gloves, footwear, vacuum filters and clean up implements into a drum that is lined with a heavy-duty (4 mil) plastic liner.</p> <p>Put a DANGER MERCURY label on each drum.</p> <div data-bbox="662 1499 1146 1822" data-label="Image"> </div> <p>Also put a completed waste label on each drum. Include on</p>

each waste label:

- Container ID: A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label
- TDG Shipping Name: Leachable toxic waste (mercury)
- TDG PIN: *N/A or Not applicable*
- TDG Class: *N/A or Not applicable*
- Packing Group: *N/A or Not applicable*
- Shipped From: Use location from where waste is being shipped. Complete at time of shipping
- Container: Number containers that contain the same waste (e.g. Container 1 of 3). Complete at time of shipping
- Produced By: Name of the person who is completing the label/filling the waste container
- Produced From: Location from where the waste originated (can be equipment or station) – e.g.: Arnott Substation
- Date Produced: Actual date the waste container was filled and label was produced—use the start date if the container is filled over time
- Phone: Phone number of person completing the label and filling the waste container
- Waste Description: *Mercury-contaminated clean up materials*
- Solid: Place checkmark

Example: **Mercury contaminated clean up materials**

The image shows a 'WASTE LABEL' form with the following handwritten entries:

- Shipping Information (TDG):**
 - TDG Shipping Name: LEACHABLE TOXIC WASTE (MERCURY)
 - TDG PIN: UN N/A
 - TDG CLASS: N/A
 - Packing Group: N/A
 - Shipped From: 6517 LADNER TRUNK RD, DELTA, BC
 - Container: 1 of 3
- Waste Origin Information:**
 - Produced By: JOE SMITH
 - Produced From: ARNOTT SUBSTATION
 - Date Produced: 06 01 at 1 0
 - Phone: 604 308 8116
- Waste Information (Refer to MSDS if applicable):**
 - Waste Description: MERCURY CONTAMINATED CLEAN-UP MATERIALS
 - WASTE OIL (checked if relevant): Insulating, Lubricating, Hydraulic, PCB waste, (print)
 - SOLID LIQUID GAS SLUDGE
 - Lab Report #
 - FACILITY SOURCE: Station ID, Equip ID, Spill Location

If necessary, get labels and/or drums from the MMBU Environmental Technical Specialist.

Store waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.

Transport and dispose of wastes in accordance with:

- BC Environmental Management Act
- Hazardous Waste Regulation

Spill Preparedness

Maintain an adequate supply of mercury spill response material and equipment.

Make sure spill response supplies are:

- visible at easily accessible locations
- close to where mercury and mercury-contaminated materials are stored or in use
- sealed with break-away tags after the contents have been checked and recorded on an inventory sheet kept with the supplies
- protected from weather damage
- separate from materials used for spill prevention and clean up during routine maintenance

Contact your OSH Specialist, and Environmental Risk Management for guidance on:

- type and quantity of spill response supplies to get
- where to locate spill response supplies

Make sure that relevant personnel and contractors know what spill response supplies are available and where they are located.

In case of a mercury spill or leak, follow instructions “Spill Response”

Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill clean up procedures. See OSH Standard 311 Mercury.

If spill response supplies are used, replenish the contents and replace the break-away tag as soon as possible after use.

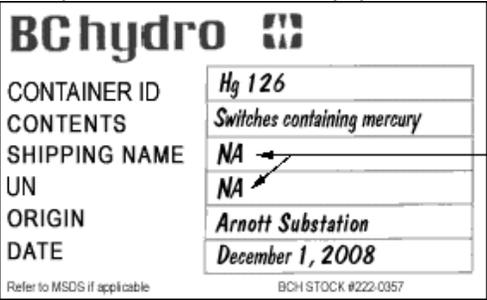
Instruments and Equipment Containing Mercury

Mercury containing instruments and equipment include but are not limited to:

- switches
- barometers
- pressure gauges
- thermostats
- fire deluge system seals

Purchasing	Purchase mercury containing instruments and equipment only if there is no viable alternative for the application.
Receiving New	When a new mercury-containing item is received, update the Usable Mercury In Storage or Mercury In Service inventory as applicable. Download and use the Mercury Inventory Spreadsheet  if necessary.

<p>Packaging Used Instruments and Equipment – less than 5 kg of mercury</p>	<p>For used instruments and equipment containing less than 5 kg of mercury, package the item with the mercury liquid intact. Do NOT break or open the item or attempt to drain the mercury contents into another container.</p> <p>Wrap each item in bubble wrap and packing tape. Place the wrapped item into either:</p> <ul style="list-style-type: none"> • a sealed plastic bag and then a cardboard box or a plastic lined cardboard box, or • a plastic pail with a tight fitting lid. <div data-bbox="673 577 1360 970" data-label="Image"> </div> <p>Do NOT use a metal can due to the possibility of leaked mercury corroding the container and being released.</p> <p>Get containers from the MMBU Environmental Technical Specialist, if necessary.</p> <p>Where quantities of packaged instruments and equipment warrant, place packaged items into a steel or high density polyethylene (HDPE) open-top drum.</p>
<p>Packaging Used Instruments and Equipment – more than 5 kg of mercury</p>	<p>For used instruments and equipment containing 5 kg or more of mercury, follow instructions for packaging instruments and equipment containing less than 5 kg of mercury as above, but use a cardboard box or plastic bucket having a UN packaging code like the one below.</p> <div data-bbox="669 1411 1036 1541" data-label="Image"> </div> <p>If necessary, get containers and/or assistance from the MMBU Environmental Technical Specialist.</p>

<p>Labeling</p>	<p>Put a DANGER MERCURY label on the package or write a brief description of the contents with a marker pen, e.g. Manometer containing mercury.</p>  <p>Also put on a completed waste label.</p> <p>If the package is not large enough for labels, attach labels to the container using a cord or other device.</p> <p>For instruments and equipment containing less than 5 kg of elemental mercury fill in:</p> <ul style="list-style-type: none"> • Container ID: An identification number to keep track of the package • Contents: What is in the container – for example, Switches containing mercury • Shipping Name: NA • UN Number: NA • Origin: Where the waste was generated – for example, Arnott Substation • Date: When the item was removed from service <p>Example: Instruments and equipment containing mercury</p>  <p>Get blank waste labels from the MMBU Environmental Technical Specialist if necessary.</p> <p>If using a drum for larger quantities of packaged instruments and equipment put the completed waste label and a DANGER MERCURY label on the outside of the drum.</p>
<p>Storage of Instruments and Equipment</p>	<p>Store packaged instruments and equipment:</p> <ul style="list-style-type: none"> • in a designated area • in such a way as to avoid breakage of contents • away from heat sources

<p>Transport Used Instruments and Equipment</p>	<p>Transport used mercury-containing instruments and equipment to MMBU by surface courier or BC Hydro employee. The courier does not require a Hazardous Waste Transport Licence.</p> <p>Note: Do NOT send by Canada Post or OCS.</p> <p>Note: Do NOT send by air. Mercury may corrode aircraft aluminum and may only be transported by air using special provisions and packaging, and with the notification of the pilot.</p> <p>Note: The transport of mercury-containing instruments and equipment containing less than 5 kg of mercury is not regulated in transport by the <i>Hazardous Waste Regulation</i> or the <i>TDG Regulations</i> provided the amount of mercury in the instrument or equipment is less than 5 kg and transport is by surface (not by air). For more information see Exemptions from TDG Requirements – Dangerous Goods in Instruments and Equipment.</p> <p>If the amount of mercury in the instrument or equipment is 5 kg or more, the shipment is regulated by the <i>Hazardous Waste Regulation</i> and the <i>TDG Regulations</i>. Contact the MMBU Environmental Technical Specialist for help.</p>
<p>Inventory Update</p>	<p>Update the Waste Mercury Inventory to show that a mercury-containing item has been received or transported off site.</p> <p>Download and use the Mercury Inventory Spreadsheet  if necessary.</p>

Light Bulbs Containing Mercury

Mercury-containing light tubes and bulbs include:

- Fluorescent light tubes
- High pressure sodium lamps
- Compact fluorescent lights (CFLs)

<p>Purchasing</p>	<p>Give preference to low mercury fluorescent tubes and low mercury high pressure sodium lamps.</p> <p>Note: These alternatives contain a small fraction of mercury compared to their traditional counterparts and are rated to perform at least as well.</p> <p>Note: Any additional costs to purchase low mercury lights will be offset by reduced recycling and disposal costs when the lights are removed from service.</p>
<p>Shipping New Lights</p>	<p>Intact new lights require no specific labeling or documentation.</p>
<p>Storing New Lights</p>	<p>Store new tubes and lamps in the boxes or containers in which they arrived and in a location that minimizes the possibility of damage.</p>

<p>Packaging Waste Lights</p>	<p>Do not break used mercury-containing lights. Repackage intact tubes and bulbs into their original cardboard boxes.</p>  <p>If the original boxes are not available, use another box specifically designed for this purpose. Contact the MMBU Environmental Technical Specialist if necessary.</p>														
<p>Labeling Waste Lights</p>	<p>Put a completed waste label on the outside of the box or container. On the waste label fill in:</p> <ul style="list-style-type: none"> • Container ID: An identification number to keep track of the package • Contents: What is in the container—for example, Used light tubes – breakable • Shipping Name: NA • UN Number: NA • Origin: Where the waste was generated—for example, Edmonds • Date: When the item was removed from service <p>Example: Unbroken mercury-containing lights</p> <table border="1" data-bbox="651 1325 1062 1570"> <tr> <td colspan="2">BC Hydro </td> </tr> <tr> <td>CONTAINER ID</td> <td>FL 127 ←</td> </tr> <tr> <td>CONTENTS</td> <td>Used light tubes - breakable</td> </tr> <tr> <td>SHIPPING NAME</td> <td>NA ←</td> </tr> <tr> <td>UN</td> <td>NA ←</td> </tr> <tr> <td>ORIGIN</td> <td>Edmonds</td> </tr> <tr> <td>DATE</td> <td>June 1, 2008</td> </tr> </table> <p><small>Refer to MSDS if applicable. BCH STOCK #222-0357</small></p> <p>This is an internal BC Hydro number Not TDG or hazardous waste regulated</p> <p>Get waste labels from the MMBU Environmental Technical Specialist if necessary.</p> <p>If containers were used before, remove any labels that no longer apply.</p> <p>Note: If the lights are broken and are classed as hazardous waste, contact the MMBU Environmental Technical Specialist for assistance in completing waste labels.</p>	BC Hydro 		CONTAINER ID	FL 127 ←	CONTENTS	Used light tubes - breakable	SHIPPING NAME	NA ←	UN	NA ←	ORIGIN	Edmonds	DATE	June 1, 2008
BC Hydro 															
CONTAINER ID	FL 127 ←														
CONTENTS	Used light tubes - breakable														
SHIPPING NAME	NA ←														
UN	NA ←														
ORIGIN	Edmonds														
DATE	June 1, 2008														

Transport and Disposal of Unbroken Lights	Transport labeled boxes or containers of unbroken waste lights to Salvage Warehouse M for recycling/disposal. No documentation is required.
Transport and Disposal of Broken Lights	For lights that have been accidentally broken in transit, storage, or handling, dispose of as follows: <ul style="list-style-type: none"> • Fewer than 10: place broken glass and residue in a plastic bag and dispose of with regular garbage. • More than 10: place broken glass and residue in a plastic bag, then a sealed container and send to MMBU Salvage Warehouse M for disposal. Generally, no documentation is required. <p>Note: Under no circumstances are used mercury-containing tubes or lamps to be purposely broken and placed in bins destined for landfill.</p> <p>Note: Broken mercury-containing lights are classed as hazardous waste if they are in a quantity of 5 kg or more and leachate test results indicate a mercury concentration of 0.1 mg/L or more.</p> <p>If lights are broken and are classed as hazardous waste, contact the MMBU Environmental Technical Specialist for assistance on completing a manifest.</p>

Glossary - Definitions

Hazardous waste regulated: Regulated by the *BC Environmental Management Act and Hazardous Waste Regulation*.

Mercury: Elemental mercury including “clean” (new) and “dirty” (contaminated or used) mercury.

Mercury-contaminated material (MCM): Any manufactured item that contains mercury, or any substance or material that has become contaminated by mercury.

Shipping documentation: Whatever documents must go with a shipment.

Depending what and how much is being shipped, these documents could be one or more of the following:

- a bill of lading
- a full dangerous goods shipping document
- a document with information required by an exemption from TDG requirements
- a movement document/manifest
- a Permit for Equivalent Level of Safety

TDG regulated: Regulated by the *Transport of Dangerous Goods Act and Regulations* when transported.

References

Waste Labels

All containers and packages of mercury waste, including mercury-containing lights, must have a completed waste label.

Get waste labels from the MMBU Environmental Technical Specialist and fill in:

Container ID	A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label.
TDG Shipping Name	Use one of the following as applicable: <ul style="list-style-type: none"> Waste mercury – use for elemental mercury as liquid in a container which is not an instrument, piece of equipment like a switch or fluorescent tube (this is TDG and hazardous waste regulated) Leachable toxic waste (mercury) – use for mercury contaminated clean-up materials or wash water (this is hazardous waste regulated), or N/A or Not applicable – use for mercury contained in an instrument, piece of equipment or fluorescent tube (this is not TDG or hazardous waste regulated)
TDG PIN	Use one of the following as applicable: <ul style="list-style-type: none"> UN2809 – use for TDG regulated elemental mercury, or N/A or Not applicable – use for everything except TDG regulated elemental mercury
TDG Class	Use one of the following as applicable: <ul style="list-style-type: none"> 8 – use for TDG regulated elemental mercury, or N/A or Not applicable – use for everything except TDG regulated elemental mercury
Packing Group	Use one of the following as applicable: <ul style="list-style-type: none"> III – use for TDG regulated elemental mercury, or N/A or Not applicable – use for everything except TDG regulated elemental mercury
Shipped From	Location from where waste is being shipped. Complete at time of shipping.
Container	Number containers that contain the same waste (e.g. Container 1 of 3). Complete at time of shipping.
Produced By	Name of the person who is completing the label/filling the waste container
Produced From	Where the waste was generated (can be equipment or station) – for example: Arnott Substation
Date Produced	Actual date the waste container was filled and the label was completed – use the start date if the container is filled over

	time.
Phone	Phone number of person completing the label and filling the waste container
Waste Description	What is in the container – for example, Elemental mercury, Mercury contaminated clean-up materials, Mercury contaminated wash water. Switches containing mercury, or Used light tubes.
Check Boxes	Check as applicable: <ul style="list-style-type: none"> • Solid, or • Liquid

- Example 1: **Waste elemental mercury 5 kg or more**



BChydro  **WASTE LABEL** CONTAINER ID: HG 123

Shipping Information (TDG)

TDG Shipping Name: WASTE MERCURY

TDG PIN: UN 2809 TDG CLASS: 8 Packing Group: III

Shipped From: 6517 LADNER TRUNK RD, DELTA, BC Container 1 of 1

Waste Origin Information

Produced By: JOE SMITH Date Produced: 06 - 01 20 1 0

Produced From: ARNOTT SUBSTATION Phone: (604) ^(mm) 308 - ^(dd) 8116

Waste Information (Refer to MSDS if applicable)

Waste Description: ELEMENTAL MERCURY

WASTE OIL (required information)

Insulating _____ Lubricating _____ Hydraulic _____

PCB levels: _____ (ppm)

Lab Report #: _____

SOLID LIQUID GAS SLUDGE

FACILITY SOURCE:

Station ID: _____ Equip ID: _____

Spill Location: _____ (if applicable)

CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 904-590-7535 / 604-290-7671

to order: BC Hydro 420-0287

BC Hydro **WASTE LABEL** CONTAINER ID: HG 124

Shipping Information (TDG)

TDG Shipping Name: LEACHABLE TOXIC WASTE (MERCURY)
 TDG PIN: UN N/A TDG CLASS: N/A Packing Group: N/A
 Shipped From: 6517 LADNER TRUNK RD, DELTA, BC Container 1 of 3

Waste Origin Information

Produced By: JOE SMITH Date Produced: 06 - 01 20 1 0
 Produced From: ARNOTT SUBSTATION Phone: (604) ^(mm) 308 ^(dd) 8116

Waste Information (Refer to MSDS if applicable)

Waste Description: MERCURY
CONTAMINATED CLEAN-UP
MATERIALS

WASTE OIL (required information)
 Insulating _____ Lubricating _____ Hydraulic _____
 PCB levels: _____ (ppm)
 Lab Report # _____
 FACILITY SOURCE:
 Station ID: _____ Equip ID: _____
 Spill Location: _____
(if applicable)

SOLID LIQUID GAS SLUDGE

Comments: _____

CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 604-590-7535 / 604-590-7571
to order: BCF 5005 #250-0507

- Example 3: Mercury contaminated wash water 5 L or more

BC Hydro **WASTE LABEL** CONTAINER ID: HG 125

Shipping Information (TDG)

TDG Shipping Name: LEACHABLE TOXIC WASTE (MERCURY)
 TDG PIN: UN N/A TDG CLASS: N/A Packing Group: N/A
 Shipped From: 7056 BELL MCKINNON RD, DUNCAN, BC Container 1 of 1

Waste Origin Information

Produced By: JANET JONES Date Produced: 06 - 01 20 1 0
 Produced From: VIT Phone: (250) ^(mm) 308 ^(dd) 8116

Waste Information (Refer to MSDS if applicable)

Waste Description: MERCURY
CONTAMINATED WASH WATER

WASTE OIL (required information)
 Insulating _____ Lubricating _____ Hydraulic _____
 PCB levels: _____ (ppm)
 Lab Report # _____
 FACILITY SOURCE:
 Station ID: _____ Equip ID: _____
 Spill Location: _____
(if applicable)

SOLID LIQUID GAS SLUDGE

Comments: _____

CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 604-590-7535 / 604-590-7571
to order: BCF 5005 #250-0507

BC Hydro  **WASTE LABEL** CONTAINER ID: HG 126

Shipping Information (TDQ)

TDG Shipping Name: N/A
 TDG PIN: UN N/A TDG CLASS: N/A Packing Group: N/A
 Shipped From: 6517 LADNER TRUNK RD, DELTA, BC Container 1 of 1

Waste Origin Information

Produced By: BARRY GLOVER Date Produced: 06 - 01 20 1 0
 Produced From: INGLEDOW SUBSTATION Phone: (604) (309 ^{mm}) - 7438 ^{dd}

Waste Information (Refer to MSDS if applicable)

Waste Description: SWITCHES CONTAINING MERCURY WASTE OIL (required information)
 Insulating Lubricating Hydraulic
 PCB levels: _____ (ppm)
 Lab Report # _____
 SOLID LIQUID GAS SLUDGE
 FACILITY SOURCE:
 Station ID: _____ Equip ID: _____
 Spill Location: _____ (if applicable)

CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 604-590-7335 / 604-590-7571
 to order: BCH 3000 #22-0357

• Example 5: Unbroken mercury-containing lights

BC Hydro  **WASTE LABEL** CONTAINER ID: FL 127

Shipping Information (TDQ)

TDG Shipping Name: N/A
 TDG PIN: UN N/A TDG CLASS: N/A Packing Group: N/A
 Shipped From: 6911 SOUTHPOINT DR, BURNABY, BC Container 1 of 1

Waste Origin Information

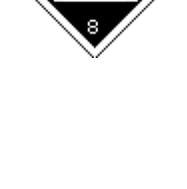
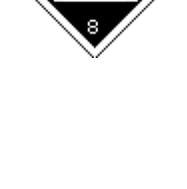
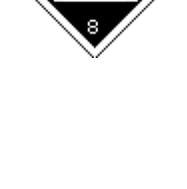
Produced By: CLARA WOODS Date Produced: 06 - 01 20 1 0
 Produced From: EDMONDS Phone: (604) (524 ^{mm}) - 3776 ^{dd}

Waste Information (Refer to MSDS if applicable)

Waste Description: USED LIGHT TUBES - BREAKABLE WASTE OIL (required information)
 Insulating Lubricating Hydraulic
 PCB levels: _____ (ppm)
 Lab Report # _____
 SOLID LIQUID GAS SLUDGE
 FACILITY SOURCE:
 Station ID: _____ Equip ID: _____
 Spill Location: _____ (if applicable)

CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 604-590-7335 / 604-590-7571
 to order: BCH 3000 #22-0357

Labels and Marking for TDG Regulated Waste Mercury

<p>TDG Labels and Marks</p>	<p>For elemental mercury less than 5 kg (370 ml) in a package with a gross mass less than 30 kg transported by surface (not by air), the words “Limited Quantity.” For more information, see Dangerous Goods in Little Containers.</p> <p>For instruments and equipment containing elemental mercury less than 5 kg (370 ml) transported by surface (not by air), no TDG labels or marks are required (exempted by <i>TDG Regulations</i>, section 1.29).</p> <p>For 5 kg or more elemental mercury or an instrument or piece of equipment containing 5 kg or more elemental mercury the TDG labels and marks are:</p> <ul style="list-style-type: none"> • shipping name: Waste – Mercury (can be written on the BC Hydro waste label) • UN number: UN2809 (can be written on the BC Hydro waste label if this is next to the hazard/class label) • diamond-shaped hazard/class label on the side (not the bottom or the top) <p>Where the containers are inside another container less than 450 L, for example vial of waste elemental mercury in a steel drum, the TDG labels and marks must be on the outer container.</p> <p>The UN number must be shown with the hazard/class label in one of the ways below:</p>										
<table border="1"> <thead> <tr> <th data-bbox="657 1087 841 1207">Types of Waste Mercury</th> <th data-bbox="849 1087 1084 1207">UN Number in White Box on the Label</th> <th data-bbox="1092 1087 1372 1207">UN Number Next to the Label</th> </tr> </thead> <tbody> <tr> <td data-bbox="657 1213 841 1333">Elemental Mercury 5kg or more</td> <td data-bbox="849 1213 1084 1333"></td> <td data-bbox="1092 1213 1372 1333"></td> </tr> <tr> <td data-bbox="657 1339 841 1591">Instrumental or Equipment Containing Elemental Mercury 5 kg or More</td> <td data-bbox="849 1339 1084 1591"></td> <td data-bbox="1092 1339 1372 1591"></td> </tr> </tbody> </table>	Types of Waste Mercury	UN Number in White Box on the Label	UN Number Next to the Label	Elemental Mercury 5kg or more			Instrumental or Equipment Containing Elemental Mercury 5 kg or More				
Types of Waste Mercury	UN Number in White Box on the Label	UN Number Next to the Label									
Elemental Mercury 5kg or more											
Instrumental or Equipment Containing Elemental Mercury 5 kg or More											
<p>The shipper must make sure that the labels and marks are on the containers before loading begins.</p> <p>The carrier must maintain the labels and marks during transport.</p>											

<p>UN Packaging Codes</p>	<p>For elemental mercury less than 5 kg (370 ml) in a package with a gross mass less than 30 kg transported by surface (not by air), UN packaging is not required. For more information see Dangerous Goods in Little Containers.</p> <p>For instruments and equipment containing elemental mercury less than 5 kg (370 ml) transported by surface (not by air), UN packaging is not required (exempted by <i>TDG Regulations</i>, section 1.29).</p> <p>For elemental mercury in containers of 5 kg or more, containers must have a packaging code like that on the below:</p> <p style="text-align: center;">  4G/Y2.7/S/01 CAN+AJ0344 </p> <p style="text-align: center;">(Click for explanation)</p> <p>For an instrument or piece of equipment containing 5 kg or more elemental mercury contact the MMBU Environmental Technical Specialist.</p>
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Waste Transport Information Table

Examples	Shipping Name	TDG Hazard Label	UN Number	Class	Packing Group
Container of elemental mercury 5 kg (370 ml) or more	Waste – Mercury		UN2809	8	III
Mercury-Contaminated clothing, rags, clean up materials 5 kg or more	Leachable toxic waste (Mercury)	None (Not TDG Regulated)	NA	NA	NA
Mercury-Contaminated Wash Water 5 L or more	Leachable toxic waste (Mercury)		NA	NA	NA
Electrical device containing less than 5 kg of elemental Mercury	NA		NA	NA	NA
Mercury contaminated clothing, rags, clean up materials less than 5kg	NA		NA	NA	NA
Mercury-Contaminated wash water less than 5 L	NA		NA	NA	NA

Paints and Coatings

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Introduction

Purpose: To document Environmental Best Management Practices for using or managing paint, based on a life-cycle approach from purchasing through to recycling or disposal.

Scope: The use and handling of paint except for:

- rags and sorbents used to clean up spills of paint – see EMBP – Rags and Sorbents
- solvents used to thin or clean up after use of paint – see EBMP – Solvent
- managing residues from operations such as sand or hydro-blasting used to remove paint – see EBMP – Blasting Abrasive Material

Note: This EBMP is over five years old and may contain out dated information. Please contact Environmental Risk Management prior to using this document.

Environmental Considerations

Choice of Paint	<p>Choose the paint that will have the least environmental impact over the life cycle of the item being painted. Sometimes a solvent-based paint that has to be applied only once will have less impact than a water-based paint that has to be applied many times.</p> <p>For example, when assessing alternatives, consider the frequency of application and the disposal of wastes generated during surface preparation before reapplication—on this basis a solvent-based paint that has to be applied only once may have less impact than a water-based paint that has to be applied many times.</p>
Environmental Hazards	<p>Spills or leaks can cause:</p> <ul style="list-style-type: none"> • environmental damage including contamination of ground and surface water and soil, harm to animal life, damage to assets, and unplanned expenditures for corrective action • non-compliance with environmental legislation
Avoidance of Mixing	<p>Do not mix waste paint of different types – for example solvent-based and water-based paint.</p>

<p><i>Transport of Dangerous Goods Regulations</i></p>	<p>Paints may or may not be regulated when transported.</p> <p>Solvent-Based Paint</p> <p>Most solvent-based paint is in class 3 under the <i>TDG Regulations</i>, although it may not be regulated.</p> <p>Paint in class 3 is not TDG regulated if all of the following apply:</p> <ul style="list-style-type: none"> • flash point is above 37.8 °C • paint is only in TDG class 3 (no other class is shown in brackets after class 3) • container size is less than 450 L • transport is by road, rail or domestic ship <p>The flash point and any TDG or DOT (US Department of Transport) classes are usually found in the sections of the paint MSDS called Product Information, Fire Fighting, Properties, Transport, Regulatory or something similar.</p> <p>Some solvent-based paint is in class 8 under the <i>TDG Regulations</i>. If paint is in class 8, it is usually the Part B, catalyst or cure component of a multi-part paint. Class 8 paint is always regulated to some extent.</p> <p>Water-Based Paint</p> <p>New or waste general-purpose water-based paint is not TDG regulated.</p> <p>New or waste specialty water-based paint could be TDG regulated – check the MSDS to find out if it is in any TDG class.</p>
<p><i>Environmental Management Act and Hazardous Waste Regulation</i></p>	<p>Waste paint that is in any TDG class or that is leachable toxic waste is hazardous waste and must be managed as per the <i>Hazardous Waste Regulation</i> and the <i>Environmental Management Act</i>.</p> <p>Waste paint which is not hazardous waste must still be managed as business waste per the <i>Environmental Management Act</i>. For example, do not dispose of water-based paint to storm drain.</p>
<p><i>Fisheries Act and Spill Reporting Regulation</i></p>	<p>The federal <i>Fisheries Act</i> requires reporting of spills or potential spills of paint in any quantity to:</p> <ul style="list-style-type: none"> • waters frequented by fish, or • areas adjacent to waters frequented by fish where the spill may enter the water or cause damage to fish habitat <p>Under the BC <i>Spill Reporting Regulation</i>, spills of paint must be reported if they are:</p> <ul style="list-style-type: none"> • more than 5 L for any waste paint • more than 5 L for new paint in class 8 (or class 8 and class 3) • more than 100 L for new paint in class 3 only • more than 200 L for any new paint not included above

General Management Principals

BC Hydro is committed to managing paint in an environmentally sound and responsible manner. In summary the main principles for managing paint are:

- Select paint to minimize negative environmental impacts over the life cycle of the item being painted (for example, when assessing alternatives, consider the frequency of application and disposal of wastes generated during surface preparation before reapplication)
- Use and handle paint to minimize risks to human health, property and the environment
- Use and handle paint according to applicable legislation and codes
- Use and handle paint in ways that prevent release to water or land, and that minimize releases to the air
- Do not mix different types of waste paint together or mix waste paint with other materials unless these are specifically intended for this purpose (for example, hardeners that are formulated to render residues non-leachable)
- Recycle paint as much as possible
- Dispose of paint that cannot be recycled so that environmental concerns associated with it are removed

Other sections of this best management practice provide more information for various specific situations.

Purchasing

Choice of Paint	<p>Choose a paint that:</p> <ul style="list-style-type: none"> • is approved for use by BC Hydro (contact Powertech Labs to check if a paint is approved) • has the minimum environmental impact over the life cycle of the item being painted (for example, when assessing alternatives, consider the frequency of application and the disposal of wastes generated during surface preparation before reapplication – on this basis a solvent-based paint that has to be applied only once may have less impact than a water-based paint that has to be applied many times) <p>If all other factors are equal, choose a paint where any surplus can be:</p> <ul style="list-style-type: none"> • used elsewhere • recycled (applies to aerosols and consumer-type paints – see the Product Care Association for a list of accepted materials and depot locations), or • disposed of locally
Quantity	Buy the smallest amount of paint needed for use and inventory requirements (to reduce leftovers and the amount stored).

Instructions for Disposal of Surplus Paint	<p>If surplus paint cannot be used elsewhere or recycled, get written disposal instructions from the paint supplier.</p> <p>For example, with multi-part paints it may be possible to mix surplus quantities of the component parts to produce a converted (reacted) material. If so, the supplier should specify in writing the range of mixing ratios that produce converted material suitable for landfill.</p> <p>Similarly, with water-based paint it may be possible to leave containers open so that any liquids evaporate to leave a solid material. If so, the supplier should specify in writing any procedures necessary to produce dried solids suitable for landfill.</p>
Hazard Information	<p>Make sure:</p> <ul style="list-style-type: none"> • an MSDS suitable for use in Canada is available on the BC Hydro MSDS system or is supplied with the paint • containers have labels, including WHMIS labels if the paint is in any WHMIS class <p>Note: Consumer products bought at retail outlets do not have to have WHMIS labels. However, if these products are used in the workplace and are in one or more WHMIS classes, there must be an MSDS on site, and workplace WHMIS labels must be put on the containers.</p>

Using and Handling of Paint

Use and handle paint in accordance with the requirements of the *WCB Occupational Health & Safety Regulation* and BC Hydro OSH Standard 301: [WHMIS and Hazardous Materials](#) . Other OSH Standards that may apply include 313: [Respiratory Protection](#) and 314: [Lead Abatement](#) . For assistance, contact your OSH Specialist.

Transport

Transporting New Paint and Coatings

The requirements for transporting paint depend on its hazards (whether it is TDG regulated) and the size of containers it is packed in.

To transport paint safely without unnecessary requirements, review the table below and go to the link for the situation where **all** the listed conditions apply. If more than one situation applies, choose the first-listed situation that applies – it is generally the least restrictive.

Situation	Conditions
Water-based paint in cans or pails	<ul style="list-style-type: none"> • not TDG regulated (unless known otherwise, assume that general-purpose water-based paints are not TDG regulated) • capacity of each can or pail less than 30 L
Water-based paint in drums or totes	<ul style="list-style-type: none"> • not TDG regulated (unless known otherwise, assume that general purpose water-based paints are not TDG regulated)

Aerosols	<ul style="list-style-type: none"> gross mass of each package (for example a cardboard box) less than 30 kg water capacity of each aerosol less than 1 L transport not by air or by mail
TDG regulated paint in cans (no restriction on flash point)	<ul style="list-style-type: none"> each can less than 5 L gross mass of each package of cans less than 30 kg transport not by air or by mail
TDG regulated paint in a service vehicle (no restriction on flash point)	<ul style="list-style-type: none"> transported in a compartment of a service vehicle total gross mass of dangerous goods on the service vehicle less than 500 kg gross mass of dangerous goods in each compartment less than 30 kg each compartment used for dangerous goods has the words <i>Dangerous Goods</i> on the front cover carrier has up-to-date training in the <i>TDG Regulations</i> and a valid <i>TDG Certificate of Training</i>
High-flash point oil-based paint in pails or drums	<ul style="list-style-type: none"> flash point above 37.8°C (check the MSDS) the paint is only in class 3 (no other class is shown in brackets after class 3 on the MSDS) container capacity less than 450 L not by air or mail
Fully TDG regulated paint (no situation listed above applies)	

Shipping New Non-TDG Regulated Water-Based Paint in Cans or Pails

Note: This section also applies to empty containers

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Condition and Leak Check	Check that containers or packages are in good condition and suitable for transport.
Closure Check	Make sure that all containers are properly closed.
Packaging	Preferred packaging for cans is in small closed boxes. Package to: <ul style="list-style-type: none"> keep containers upright prevent leaks or spills during expected conditions of transport

Labels	Make sure that: <ul style="list-style-type: none"> • containers have labels including WHMIS labels if required (check the MSDS) • packages have labels Remove or erase any labels that do not apply.
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Shipping: Loading

The shipper is responsible for the following:

Precautions	Make sure the carrier has a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that the carrier secures the containers or packages so that containers: <ul style="list-style-type: none"> • are upright • will not shift or be damaged in transit

Carrying New Non-TDG Regulated Water-Based Paint in Cans or Pails

Note: This section also applies to empty containers

Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Labels	Check that: <ul style="list-style-type: none"> • any unpackaged containers have labels including WHMIS labels if required (check the MSDS) • packages have labels • the labels are consistent with what is on any shipping documentation
Packaging and Leak Check	Check that containers and packaging are in good condition and suitable for transport.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded.

Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Secure the containers or packages so that containers: <ul style="list-style-type: none"> • are upright • will not shift or be damaged in transit

Carrying: In Transit

The carrier is responsible for the following:

Spill Response	Follow guidelines on the Spill Response Card in case of a spill.
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Receiving New Non-TDG Regulated Water-Based Paint in Cans or Pails

Note: This section also applies to empty containers

Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Shipment Check	Make sure that: <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the containers If leaks or bad containers are found: <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see "Spill Response" for clean-up of any leakage

Transporting New Non-TDG Regulated Water-Based Paint in Drums or Totes

Note: this section also applies to empty containers

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use universal sorbents on water-based materials.</p> <p>Note: Unless known otherwise, waste sorbents from clean-up of spills of general-purpose water-based paint can be handled as non-hazardous waste.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Condition and Leak Check	<p>Check that containers and any packing are in good condition and suitable for transport.</p> <p>This means containers:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are not cracked <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see “Spill Response” for clean-up of any leakage
Closure Check	Make sure that all containers are properly closed.
Packaging	<p>Preferred packaging for drums/barrels is strapped onto pallets in good condition.</p> <p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead – do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g. sharp edges)

Labels	Make sure that containers have labels including WHMIS labels if required (check the MSDS). Remove or erase any labels that do not apply.
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Shipping: Loading

The shipper is responsible for the following:

Precautions	Check that the carrier has sorbents and a copy of the Spill Response Card on the truck.
Loading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit. Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use universal sorbents on water-based materials. Note: Unless known otherwise, waste sorbents from clean-up of spills of general-purpose water-based paint can be handled as non-hazardous waste. Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).

Labels	Check that: <ul style="list-style-type: none"> containers have labels including WHMIS labels if required (check the MSDS) the labels are consistent with what is on any shipping documentation
Packaging and Leak Check	Check that containers and packaging are in good condition and suitable for transport. This means: <ul style="list-style-type: none"> containers are tightly closed and do not leak or bulge containers are not cracked or significantly rusted, dented, or damaged any packaging (e.g. pallets, or strapping) is not damaged Do not accept materials unsuitable for transport unless fully contained in an overpack.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> containers are upright the load will not shift during transport <ul style="list-style-type: none"> in a trailer, the load is strapped or tied to both walls and floor on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides in a pickup, the load is strapped to the sides of the box no sharp edges might damage or puncture the load no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.
Spill Reporting – Verbal, Internal	Report any spill involving paint in transit. BC Hydro Employees Report to: <ul style="list-style-type: none"> work leader or manager, and owner of the vehicle if it is not a BC Hydro vehicle Contractors Report to: <ul style="list-style-type: none"> BC Hydro person arranging the transport

	<ul style="list-style-type: none"> • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="634 422 1382 527"> <tr> <td data-bbox="634 422 813 474">Edie Thome</td> <td data-bbox="813 422 1084 474">Tel. 604.528.3419</td> <td data-bbox="1084 422 1382 474">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="634 474 813 527">Lisa Seppala</td> <td data-bbox="813 474 1084 527">Tel. 604.528.2500</td> <td data-bbox="1084 474 1382 527">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 200 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>To maintain good relations, the environmental specialist receiving the Incident Reports should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External-Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 200 L:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact Environmental Risk Management for advice on further notification.</p>						

Spill Reporting	The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.
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Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use universal sorbents on water-based materials.</p> <p>Note: Unless known otherwise, waste sorbents from clean-up of spills of general-purpose water-based paint can be handled as non-hazardous waste.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the containers <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see “Spill Response” for clean-up of any leakage
Acceptance	Accept the shipment based on the above checks.
Unloading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .

Transporting New Aerosol Paint Cans

Transport of aerosol paint cans is exempt from most requirements of the TDG regulations as long as:

- the water capacity of each can is less than 1 L
- the aerosol cans are packaged and secured to prevent leakage or damage in transport
- the gross mass of each package (for example a cardboard box) is less than 30 kg
- packages, or individual cans if they are not packaged, are clearly marked on one side (not the top or bottom) *Limited Quantity, Ltd. Qty., or Consumer Commodity*
- shipment is not by air or by mail



Note: If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.	
Aerosol Check	Make sure that: <ul style="list-style-type: none"> • aerosols are not damaged • all cans are less than 1 L • caps are in place or that valves are otherwise protected 	
Packaging	Preferred packaging for aerosols is in small closed boxes as shown in the picture. Package to: <ul style="list-style-type: none"> • prevent damage during expected conditions of transport • keep the gross mass per package less than 30 kg 	
Labels	As shown in the picture, make sure that: <ul style="list-style-type: none"> • aerosols have WHMIS labels • packages and any unpackaged aerosols are clearly labeled or marked with the words <i>Limited Quantity</i>, <i>Ltd. Qty.</i>, or <i>Consumer Commodity</i> on one side (not the top or the bottom) Remove or erase any labels that do not apply.	
Documentation	If the gross mass of all packages is more than 500 kg, write the words <i>Limited Quantity</i> on a bill of lading or other shipping documentation and give it to the carrier.	

Shipping: Loading

The shipper is responsible for the following:

Precautions	Make sure the carrier has a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Loading Check	Check that packages or individual aerosols loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that the carrier secures the packages or individual aerosols so that they will not shift or be damaged in transit.

Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Labels	Check that: <ul style="list-style-type: none"> • any unpackaged aerosols have WHMIS labels • packages and any unpackaged aerosols are clearly labelled or marked with the words <i>Limited Quantity, Ltd. Qty.</i>, or <i>Consumer Commodity</i> on one side (not the top or the bottom) • the labels are consistent with what is on any shipping documentation
Packaging and Leak Check	Check that: <ul style="list-style-type: none"> • any packages or individual aerosols are in good condition and not leaking • individual cans are less than 1 L (ask the shipper if cans are packaged) • any packages are less than 30 kg gross mass
Acceptance	Accept the shipment for transport based on the above checks and have it loaded.
Documentation	If the gross mass of all packages is more than 500 kg, make sure the words <i>Limited Quantity</i> are written on a bill of lading or other shipping documentation. Keep this in the place specified by the <i>TDG Regulations</i> . See Document Locations if needed.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Secure any packages or individual aerosols so that they will not shift or be damaged in transit.

Carrying: In Transit

The carrier is responsible for the following:

Spill Response	Follow guidelines on the Spill Response Card in case of a spill.
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Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Shipment Check	Make sure that: <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the aerosols

Transporting New TDG Regulated Paint in Cans

Transport of TDG regulated paint in cans is exempt from most requirements of the TDG regulations as long as:

- each can is less than 5 L
- the cans are packaged and secured to prevent leakage or damage in transport
- the gross mass of each package (for example a cardboard box) is less than 30 kg
- packages, or individual cans if they are not packaged, are clearly marked on one side (not the top or bottom) *Limited Quantity, Ltd. Qty., or Consumer Commodity*
- shipment is not by air or by mail

Shipping: Preparing

Note: If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty cans.

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use: <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors <p>Note: Handle waste sorbents from clean-up of paint spills as</p>

	hazardous waste unless known otherwise-see EBMP – Rags and Sorbents.
Container Check	Check that: <ul style="list-style-type: none"> • cans or packages are in good condition and suitable for transport • all cans are properly closed and less than 5 L
Packaging	Preferred packaging for cans is in small closed boxes. Package to: <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport <ul style="list-style-type: none"> – keep the gross mass per package less than 30 kg
Labels	Make sure that: <ul style="list-style-type: none"> • containers have WHMIS labels • packages and any unpackaged containers are clearly labeled or marked with the words <i>Limited Quantity, Ltd. Qty.</i>, or <i>Consumer Commodity</i> on one side (not the top or the bottom) Remove or erase any labels that do not apply.
Documentation	If the gross mass of all packages is more than 500 kg, write the words <i>Limited Quantity</i> on a bill of lading or other shipping documentation and give it to the carrier.

Shipping: Loading

The shipper is responsible for the following:

Precautions	Make sure the carrier has a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Loading Check	Check that packages or individual cans loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that the carrier secures the packages or individual cans so that cans: <ul style="list-style-type: none"> • are upright • will not shift or be damaged in transit

Carrying: Accepting

If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty cans.

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.</p> <p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on.</p> <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise-see EBMP – Rags and Sorbents.</p>
Labels	<p>Check that:</p> <ul style="list-style-type: none"> • any unpackaged containers have WHMIS labels • packages and any unpackaged containers are clearly labeled or marked with the words <i>Limited Quantity, Ltd. Qty.</i>, or <i>Consumer Commodity</i> on one side (not the top or the bottom) • the labels are consistent with what is on any shipping documentation
Packaging and Leak Check	<p>Check that:</p> <ul style="list-style-type: none"> • any packages or individual cans are in good condition and not leaking • individual cans are less than 5 L (ask the shipper if cans are packaged) • any packages are less than 30 kg gross mass
Acceptance	Accept the shipment for transport based on the above checks and have it loaded.
Documentation	If the gross mass of all packages is more than 500 kg, make sure the words <i>Limited Quantity</i> are written on a bill of lading or other shipping documentation. Keep this in the place specified by the TDG Regulations. See Document Locations if needed.
Loading Check	Check that the cans or packages loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	<p>Secure the cans or packages so that cans:</p> <ul style="list-style-type: none"> • are upright • will not shift or be damaged in transit

Carrying: In Transit

The carrier is responsible for the following:

Spill Response	Follow guidelines on the Spill Response Card in case of a spill.
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Receiving: Unloading

Note: This section also applies to empty cans

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p>
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the cans or packages <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage according to the type of spill concerned

Transporting New TDG Regulated Paint in a Service Vehicle

Transport of TDG regulated paint in the compartments of a service vehicle is exempt from most requirements of the TDG regulations as long as:

- the cans or pails are packaged and secured to prevent leakage or damage in transport
- the gross mass of dangerous goods in each compartment is less than 30 kg
- the total gross mass of dangerous goods on the vehicle is less than 500 kg
- each compartment used for dangerous goods has the words *Dangerous Goods* on the front cover
- the dangerous goods are transported with a copy of BC Hydro's [Service Vehicle Permit](#) 
- the carrier has up-to-date training in the *TDG Regulations* and a valid *TDG Certificate of Training*

Shipping: Planning

Note: This section also applies to empty cans.

The shipper is responsible for the following:

TDG Training	When arranging transport, make sure the carrier has: <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
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Shipping: Preparing

The shipping was responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact OSH Specialist.
Precautions	Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use: <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p>
Condition and Leak Check	Check that: <ul style="list-style-type: none"> • containers or packages are in good condition and suitable for transport • all containers or packages are properly closed • any packages are less than 30 kg gross mass
Labels	Make sure that any unpackaged containers have WHMIS labels. Remove or erase any labels that do not apply.

Shipping: Loading

The shipper is responsible for the following:

TDG Training	Make sure the carrier's <i>TDG Certificate of Training</i> has not expired.
Service Vehicle Permit	Give the carrier a valid copy of BC Hydro's Service Vehicle Permit if the carrier does not have one.
Precautions	Make sure the carrier has a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.

Loading Check	Check that: <ul style="list-style-type: none"> the gross mass of dangerous goods in each compartment is not more than 30 kg the total mass of dangerous goods on the service vehicle is not more than 500 kg
Compartment Warning	Make sure that each compartment used for dangerous goods has the words <i>Dangerous Goods</i> on the front cover.
Load Safe and Secure	Check that the carrier secures the packages or individual containers in the service vehicle compartments so that the containers: <ul style="list-style-type: none"> are upright will not shift or be damaged in transit

Carrying: Accepting

Note: This section also applies to empty containers

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit. Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.
TDG Training	Have: <ul style="list-style-type: none"> up-to-date training in the <i>TDG Regulations</i> a valid TDG Certificate of Training
Service Vehicle Permit	Get a valid copy of BC Hydro's Service Vehicle Permit if you do not have one.
Labels	Check that any unpackaged containers have WHMIS labels.
Packaging and Leak Check	Check that: <ul style="list-style-type: none"> any packages or individual cans are in good condition and not leaking all containers or packages are properly closed any packages are less than 30 kg gross mass

Acceptance	Accept the shipment for transport based on the above checks and have it loaded. Note: The carrier is not allowed to take passengers if the mass of paint per package is more than the quantity limit.
Loading Check	Check that: <ul style="list-style-type: none"> gross mass of dangerous goods in each compartment is not more than 30 kg total mass of dangerous goods on the service vehicle is not more than 500 kg
Compartment Warning	Make sure that each compartment used for dangerous goods has the words <i>Dangerous Goods</i> on the front cover.
Load Safe and Secure	Secure the containers or packages so that containers: <ul style="list-style-type: none"> are upright will not shift or be damaged in transit

Carrying: In Transit

The carrier is responsible for the following:

Service Vehicle Permit	Keep a copy of BC Hydro's Service Vehicle Permit in the place specified by the <i>TDG Regulations</i> . See Document Locations if needed.
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.

Receiving: Unloading

Note: This section also applies to empty containers

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use: <ul style="list-style-type: none"> oil-sorbents on oil-based materials non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.

Shipment Check	<p>Make sure that there are no signs of leakage from the containers.</p> <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage according to the type of spill concerned
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Transporting New Non-TDG Regulated Solvent-Based Paint

Transport of paint in class 3 is **not** TDG regulated if **all** of the following apply:

- flash point is above 37.8 °C
- paint is only in TDG class 3
- container size is less than 450 L
- transport is by road, rail or domestic ship

Note: The sections below also apply to empty containers.

Shipping: Preparing

If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section applies to: non-regulated oil-based paint in containers less than 450 L and empty containers

The shipper is responsible for the following:

Safety	<p>Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.</p>
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>

Condition and Leak Check	Check that containers and any packing are in good condition and suitable for transport. This means containers: <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented or damaged • are not cracked If leaks or bad containers are found: <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see “Spill Response” for clean-up of any leakage
Closure Check	Make sure that all containers are properly closed.
Packaging	Preferred packaging for: <ul style="list-style-type: none"> • cans is in small closed boxes • drums/barrels is strapped onto pallets in good condition Package to: <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead – do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g. sharp edges)
Labels	Make sure that containers have WHMIS labels. Remove or erase any labels that do not apply.

Shipping: Loading

The shipper is responsible for the following

Precautions	Check that the carrier has sorbents and a copy of the Spill Response Card on the truck.
Loading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.

<p>Load Safe and Secure</p>	<p>Check that:</p> <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Carrying: Accepting

If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section applies to non-regulated oil-based paint in containers less than 450 L and empty containers

The carrier is responsible for the following:

<p>Safety</p>	<p>Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.</p>
<p>Precautions</p>	<p>Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.</p> <p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on.</p> <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
<p>Labels</p>	<p>Check that:</p> <ul style="list-style-type: none"> • containers have WHMIS labels • the labels are consistent with what is on any shipping documentation

Packaging and Leak Check	Check that containers and packaging are in good condition and suitable for transport. This means: <ul style="list-style-type: none"> • containers are tightly closed and do not leak or bulge • containers are not cracked or significantly rusted, dented, or damaged • any packaging (e.g. pallets, or strapping) is not damaged Do not accept materials unsuitable for transport unless fully contained in an overpack.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.
Spill Reporting – Verbal, Internal	Report any spill involving paint in transit. BC Hydro Employees Report to: <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle Contractors Report to: <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.

	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231
	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Spill Reporting – Verbal, External	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> name and phone number of the person providing notification of the spill name and phone number of the spiller location, time, and date of the spill material spilled and quantity cause and effect of the spill action taken or proposed action to contain the spill duration of the spill weather conditions planned follow-up government agencies on the scene persons or agencies advised <p>In addition, if the spill is more than the 100 L, also notify:</p> <ul style="list-style-type: none"> local police CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the Incident Report should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External-Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact Environmental Risk Management for advice on further notification.</p>		

Spill Reporting	The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.
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Receiving: Unloading

Note: This section applies to non-regulated oil-based paint in containers less than 450 L and empty container.

The receiver is also responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the containers <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see “Spill Response” for clean-up of any leakage
Acceptance	Accept the shipment based on the above checks.
Unloading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .

Transporting New TDG Regulated Paint

If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty containers.

Shipping: Planning

The shipper is responsible for the following:

TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training <p>When arranging transport, specify that the carrier must have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
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Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors • universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Condition and Leak Check	<p>Check that containers and any packing are in good condition and suitable for transport. This means containers:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged http://w3t3/sustainability/tools/bmp/materials/gen_refs/ref_unps.shtml • are marked with a packaging code like that at the right unless an exemption allows otherwise <div style="text-align: right;">  <p>(Click for explanations)</p> </div> <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container

	<ul style="list-style-type: none"> see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage according to the type of spill concerned
Closure Check	Make sure that all containers are properly closed.
Packaging	<p>Preferred packaging for:</p> <ul style="list-style-type: none"> cans is in small closed boxes drums/barrels is strapped onto pallets in good condition <p>Package to:</p> <ul style="list-style-type: none"> keep containers upright prevent leaks or spills during expected conditions of transport allow safe unloading at the receiving location (call ahead – do not assume the receiving location has the same facilities as the shipping location) keep separate from other materials that might damage the container in transit (e.g. sharp edges) <p>Note: To allow proper labeling, do not put TDG regulated materials with different shipping names or hazard classes together in the same package.</p> <p>If the shipment is being made under an exemption, make sure the mass per package and the total amount of the shipment are less than any limits for the exemption to apply.</p>
Labels	<p>Make sure that:</p> <ul style="list-style-type: none"> containers have WHMIS labels packages and any unpackaged containers have “TDG markings” <p>Remove or erase any labels that do not apply.</p>
Documentation	<p>Complete a shipping document unless all conditions allowing an exemption apply.</p> <p>See:</p> <ul style="list-style-type: none"> MSDS for the shipping name, UN number, class, and packing group See “Placards” for placards How to Complete a Shipping Document if needed <p>Note: The shipping documentation must show the amount of the dangerous goods in kilograms or litres. The amount in used containers does not have to be measured if the container is less than 10 percent full and the documentation shows <i>Residue – last contained</i> followed by the shipping name.</p>

Shipping: Loading

The shipper is responsible for the following:

Precautions	Check that the carrier has sorbents and a copy of the Spill Response Card on the truck.
TDG Training	Make sure that the carrier's <i>TDG Certificate of Training</i> has not expired.
Placards	<p>Make sure that placards are on all four sides of a transport unit before loading if the gross mass of dangerous goods is more than 500 kg in a single unit. This applies to containers like skid tubs or tote boxes as well as transport trucks. See "Placards" to show which placards to use.</p> <p>The shipper must offer to provide the placards if they are needed.</p>
Loading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.
Load Safe and Secure	<p>Check that:</p> <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
Documentation	<p>If the load is being transported under an exemption, provide the carrier with:</p> <ul style="list-style-type: none"> • a copy of the bill of lading for the shipment, and • any document or permit the exemption says is needed <p>Otherwise:</p> <ul style="list-style-type: none"> • have the carrier sign all copies when accepting the shipment • keep the Consignor (Shipper) copy on file for at least two years • give the other copies to the carrier

Carrying: Accepting

If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty containers.

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.</p> <p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP - Rags and Sorbents.</p>
TDG Training	<p>Have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Labels	<p>Check that:</p> <ul style="list-style-type: none"> • containers have WHMIS labels • packages and any unpackaged containers have “TDG markings” • the labels are consistent with what is on the shipping documentation • the containers are marked with a packaging code like that at the right unless an exemption allows otherwise <div style="text-align: right;">  </div>
Packaging and Leak Check	<p>Check that containers and packaging are in good condition and suitable for transport.</p> <p>This means:</p> <ul style="list-style-type: none"> • packaged materials are not leaking • outer containers are closed (applies to outermost container where little containers are inside another container) • any packaging (e.g. boxes, pallets, shrink-wrap, or strapping is not damaged) <p>Do not accept materials unsuitable for transport unless fully contained in an overpack.</p>
Placards	Make sure that placards are on all four sides of a transport unit

	<p>before loading if the gross mass of dangerous goods is more than 500 kg in a single unit. This applies to containers like skid tubs or tote boxes as well as transport trucks. See “Placards” to show which placards to use.</p> <p>The shipper must offer to provide the placards if they are needed.</p>
Acceptance	<p>Accept the shipment for transport based on the above checks and have it loaded.</p> <p>If the load is being transported under an exemption:</p> <ul style="list-style-type: none"> • check that the terms of the exemption apply • take any document or permit the exemption says is needed <p>If the load is being transported using a shipping document, sign all copies and return the Consignor (Shipper) copy to the shipper.</p> <p>Note: The carrier is not allowed to take passengers if the amount of paint per package is more than the quantity limit.</p>
Loading Check	<p>Check that the containers loaded match the descriptions and quantities given on the shipping documentation.</p>
Load Safe and Secure	<p>Check that:</p> <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	<p>Keep a copy of the shipping documentation in the place specified by the <i>TDG Regulations</i>. See Document Locations if needed.</p>
Placards	<p>Replace any lost or damaged placards, if placards are needed. See “Placards” if needed.</p>
Load Check	<p>Check the load at least every 8 hours to make sure it has not shifted or started to leak.</p>
Spill Response	<p>Follow guidelines on the Spill Response Card in case of a spill.</p>

<p>Spill Reporting – Verbal, Internal</p>	<p>Report any spill involving paint in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="634 751 1382 856"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L for Paint in Class 3 or more than 5 L for Paint in Class 8):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is more than 100 L for paint in Class 3 or more than 5 L for paint in Class 8, also notify:</p>						

	<ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the Incident Report should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External –Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L for Paint in Class 3 or Less than 5 L for Paint in Class 8 :</p> <p>For spills to land less than 100 L for solvent in Class 3 or less than 5 L for solvent in Class 6.1 where there is potential for the spill to reach water, contact Environmental Risk Management for advice on further notification.</p>
Spill Reporting	The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.

Carrying: Delivering

The carrier is responsible for the following:

Receiver Signature	If a shipping document was used, have the receiver sign the Carrier copy when accepting the shipment. Give a copy of the shipping documentation to the receiver.
Copies	If a shipping document was used, keep the Carrier copy on file for at least two years.
Removal of Placards	Remove or cover the placards after unloading, unless cleaning is needed to remove leaked or spilt dangerous goods. If cleaning is needed, remove the placards after cleaning.

Receiving

Note: This section also applies to empty containers.

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
TDG Training	Have, or work under the supervision and in the presence of someone who has: <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training

Precautions	Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use: <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors • universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents. Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Shipment Check	Make sure that: <ul style="list-style-type: none"> • what is received agrees with what is on the shipping documentation • there are no signs of leakage from the containers If leaks or bad containers are found: <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage according to the type of spill concerned
Acceptance	Accept the shipment based on the above checks. If a shipping document was used for transporting the shipment: <ul style="list-style-type: none"> • sign the Carrier copy • return the Carrier copy to the carrier
Unloading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .

Transporting Waste Paint and Coatings

The requirements for transporting paint depend on its hazards (whether it is TDG regulated) and the size of containers it is packed in.

To transport paint safely without unnecessary requirements, review the table below and go to the link for the situation where all the listed conditions apply. If more than one situation applies, choose the first-listed situation that applies – it is generally the least restrictive.

Note: The flash point and any TDG or DOT classes are usually found in the sections of the paint MSDS called Product Information, Fire Fighting, Properties, Transport, Regulatory or something similar.

Situation	Conditions
Water-based paint in cans or pails	<ul style="list-style-type: none"> • non-hazardous (unless known otherwise, assume that general-purpose water-based paints are not TDG regulated or hazardous waste) • capacity of each can or pail less than 30 L
Water-based paint in drums or totes	<ul style="list-style-type: none"> • non-hazardous (unless known otherwise, assume that general purpose water-based paints are not TDG regulated or hazardous waste)
Aerosols	<ul style="list-style-type: none"> • gross mass of each package (for example a cardboard box) less than 30 kg • water capacity of each aerosol less than 1 L • transport not by air or by mail
TDG regulated/ hazardous paint in cans (no restriction on flash point)	<ul style="list-style-type: none"> • each can less than 5 L • gross mass of each package of cans less than 30 kg • transport not by air or by mail
TDG regulated/ hazardous paint in a service vehicle (no restriction on flash point)	<ul style="list-style-type: none"> • transported in a compartment of a service vehicle • total gross mass of dangerous goods on the service vehicle less than 500 kg • gross mass of dangerous goods in each compartment less than 30 kg • each compartment used for dangerous goods has the words <i>Dangerous Goods</i> on the front cover • carrier has up-to-date training in the <i>TDG Regulations</i> and a valid <i>TDG Certificate of Training</i>
High-flash point oil-based paint in pails or drums	<ul style="list-style-type: none"> • flash point above 37.8°C (check the MSDS) • the paint is only in class 3 (no other class is shown in brackets after class 3 on the MSDS) • container capacity less than 450 L • not by air or mail
Fully TDG regulated hazardous paint (no situation listed above applies)	

Transporting Waste Non-Hazardous Water-Based Paint in Cans or Pails

Note: This section also applies to empty containers.

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Condition and Leak Check	Check that containers or packages are in good condition and suitable for transport.
Closure Check	Make sure that all containers are properly closed.
Packaging	<p>Preferred packaging for:</p> <ul style="list-style-type: none"> • cans is in small closed boxes • pails is in a poly-lined skid tub with strap-down lid  <p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport
Labels	<p>Make sure that:</p> <ul style="list-style-type: none"> • containers have WHMIS labels if required (check the MSDS) • packages and any unpackaged containers have waste labels <p>Remove or erase any labels that do not apply.</p>
Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.

Shipping: Loading

The shipper is responsible for the following:

Precautions	Make sure the carrier has a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.

Load Safe and Secure	Check that the carrier secures the containers or packages so that containers: <ul style="list-style-type: none"> • are upright • will not shift or be damaged in transit
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Carrying: Accepting

Note: This section also applies to empty containers

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Labels	Check that: <ul style="list-style-type: none"> • any unpackaged containers have “WHMIS labels” if required (check the MSDS) • packages and any unpackaged containers have “waste labels” • the labels are consistent with what is on any shipping documentation
Packaging and Leak Check	Check that containers and packaging are in good condition and suitable for transport.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Secure the containers or packages so that containers: <ul style="list-style-type: none"> • are upright • will not shift or be damaged in transit

Carrying: In Transit

The carrier is responsible for the following:

Spill Response	Follow guidelines on the Spill Response Card in case of a spill.
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Receiving

Note: this section also applies to empty containers

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the containers <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see “Spill Response” for clean-up of any leakage

Transporting Waste Non-Hazardous Water-Based Paint in Drums or Totes

Note: the sections below also apply to empty containers

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use universal sorbents on water-based materials.</p> <p>Note: Unless known otherwise, waste sorbents from clean-up of spills of general-purpose water-based paint can be handled as non-hazardous waste.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>

Condition and Leak Check	Check that containers and any packing are in good condition and suitable for transport. This means containers: <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are not cracked If leaks or bad containers are found: <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see “Spill Response” for clean-up of any leakage
Closure Check	Make sure that all containers are properly closed.
Packaging	Preferred packaging for drums/barrels is strapped onto pallets in good condition. Package to: <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead – do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g. sharp edges)
Labels	Make sure that: <ul style="list-style-type: none"> • containers have “WHMIS” labels if required (check the MSDS) • containers have waste labels Remove or erase any labels that do not apply.
Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.

Shipping: Loading

The shipper is responsible for the following:

Precautions	Check that the carrier has sorbents and a copy of the Spill Response Card on the truck.
Loading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.

Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Carrying: Accepting

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit. Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use universal sorbents on water-based materials. Note: Unless known otherwise, waste sorbents from clean-up of spills of general-purpose water-based paint can be handled as non-hazardous waste. Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).
Labels	Check that: <ul style="list-style-type: none"> • containers have “WHMIS labels” if required (check the MSDS) • containers have waste labels • the labels are consistent with what is on any shipping documentation
Packaging and Leak Check	Check that containers and packaging are in good condition and suitable for transport. This means: <ul style="list-style-type: none"> • containers are tightly closed and do not leak or bulge • containers are not cracked or significantly rusted, dented, or damaged • any packaging (e.g. pallets, or strapping) is not damaged Do not accept materials unsuitable for transport unless fully contained in an overpack.

Acceptance	Accept the shipment for transport based on the above checks and have it loaded.
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.						
Spill Reporting – Verbal, Internal	Report any spill involving paint in transit. BC Hydro Employees Report to: <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle Contractors Report to: <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.						
	<table border="1"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 200 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>To maintain good relations, the environmental specialist receiving the Incident Report should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External-Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 200 L:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the Environmental Risk Management for advice on further notification.</p>
<p>Spill Reporting</p>	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Receiving

Note: This section also applies to empty containers.

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use universal sorbents on water-based materials.</p> <p>Note: Unless known otherwise, waste sorbents from clean-up of spills of general-purpose water-based paint can be handled as non-hazardous waste.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g., use a drain cover).</p>
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the containers <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see Spill Response for clean-up of any leakage
Acceptance	Accept the shipment based on the above checks.
Unloading Equipment and Methods	Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks .

Transporting Waste Paint Aerosols

Transport of waste aerosol paint cans is exempt from most requirements of the TDG regulations as long as:

- the water capacity of each can is less than 1 L
- the aerosol cans are packaged and secured to prevent leakage or damage in transport
- the gross mass of each package (for example a cardboard box) is less than 30 kg
- packages, or individual cans if they are not packaged, are clearly marked on one side (not the top or bottom) *Limited Quantity, Ltd. Qty., or Consumer Commodity*
- shipment is not by air or by mail

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.	
Aerosol Check	Make sure that: <ul style="list-style-type: none"> • aerosols are not damaged • all cans are less than 1 L • caps are in place or that valves are otherwise protected 	
Packaging	Preferred packaging for aerosols is in small closed boxes as shown in the picture. Package to: <ul style="list-style-type: none"> • prevent damage during expected conditions of transport • keep the gross mass per package less than 30 kg 	
Labels	As shown in the picture, make sure that: <ul style="list-style-type: none"> • aerosols have “WHMIS labels” • packages and any unpackaged aerosols have waste labels • packages and any unpackaged aerosols are clearly marked with the words <i>Limited Quantity, Ltd. Qty.</i>, or <i>Consumer Commodity</i> Remove or erase any labels that do not apply.	
Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.	
Hazardous Waste Transport Licence	When arranging road transport, specify that the carrier must have a Hazardous Waste Transport Licence if one is needed. See Hazardous Waste Transport Licence Requirements. If a Hazardous Waste Transport Licence is needed, check that: <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying waste paint • the licence has not expired 	

Shipping: Paperwork

The shipper is responsible for the following:

Consignor (Shipper) Information	<p>Complete Part A of a movement document/manifest if the total water capacity of all the aerosols in the shipment is more than 5 L. See How to Complete Part A of a Movement Document/Manifest if needed.</p> <p>Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable.</p> <p>Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID.</p> <p>If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site.</p> <p>For waste paint aerosols, use the shipping name, class, and UN number given on the MSDS.</p> <p>If no class or UN number is given, use:</p> <ul style="list-style-type: none"> • Shipping Name: <i>Waste aerosols</i> • Class: <i>2.1</i> • UN Number: <i>UN1950</i> • Packing Group: Leave blank <p>Make sure that emergency contact numbers are filled in.</p>
Carrier Information and Signature	<p>Give all copies of the movement document/manifest to the carrier to complete Part B if the water capacity of the aerosols is more than 5 L. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.</p>
Copies	<p>Do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • If the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the movement document/manifest. • If the waste is being disposed of without being shipped through Salvage Warehouse M, make an additional

	photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.
Inventory Update	Update the waste inventory records to show the waste has been shipped. Include the date the waste was shipped and the serial number from the shipping documentation, if any. Download and use the Hazardous Waste Inventory Form if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .

Shipping: Loading

The shipper is responsible for the following:

Precautions	Make sure the carrier has a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Loading Check	Check that packages or individual aerosols loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that the carrier secures the packages or individual aerosols so that they will not shift or be damaged in transit.

Carrying: Accepting

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Labels	Check that: <ul style="list-style-type: none"> any unpackaged aerosols have "WHMIS labels" packages and any unpackaged aerosols have waste labels packages and any unpackaged aerosols are clearly marked with the words <i>Limited Quantity, Ltd. Qty., or Consumer Commodity</i> the labels are consistent with what is on any shipping documentation
Packaging and Leak	Check that:

Check	<ul style="list-style-type: none"> any packages or individual aerosols are in good condition and not leaking individual cans are less than 1 L (ask the shipper if cans are packaged) any packages are less than 30 kg gross mass
Acceptance	Accept the shipment for transport based on the above checks and have it loaded.
Documentation	<p>If the total water capacity of all the aerosols in the shipment is more than 5 L:</p> <ul style="list-style-type: none"> complete Part B of the movement document/manifest and sign all copies – see How to Complete Part B of a Movement Document/Manifest if needed return copies 1 and 2 to the shipper take copies 3 to 6 with the load and keep in the place specified by the <i>TDG Regulations</i> – see Document Locations if needed
Loading Check	Check that the containers loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Secure any packages or individual aerosols so that they will not shift or be damaged in transit.

Carrying: In Transit

The carrier is responsible for the following:

Spill Response	Follow guidelines on the Spill Response Card in case of a spill.
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Carrying: Delivery

The carrier is responsible for the following:

Receiver Information and Signature	If the total water capacity of all the aerosols in the shipment is more than 5 L, have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.
Copies	<p>If the total water capacity of all the aerosols in the shipment is more than 5 L, do the following with the copies:</p> <ul style="list-style-type: none"> Copy 4 – keep on file for at least two years Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain movement document/manifest copies.</p>

Receiving

The receiver is responsible for the following:

Documentation from Carrier	If the total water capacity of all the aerosols in the shipment is more than 5 L, get the movement document/ manifest from the carrier. Contact Environmental Risk Management so that appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one.
Description and Quantity Check	Contact Environmental Risk Management so that the appropriate authorities can be notified if: <ul style="list-style-type: none"> • the description on the shipping documentation does not match the shipment, or • the quantity shown on the shipping documentation is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Shipment Check	Make sure that: <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the aerosols

Receiving: Completion of Paperwork

The receiver is responsible for the following:

Completion of Movement Document/ Manifest Part C	If the total water capacity of all the aerosols in the shipment is more than 5 L, complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if needed. Enter BCG00122 as the Receiver/Consignee Registration No/Provincial ID.
Copies	If a movement document/manifest was used, do the following with the movement document/manifest copies: <ul style="list-style-type: none"> • Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 • Copy 4 – return to the carrier

	<ul style="list-style-type: none"> • Copy 5 – keep on file for at least two years • Copy 6 – mail to the consignor
Inventory Update	<p>Update waste inventory records to show the amount of waste paint received. Include the date the wastes were received and the serial number from the shipping documentation, if any.</p> <p>Download and use the Hazardous Waste Inventory Form if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example.</p>

Transporting Waste TDG Regulated or Hazardous Paint in Cans

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Transport of waste TDG regulated or hazardous paint in cans is exempt from most requirements of the TDG regulations as long as:

- each can is less than 5 L
- the cans are packaged and secured to prevent leakage or damage in transport
- the gross mass of each package (for example a cardboard box) is less than 30 kg
- packages, or individual cans if they are not packaged, are clearly marked on one side (not the top or bottom) *Limited Quantity, Ltd. Qty., or Consumer Commodity*
- shipment is not by air or by mail

Shipping: Planning

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty containers.

The shipper is responsible for the following:

Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.
Registration of Shipping and Receiving Sites	<p>Find the “Registration Quantity” for the type of waste paint being shipped.</p> <p>If the waste being shipped is less than the Registration Quantity, the shipping and receiving sites do not have to be registered. See the next section on Hazardous Waste Transport Licence.</p> <p>If the waste being shipped is more than the Registration Quantity, the shipping and receiving sites must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary and confirm that:</p> <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • flammable liquids are registered if the paint is flammable (in class 3) or corrosive liquids are registered if the paint is corrosive (in class 8) • the amount registered is more than the amount of waste

	<p>being shipped</p> <p>If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number.</p> <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Hazardous Waste Transport Licence	<p>When arranging road transport, specify that the carrier must have a Hazardous Waste Transport Licence if one is needed. See the Hazardous Waste Transport Licence Requirements.</p>

Shipping: Preparing

The shipper is responsible for the following:

Safety	<p>Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.</p>
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> oil-sorbents on oil-based materials non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP - Rags and Sorbents.</p>
Container Check	<p>Check that:</p> <ul style="list-style-type: none"> cans or packages are in good condition and suitable for transport all cans are properly closed and less than 5 L
Packaging	<p>Preferred packaging for cans is in small closed boxes. Package to:</p> <ul style="list-style-type: none"> keep containers upright prevent leaks or spills during expected conditions of transport keep the gross mass per package less than 30 kg
Labels	<p>Make sure that:</p> <ul style="list-style-type: none"> containers have “WHMIS labels” packages and any unpackaged containers have waste labels packages and any unpackaged containers are clearly marked with the words <i>Limited Quantity</i>, <i>Ltd. Qty.</i>, or <i>Consumer Commodity</i> <p>Remove or erase any labels that do not apply.</p>

Shipping: Loading

The shipper is responsible for the following:

Hazardous Waste Transport Licence Check	Check the carrier's Hazardous Waste Transport Licence unless one is not needed. See the Hazardous Waste Transport Licence Requirements. Make sure that: <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying waste paint • the licence has not expired
Precautions	Make sure the carrier has a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Loading Check	Check that packages or individual cans loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Check that the carrier secures the packages or individual cans so that cans: <ul style="list-style-type: none"> • are upright • will not shift or be damaged in transit

Shipping: Paperwork

The shipper is responsible for the following:

Movement Document/ Manifest	Use a movement document/manifest to transport more than 210 L of waste paint. See "Transporting Using a Movement Document/Manifest."
Inventory Update	Update the waste inventory records to show the waste has been shipped. Include the date the waste was shipped and the serial number from the shipping documentation, if any. Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example  .

Shipping: Transporting using a Movement Document Manifest

Consignor (Shipper) Information	Complete Part A of a movement document/manifest to transport more than 210 L of waste paint. See How to Complete Part A of a Movement Document/Manifest if needed. Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable. Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID. If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or
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	<p>permit number obtained from the operator of the receiving site. For shipping name, TDG class, UN number, and packing group see as applicable:</p> <ul style="list-style-type: none"> • waste solvent-based paint • waste specialty water-based paint <p>Make sure that emergency contact numbers are filled in.</p>
<p>Carrier Information and Signature</p>	<p>Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.</p>
<p>Copies</p>	<p>Do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • If the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the movement document/manifest. • If the waste is being disposed of without being shipped through Salvage Warehouse M, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>

Carrying: Accepting

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty containers.

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.</p> <p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on.</p> <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise-see EBMP - Rags and Sorbents.</p>
Hazardous Waste Transport Licence	Have a valid copy of BC Hydro's Hazardous Waste Transport Licence if one is needed. See Hazardous Waste Transport Licence Requirements to check quantities that need a licence.
Labels	<p>Check:</p> <ul style="list-style-type: none"> • any unpackaged containers have WHMIS labels • packages and any unpackaged containers have waste labels • packages and any unpackaged containers are clearly marked with the words <i>Limited Quantity, Ltd. Qty., or Consumer Commodity</i> • the labels are consistent with what is on any shipping documentation
Packaging and Leak Check	<p>Check that:</p> <ul style="list-style-type: none"> • any packages or individual cans are in good condition and not leaking • individual cans are less than 5 L (ask the shipper if cans are packaged) • any packages are less than 30 kg gross mass
Acceptance	<p>Accept the shipment for transport based on the above checks and have it loaded.</p> <p>Note: The carrier is not allowed to take passengers if the mass of paint per package is more than the quantity limit.</p>

Documentation	If the shipment is more than 210 L of waste paint: <ul style="list-style-type: none"> complete Part B of the movement document/manifest and sign all copies – see How to Complete Part B of a Movement Document/Manifest if needed return copies 1 and 2 to the shipper take copies 3 to 6 with the load and keep in the place specified by the <i>TDG Regulations</i> – see Document Locations if needed.
Loading Check	Check that the cans or packages loaded match the descriptions and quantities given on any shipping documentation.
Load Safe and Secure	Secure the cans or packages so that cans: <ul style="list-style-type: none"> are upright will not shift or be damaged in transit

Carrying: In Transit

The carrier is responsible for the following:

Documentation	Keep copies of the Hazardous Waste Transport Licence, and movement document/manifest in the place specified by the <i>TDG Regulations</i> -see Document Locations if needed.
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.

Carrying: Delivery

The carrier is responsible for the following:

Receiver Information and Signature	If the shipment is more than 210 L of waste paint, have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.
Copies	If the shipment is more than 210 L of waste paint, do the following with the copies: <ul style="list-style-type: none"> Copy 4 – keep on file for at least two years Copies 3, 5, and 6 – give to the receiver Distribution of the Movement Document/Manifest summarizes how to distribute and retain movement document/manifest copies.

Receiving

Note: this section also applies to empty containers

The receiver is responsible for the following:

<p>Documentation from Carrier</p>	<p>Get the shipping documentation from the carrier.</p> <p>Contact your Environmental Risk Management group so that appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one (more than 210 L of waste paint received).</p>
<p>Authorization for Receiving Hazardous Waste</p>	<p>Find the Registration Quantity for the type of waste paint being shipped.</p> <p>If less than the Registration Quantity of waste paint is being received, the receiving site does not have to be registered. In this case, see the next section on Description and Quantity Check.</p> <p>If more than the Registration Quantity of waste paint is being received, the receiving site must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the receiving site is on the list • flammable liquids are registered if the paint is flammable (in class 3) or corrosive liquids are registered if the paint is corrosive (in class 8) • the amount registered is more than the amount of waste being received <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
<p>Description and Quantity Check</p>	<p>Contact Environmental Risk Management so that the appropriate authorities can be notified if:</p> <ul style="list-style-type: none"> • the description on the shipping documentation does not match the shipment, or • the quantity shown on the shipping documentation is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on any shipping documentation • there are no signs of leakage from the cans or packages <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage

Receiving: Completion of Paperwork

The receiver is responsible for the following:

Completion of Movement Document/ Manifest Part C	<p>If more than 210 L of waste paint was received, complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if needed.</p> <p>Enter BCG00122 as the Receiver/Consignee Registration No/Provincial ID.</p>
Copies	<p>If a movement document/manifest was used, do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> • Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 • Copy 4 – return to the carrier • Copy 5 – keep on file for at least two years • Copy 6 – mail to the consignor
Inventory Update	<p>Update waste inventory records to show the amount of waste paint received. Include the date the wastes were received and the serial number from the shipping documentation, if any.</p> <p>Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p>

Transporting Waste TDG Regulated or Hazardous Paint in a Service Vehicle

Transport of waste TDG regulated or hazardous paint in the compartments of a service vehicle is exempt from most requirements of the TDG regulations as long as:

- the cans or pails are packaged and secured to prevent leakage or damage in transport
- the gross mass of dangerous goods in each compartment is less than 30 kg
- the total gross mass of dangerous goods on the vehicle is less than 500 kg
- each compartment used for dangerous goods has the words *Dangerous Goods* on the front cover
- the dangerous goods are transported with a copy of BC Hydro's [Service Vehicle Permit](#) 
- the carrier has up-to-date training in the *TDG Regulations* and a valid *TDG Certificate of Training*

Shipping: Planning

Note: this section also applies to empty containers

The shipper is responsible for the following:

TDG Training	When arranging transport, make sure the carrier has: <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.
Registration of Shipping and Receiving Sites	Find the Registration Quantity for the type of waste paint being shipped. If the waste being shipped is less than the Registration Quantity, the shipping and receiving sites do not have to be registered. See the next section on "Shipping: Preparing." If the waste being shipped is more than the Registration Quantity, the shipping and receiving sites must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that: <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • flammable liquids are registered if the paint is flammable (in class 3) or corrosive liquids are registered if the paint is corrosive (in class 8) • the amount registered is more than the amount of waste being shipped If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number. If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.

Shipping: Preparing

The shippers responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> oil-sorbents on oil-based materials non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p>
Container and Leak Check	<p>Check that:</p> <ul style="list-style-type: none"> containers or packages are in good condition and suitable for transport all containers or packages are properly closed any packages are less than 30 kg gross mass
Labels	<p>Make sure that:</p> <ul style="list-style-type: none"> any unpackaged containers have WHMIS labels packages and any unpackaged containers have waste labels <p>Remove or erase any labels that do not apply.</p>

Shipping: Loading

The shipper is responsible for the following:

TDG Training	Make sure the carrier's <i>TDG Certificate of Training</i> has not expired.
Service Vehicle Permit	Give the carrier a valid copy of BC Hydro's Service Vehicle Permit  if the carrier does not have one.
Hazardous Waste Transport Licence	Make sure the carrier has a valid copy of BC Hydro's Hazardous Waste Transport Licence if one is needed. See Hazardous Waste Transport Licence Requirements to check quantities that need a licence.
Precautions	Make sure the carrier has a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.
Loading Check	<p>Check that:</p> <ul style="list-style-type: none"> the gross mass of dangerous goods in each compartment is not more than 30 kg the total mass of dangerous goods on the service vehicle is not more than 500 kg

	<ul style="list-style-type: none"> packages or individual containers loaded match the descriptions and quantities given on any shipping documentation
Compartment Warning	Make sure that each compartment used for dangerous goods has the words <i>Dangerous Goods</i> on the front cover.
Load Safe and Secure	<p>Check that the carrier secures the packages or individual containers in the service vehicle compartments so that the containers:</p> <ul style="list-style-type: none"> are upright will not shift or be damaged in transit

Shipping: Paperwork

The shipper is responsible for the following:

Movement Document/ Manifest	<p>Use a movement document/manifest to transport more than 210 L of waste paint.</p> <p>See “Transporting Using a Movement Document/Manifest.”</p>
Inventory Update	<p>Update the waste inventory records to show the waste has been shipped. Include the date the waste was shipped and the serial number from the shipping documentation, if any.</p> <p>Download and use the Hazardous Waste Inventory Form if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example.</p>

Shipping: Transporting Using a Movement Document/Manifest

The shipper is responsible for the following:

Consignor (Shipper) Information	<p>Complete Part A of a movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if needed.</p> <p>Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable.</p> <p>Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID.</p> <p>If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site.</p> <p>For shipping name, TDG class, UN number, and packing group see as applicable:</p> <ul style="list-style-type: none"> waste solvent-based paint waste specialty water-based paint <p>Make sure that emergency contact numbers are filled in.</p>
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Carrier Information and Signature	Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.
Copies	Do the following with the movement document/manifest copies: <ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 Note: The Ministry does not accept fax copies. • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • If the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the movement document/manifest. • If the waste is being disposed of without being shipped through Salvage Warehouse M, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.

Carrying: Accepting

Note: this section also applies to empty containers

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit. Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.

TDG Training	Have: <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Service Vehicle Permit	Get a valid copy of BC Hydro's Service Vehicle Permit if you do not have one.
Hazardous Waste Transport Licence	Have a valid copy of BC Hydro's Hazardous Waste Transport Licence if one is needed. See Hazardous Waste Transport Licence Requirements to check quantities that need a licence.
Labels	Check: <ul style="list-style-type: none"> • any unpackaged containers have “WHMIS labels” • packages and any unpackaged containers have waste labels
Packaging and Leak Check	Check that: <ul style="list-style-type: none"> • any packages or individual cans are in good condition and not leaking • all containers or packages are properly closed • any packages are less than 30 kg gross mass
Acceptance	Accept the shipment for transport based on the above checks and have it loaded. Note: The carrier is not allowed to take passengers if the mass of paint per package is more than the quantity limit.
Documentation	If the shipment is more than 210 L of waste paint: <ul style="list-style-type: none"> • complete Part B of the movement document/manifest and sign all copies – see How to Complete Part B of a Movement Document/Manifest if needed • return copies 1 and 2 to the shipper • take copies 3 to 6 with the load
Loading Check	Check that: <ul style="list-style-type: none"> • gross mass of dangerous goods in each compartment is not more than 30 kg • total mass of dangerous goods on the service vehicle is not more than 500 kg • containers or packages loaded match the descriptions and quantities given on any shipping documentation
Compartment Warning	Make sure that each compartment used for dangerous goods has the words <i>Dangerous Goods</i> on the front cover.
Load Safe and Secure	Secure the containers or packages so that containers: <ul style="list-style-type: none"> • are upright • will not shift or be damaged in transit

Carrying: In Transit

The carrier is responsible for the following:

Documentation	Keep copies of the Service Vehicle Permit  . Hazardous Waste Transport Licence, and movement document/manifest in the place specified by the <i>TDG Regulations</i> – see Document Locations if needed.
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.

Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	If the shipment is more than 210 L of waste paint, have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.
Copies	<p>If the shipment is more than 210 L of waste paint, do the following with the copies:</p> <ul style="list-style-type: none"> • Copy 4 – keep on file for at least two years • Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain movement document/manifest copies.</p>

Receiving

The receiver is responsible for the following:

Documentation from Carrier	<p>Get the shipping documentation from the carrier.</p> <p>Contact Environmental Risk Management so that appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one (more than 210 L of waste paint received).</p>
Authorization for Receiving Hazardous Waste	<p>If less than the Registration Quantity of waste paint is being received, the receiving site does not have to be registered. In this case, see Description and Quantity Check below.</p> <p>If more than the Registration Quantity is being received, the receiving site must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm:</p> <ul style="list-style-type: none"> • the receiving site is on the list • flammable liquids are registered if the paint is flammable (in class 3) or corrosive liquids are registered if the paint is corrosive (in class 8) • the amount registered is more than the amount of waste being received <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a</p>

	registration update.
Description and Quantity Check	Contact Environmental Risk Management so that the appropriate authorities can be notified if: <ul style="list-style-type: none"> the description on the shipping documentation does not match the shipment, or the quantity shown on the shipping documentation is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Shipment Check	Make sure that: <ul style="list-style-type: none"> what is received agrees with what is on any shipping documentation there are no signs of leakage from the cans or packages If leaks or bad containers are found: <ul style="list-style-type: none"> transfer the paint to a good container, or use an overpack to contain the bad container see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage

Receiving: Completion of Paperwork

The receiver is responsible for the following:

Completion of Movement Document/ Manifest Part C	If more than 210 L of waste paint was received, complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if needed. Enter BCG00122 as the Receiver/Consignee Registration No/Provincial ID.
Copies	If a movement document/manifest was used, do the following with the movement document/manifest copies: <ul style="list-style-type: none"> Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 Copy 4 – return to the carrier Copy 5 – keep on file for at least two years Copy 6 – mail to the signor
Inventory Update	Update waste inventory records to show the amount of waste

	<p>paint received. Include the date the wastes were received and the serial number from the shipping documentation, if any.</p> <p>Download and use the Hazardous Waste Inventory Form if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example.</p>
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Transporting Waste Non-TDG Regulated Solvent-Based Paint

Transport of paint in class 3 is **not** TDG regulated if **all** of the following apply:

- flash point is above 37.8 °C
- the paint is only in class 3 (no other class is shown in brackets after class 3)
- container size is less than 450 L
- transport is by road, rail or domestic ship

Shipping: Planning

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

<p>Note: This section also applies to empty containers.</p>

The shipper is responsible for the following:

Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.
Registration of Shipping and Receiving Sites	<p>Find the Registration Quantity for the type of waste paint being shipped.</p> <p>If the waste being shipped is less than the Registration Quantity, the shipping and receiving sites do not have to be registered. See the next section on Hazardous Waste Transport Licence.</p> <p>If the waste being shipped is more than the Registration Quantity, the shipping and receiving sites must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary and confirm that:</p> <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • flammable liquids are registered if the paint is flammable (in class 3) or corrosive liquids are registered if the paint is corrosive (in class 8) • the amount registered is more than the amount of waste being shipped <p>If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number.</p> <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Hazardous Waste Transport Licence	When arranging road transport, specify that the carrier must have a Hazardous Waste Transport Licence if one is needed. See the Hazardous Waste Transport Licence Requirements.

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Condition and Leak Check	<p>Check that containers and any packing are in good condition and suitable for transport. This means containers:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are not cracked <p>If possible, ship waste paint in its original containers. If this is not possible, make sure the containers:</p> <ul style="list-style-type: none"> • are known to be compatible with the paint • can be sealed, and • are allowed for this use by the Fire Code if the paint is flammable <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see “Spill Response” for clean-up of any leakage
Closure Check	Make sure that all containers are properly closed.

<p>Packaging</p>	<p>Preferred packaging for:</p> <ul style="list-style-type: none"> • pails is in a poly-lined skid tub with strap-down lid • drums/barrels is strapped onto pallets in good condition  <p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead-do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g. sharp edges)
<p>Labels</p>	<p>Make sure that:</p> <ul style="list-style-type: none"> • containers have WHMIS labels • packages and any unpackaged containers have waste labels <p>Remove or erase any labels that do not apply.</p>

Shipping: Loading

The shipper is responsible for the following:

<p>Hazardous Waste Transport Licence Check</p>	<p>Check the carrier's Hazardous Waste Transport Licence unless one is not needed. See the Hazardous Waste Transport Licence Requirements.</p> <p>Make sure that:</p> <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying the type of waste that will be transported • the licence has not expired
<p>Precautions</p>	<p>Check that the carrier has sorbents and a copy of the Spill Response Card on the truck.</p>
<p>Loading Equipment and Methods</p>	<p>Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks.</p>
<p>Load Position</p>	<p>Balance the load as instructed by the carrier.</p>
<p>Accessibility</p>	<p>Make sure the load will be accessible for safe unloading.</p>
<p>Loading Check</p>	<p>Check that the containers loaded match the descriptions and quantities given on the shipping documentation.</p>

Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Shipping: Paperwork

The shipper is responsible for the following:

Movement Document/Manifest	Use a movement document/manifest to transport more than 210 L of waste paint. See Transporting Using a Movement Document/Manifest.
Inventory Update	Update the waste inventory records to show the waste has been shipped. Include the date the waste was shipped and the serial number from the shipping documentation, if any. Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example  .

Shipping: Transporting Using a Movement Document/Manifest

The shipper is responsible for the following:

Consignor (Shipper) Information	Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if needed. Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable. Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID. If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site. Enter the: <ul style="list-style-type: none"> • Shipping Name as waste paint • UN number as UN1263 • class as 3 • packing group as III Make sure that emergency contact numbers are filled in.
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Carrier Information and Signature	Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.
Copies	Do the following with the manifest copies: <ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 Note: The Ministry does not accept fax copies. • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • If the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the manifest. • If the waste is being disposed of without being shipped through Salvage Warehouse M, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.

Carrying: Accepting

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty containers.

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
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Precautions	<p>Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.</p> <p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on.</p> <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Hazardous Waste Transport Licence	<p>Have a valid Hazardous Waste Transport Licence that allows for carrying the type of waste that will be transported, unless one is not needed. See Hazardous Waste Transport Licence Requirements to check quantities that need a licence.</p>
Labels	<p>Check that:</p> <ul style="list-style-type: none"> • containers have “WHMIS labels” • packages and any unpackaged containers have waste labels • the labels are consistent with what is on the shipping documentation
Packaging and Leak Check	<p>Check that containers and packaging are in good condition and suitable for transport.</p> <p>This means:</p> <ul style="list-style-type: none"> • containers are tightly closed and do not leak or bulge • containers are not cracked or significantly rusted, dented, or damaged • any packaging (e.g. pallets, or strapping) is not damaged <p>Do not accept materials unsuitable for transport unless fully contained in an overpack.</p>
Acceptance	<p>Accept the shipment for transport based on the above checks and have it loaded.</p>
Documentation	<p>If the shipment is more than 210 L of waste paint:</p> <ul style="list-style-type: none"> • complete Part B of the movement document/manifest and sign all copies – see How to Complete Part B of a Movement Document/Manifest if needed • return copies 1 and 2 to the shipper • take copies 3 to 6 with the load
Loading Check	<p>Check that the containers loaded match the descriptions and quantities given on the shipping documentation.</p>
Load Safe and Secure	<p>Check that:</p> <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides

	<ul style="list-style-type: none"> - in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Carrying: In Transit

The carrier is responsible for the following:

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.						
Spill Reporting – Verbal, Internal	<p>Report any spill involving paint in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">Edie Thome</td> <td style="text-align: center;">Tel. 604.528.3419</td> <td style="text-align: center;">Cel. 778.828.6231</td> </tr> <tr> <td style="text-align: left;">Lisa Seppala</td> <td style="text-align: center;">Tel. 604.528.2500</td> <td style="text-align: center;">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
Spill Reporting – Verbal, External	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill 						

	<ul style="list-style-type: none"> • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is more than the 100 L, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the Incident Report should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External-Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact Environmental Risk Management for advice on further notification.</p>
Spill Reporting	The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.

Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	If the shipment is more than 210 L of waste paint, have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.
Copies	If the shipment is more than 210 L of waste paint, do the following with the copies: <ul style="list-style-type: none"> • Copy 4 – keep on file for at least two years • Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain movement document/manifest copies.</p>

Receiving

Note: this section also applies to empty containers

The receiver is responsible for the following:

Documentation from Carrier	Get the shipping documentation from the carrier. Contact Environmental Risk Management so that appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one (more than 210 L of waste paint received).
Authorization for Receiving Hazardous Waste	Find the Registration Quantity for the type of waste paint being shipped. If less than the Registration Quantity of waste paint is being received, the receiving site does not have to be registered. In this case, see the next section on Description and Quantity Check. If more than the Registration Quantity of waste paint is being received, the receiving site must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary and confirm that: <ul style="list-style-type: none"> • the receiving site is on the list • flammable liquids are registered • the amount registered is more than the amount of waste being received If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.
Description and Quantity Check	Contact Environmental Risk Management so that the appropriate authorities can be notified if: <ul style="list-style-type: none"> • the description on the shipping documentation does not match the shipment, or • the quantity shown on the shipping documentation is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use: <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors Note: Handle waste sorbents from clean-up of paint spills as

	<p>hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> what is received agrees with what is on any shipping documentation there are no signs of leakage <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> transfer the paint to a good container, or use an overpack to contain the bad container see Spill Response for clean-up of any leakage <p>Note: Get replacement containers from the MMBU Environmental Technical Specialist if needed.</p>
Unloading Equipment and Methods	<p>Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks.</p>

Receiving: Completion of Paperwork

The receiver is responsible for the following:

Completion of Movement Document/Manifest Part C	<p>If more than 210 L of waste paint was received, complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if needed.</p> <p>Enter BCG00122 as the Receiver/Consignee Registration No/Provincial ID.</p>
Copies	<p>If a movement document/manifest was used, do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 Copy 4 – return to the carrier Copy 5 – keep on file for at least two years Copy 6 – mail to the consignor
Inventory Update	<p>Update waste inventory records to show the amount of waste paint received. Include the date the wastes were received and the serial number from the shipping documentation, if any.</p> <p>Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p>

Transporting Waste TDG Regulated or Hazardous Paint

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty containers.

Shipping: Planning

The shipper is responsible for the following:

TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training <p>When arranging transport, specify that the carrier must have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Shipment Tracking	<p>Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.</p>
Registration of Shipping and Receiving Sites	<p>Find the Registration Quantity for the type of waste paint being shipped.</p> <p>If the waste being shipped is less than the Registration Quantity, the shipping and receiving sites do not have to be registered. See the next section on Hazardous Waste Transport Licence.</p> <p>If the waste being shipped is more than the Registration Quantity, the shipping and receiving sites must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • flammable liquids are registered if the paint is flammable (in class 3) or corrosive liquids are registered if the paint is corrosive (in class 8) • the amount registered is more than the amount of waste being shipped <p>If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number.</p> <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Hazardous Waste Transport Licence	<p>When arranging road transport, specify that the carrier must have a Hazardous Waste Transport Licence if one is needed. See the Hazardous Waste Transport Licence Requirements.</p>

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors • universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Condition and Leak Check	<p>Check that containers and any packing are in good condition and suitable for transport. This means containers:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are marked with a packaging code like that at the right unless an exemption allows otherwise <div data-bbox="1052 974 1370 1083" style="text-align: right;">  </div> <p>If possible, ship waste paint in its original containers. If this is not possible, make sure the containers:</p> <ul style="list-style-type: none"> • are known to be compatible with the paint • can be sealed, and • are allowed for this use by the Fire Code if the paint is flammable <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> • transfer the paint to a good container, or • use an overpack to contain the bad container • see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage
Closure Check	Make sure that all containers are properly closed.

<p>Packaging</p>	<p>Preferred packaging for:</p> <ul style="list-style-type: none"> • pails is in a poly-lined skid tub with strap-down lid • drums/barrels is strapped onto pallets in good condition  <p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead—do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g. sharp edges) <p>Note: To allow proper labeling, do not put TDG regulated materials with different shipping names or hazard classes together in the same package.</p> <p>If the shipment is being made under an exemption, make sure the mass per package and the total amount of the shipment are less than any limits for the exemption to apply.</p>
<p>Labels</p>	<p>Make sure that:</p> <ul style="list-style-type: none"> • containers have “WHMIS labels” • packages and any unpackaged containers have waste labels and TDG markings <p>Remove or erase any labels that do not apply.</p>

Shipping: Loading

The shipper is responsible for the following:

<p>Safety</p>	<p>Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.</p>
<p>Precautions</p>	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors • universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p> <p>Check that the carrier has sorbents and a copy of the Spill Response Card on the truck.</p>
<p>TDG Training</p>	<p>Make sure that the carrier's <i>TDG Certificate of Training</i> has not</p>

	expired.
Hazardous Waste Transport Licence Check	<p>Check the carrier's Hazardous Waste Transport Licence unless one is not needed. See the Hazardous Waste Transport Licence Requirements.</p> <p>Make sure that:</p> <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying the type of waste that will be transported • the licence has not expired
Placards	<p>Make sure that placards are on all four sides of a transport unit before loading if the gross mass of dangerous goods is more than 500 kg in a single unit. This applies to containers like skid tubs or tote boxes as well as transport trucks. See "Placards" to show which placards to use.</p> <p>The shipper must offer to provide the placards if they are needed.</p>
Loading Equipment and Methods	<p>Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks.</p>
Load Position	<p>Balance the load as instructed by the carrier.</p>
Accessibility	<p>Make sure the load will be accessible for safe unloading.</p>
Loading Check	<p>Check that the containers loaded match the descriptions and quantities given on the shipping documentation.</p>
Load Safe and Secure	<p>Check that:</p> <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Shipping: Paperwork

The shipper is responsible for the following:

Movement Document/Manifest	<p>Use a movement document/manifest to transport more than 210 L of waste paint.</p> <p>Otherwise use a shipping document unless an exemption allows something else.</p> <p>See as applicable:</p> <ul style="list-style-type: none"> • See “Transporting Using a Movement Document/Manifest” • See “Transporting Using a Shipping Document “
Inventory Update	<p>Update the waste inventory records to show the waste has been shipped. Include the date the waste was shipped and the serial number from the shipping documentation, if any.</p> <p>Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p>

Shipping: Transporting Using a Movement Document/Manifest

The shipper is responsible for the following:

Consignor (Shipper) Information	<p>Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if needed.</p> <p>Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable.</p> <p>Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID.</p> <p>If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site.</p> <p>For shipping name, TDG class, UN number, and packing group see as applicable:</p> <ul style="list-style-type: none"> • waste solvent-based paint • waste specialty water-based paint <p>Make sure that emergency contact numbers are filled in.</p> <p>Note: The shipping documentation must show the amount of the dangerous goods in kilograms or litres. The amount in used containers does not have to be measured if the container is less than 10 percent full and the documentation shows <i>Residue-last contained</i> followed by the shipping name.</p>
Carrier Information and Signature	<p>Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.</p>

<p>Copies</p>	<p>Do the following with the manifest copies:</p> <ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • If the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the manifest. • If the waste is being disposed of without being shipped through Salvage Warehouse M, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
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Shipping: Transporting Using a Shipping Document

The shipper is responsible for the following:

<p>Shipping Document</p>	<p>Complete a shipping document unless an exemption allows something else. See How to Complete a Shipping Document if needed.</p> <p>For shipping name, class, UN number, and packing group see as applicable:</p> <ul style="list-style-type: none"> • waste solvent-based paint • waste specialty water-based paint <p>Note: The shipping documentation must show the amount of the dangerous goods in kilograms or litres. The amount in used containers does not have to be measured if the container is less than 10 percent full and the documentation shows <i>Residue-last contained</i> followed by the shipping name.</p>
<p>Special Wording for less than 210 L of Waste Paint</p>	<p>When shipping less than 210 L of waste paint, enter the following words in the "Special Instructions" box of the shipping document: "Shipments of recyclable waste paint less than 210 L solely within BC are exempt from waste manifesting requirements under Section 46 of the BC <i>Hazardous Waste Regulation</i>."</p>

Carrier Signature	Have the carrier sign all copies of the shipping document when accepting the shipment.
Copies	<p>Do the following with copies of the shipping document:</p> <ul style="list-style-type: none"> • Consignor (Shipper) copy – retain on file for at least two years • Carrier copy – give to the carrier • If the waste is being disposed without being shipped through Salvage Warehouse M, photocopy the completed shipping document and send the copy to: <p>MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9</p>

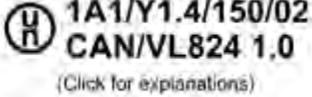
Carrying: Accepting

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This section also applies to empty containers.

The carrier is responsible for the following:

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.</p> <p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p>
TDG Training	<p>Have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Hazardous Waste Transport Licence	Have a valid Hazardous Waste Transport Licence that allows for carrying the type of waste that will be transported, unless one is not needed. See Hazardous Waste Transport Licence Requirements.
Labels	<p>Check that:</p> <ul style="list-style-type: none"> • containers have “WHMIS labels” • packages and any unpackaged containers have waste labels and TDG markings

	<ul style="list-style-type: none"> the labels are consistent with what is on the shipping documentation the containers are marked with a packaging code like that at the right unless an exemption allows otherwise 
<p>Packaging and Leak Check</p>	<p>Check that containers and packaging are in good condition and suitable for transport.</p> <p>This means:</p> <ul style="list-style-type: none"> packaged materials are not leaking outer containers are closed (applies to outermost container where little containers are inside another container) any packaging (e.g. boxes, pallets, shrink-wrap, or strapping) is not damaged <p>Do not accept materials unsuitable for transport unless fully contained in an overpack.</p>
<p>Placards</p>	<p>Make sure that placards are on all four sides of a transport unit before loading if the gross mass of dangerous goods is more than 500 kg in a single unit. This applies to containers like skid tubs or tote boxes as well as transport trucks. See “Placards” to show which placards to use.</p> <p>The shipper must offer to provide the placards if they are needed.</p>
<p>Acceptance</p>	<p>Accept the shipment for transport based on the above checks and have it loaded.</p> <p>Note: The carrier is not allowed to take passengers if the mass of paint per package is more than the quantity limit.</p>
<p>Documentation</p>	<p>If the shipment is more than 210 L of waste paint:</p> <ul style="list-style-type: none"> complete Part B of the movement document/manifest and sign all copies – see How to Complete Part B of a Movement Document/Manifest if needed return copies 1 and 2 to the shipper take copies 3 to 6 with the load <p>If the shipment is less than 210 L of waste paint and is being transported under an exemption:</p> <ul style="list-style-type: none"> check that the terms of the exemption apply and take whatever shipping documentation the exemption says is needed <p>Otherwise:</p> <ul style="list-style-type: none"> sign all copies of the shipping document return the Consignor (Shipper) copy to the shipper take the other copies with the load
<p>Loading Check</p>	<p>Check that the containers loaded match the descriptions and quantities given on the shipping documentation.</p>

Load Safe and Secure	Check that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	Keep a copy of the shipping documentation in the place specified by the <i>TDG Regulations</i> . See Document Locations if needed. If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. See Hazardous Waste Transport Licence Requirements if needed.						
Placards	Replace any lost or damaged placards, if placards are needed. See “Placards” if needed.						
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response Card in case of a spill.						
Spill Reporting – Verbal, Internal	Report any spill involving paint in transit. BC Hydro Employees Report to: <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle Contractors Report to: <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern. <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="text-align: center;">Edie Thome</td> <td style="text-align: center;">Tel. 604.528.3419</td> <td style="text-align: center;">Cel. 778.828.6231</td> </tr> <tr> <td style="text-align: center;">Lisa Seppala</td> <td style="text-align: center;">Tel. 604.528.2500</td> <td style="text-align: center;">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L for Paint in Class 3 or more than 5 L for Paint in Class 8): (Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is more than 100 L for paint in Class 3 or more than 5 L for paint in Class 8, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the Incident Report should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External-Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L for Paint in Class 3 or Less than 5 L for Paint in Class 8:</p> <p>For spills to land less than 100 L for solvent in Class 3 or less than 5 L for solvent in Class 6.1 where there is potential for the spill to reach water, contact Environmental Risk Management for advice on further notification.</p>
<p>Spill Reporting</p>	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	If a movement document/manifest was used, have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.
Copies	<p>If a movement document/manifest was used, do the following with the copies:</p> <ul style="list-style-type: none"> • Copy 4 – keep on file for at least two years • Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain movement document/manifest copies.</p> <p>If a shipping document was used, keep the Carrier copy on file for at least two years.</p>
Removal of Placards	<p>Remove or cover the placards after unloading, unless cleaning is needed to remove leaked or spilt dangerous goods.</p> <p>If cleaning is needed, remove the placards after cleaning.</p>

Receiving

Note: this section also applies to empty containers

The receiver is responsible for the following:

Documentation from Carrier	<p>Get the shipping documentation from the carrier.</p> <p>Contact Environmental Risk Management so that appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one (more than 210 L of waste paint received).</p>
TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Authorization for Receiving Hazardous Waste	<p>Find the Registration Quantity for the type of waste paint being shipped.</p> <p>If less than the Registration Quantity of waste paint is being received, the receiving site does not have to be registered. In this case, see the next section on Description and Quantity Check.</p> <p>If more than the Registration Quantity of waste paint is being received, the receiving site must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the receiving site is on the list • flammable liquids are registered if the paint is flammable (in class 3) or corrosive liquids are registered if the paint is corrosive (in class 8)

	<ul style="list-style-type: none"> the amount registered is more than the amount of waste being received <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Description and Quantity Check	<p>Contact Environmental Risk Management so that the appropriate authorities can be notified if:</p> <ul style="list-style-type: none"> the description on the shipping documentation does not match the shipment, or the quantity shown on the shipping documentation is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

Safety	<p>Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.</p>
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> oil-sorbents on oil-based materials non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Shipment Check	<p>Make sure there are no signs of leakage.</p> <p>If leaks or bad containers are found:</p> <ul style="list-style-type: none"> transfer the paint to a good container, or use an overpack to contain the bad container see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage <p>Note: Get replacement containers from the MMBU Environmental Technical Specialist if needed.</p>
Unloading Equipment and Methods	<p>Use equipment and methods designed to handle the load safely – see Loading and Unloading of Trucks.</p>

Receiving: Completion of Paperwork

The receiver is responsible for the following:

Completion of Movement Document/Manifest Part C	If more than 210 L of waste paint was received, complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if needed. Enter BCG00122 as the Receiver/Consignee Registration No/Provincial ID.
Copies	If a movement document/manifest was used, do the following with the movement document/manifest copies: <ul style="list-style-type: none"> • Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 • Copy 4 – return to the carrier • Copy 5 – keep on file for at least two years • Copy 6 – mail to the consignor
Inventory Update	Update waste inventory records to show the amount of waste paint received. Include the date the wastes were received and the serial number from the shipping documentation, if any. Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example  .

Transporting Empty Paint Containers

Transport empty containers using the same precautions as full ones unless the containers have been proven to be truly empty. This is because containers typically contain residual paint when emptied. If these containers are not properly closed, or become damaged, there is a significant risk of leakage or spillage during transport.

See as applicable:

- See “Transporting New Paint”
- See “Transporting Waste Paint”

Storage

Storage of New Paint

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	<p>Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use:</p> <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors • universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).</p>
Inventory	Minimize the storage of paint by buying the smallest amount needed for use and inventory.
Containers	<p>Make sure that containers for paint are:</p> <ul style="list-style-type: none"> • in good condition • closed during storage • handled, stored, or transported so as not to cause leaks or ruptures • compatible with the paint, if they are not the original containers (contact the supplier if unsure about compatible materials)
Containment	<p>For solvent-based or specialty water-based paint, provide containment which is the larger of:</p> <ul style="list-style-type: none"> • 110 percent of the volume of the largest single container of paint being stored • 25 percent of all the paint being stored in the containment <p>[Reference: Clause 4.1.6.1(1)(a) of the 1998 BC Fire Code which specifies containment for spill control of flammable or combustible liquids, without specifying the exact capacity required.]</p> <p>For general-purpose water-based paint, provide containment as above where possible.</p>
Storage Location	<p>Note: There are many Fire Code requirements for storing flammable or combustible liquids such as solvent-based paint. Detailed Fire Code requirements are beyond the scope of this document. Make sure that any storage area for solvent-based paint is approved by the Safety Regulations and Compliance Specialist.</p> <p>Store paint in a location that:</p> <ul style="list-style-type: none"> • is contained as specified in the Containment section

	<ul style="list-style-type: none"> • provides protection from the weather, including freeze-protection for water-based paint • is cool and well-ventilated • is away from traffic • is secure <p>In addition for solvent-based paint, make sure the location is:</p> <ul style="list-style-type: none"> • designed for flammable or combustible liquids • marked to show the amounts of flammable or combustible liquids that are allowed <p>Do not store paint near drains or watercourses. If this cannot be avoided, block or seal drains until the paint can be moved.</p> <p>Clean up spills or leaks promptly to minimize the spread of paint.</p>
Storage Requirements	<p>Store paint:</p> <ul style="list-style-type: none"> • with labels outward • with containers upright • to allow for easy leak inspection (for example, off the floor on pallets with aisle space between the pallets) • not more than two high for palletized drums or barrels • if using any racking, shelving, or pallets, with these: <ul style="list-style-type: none"> – in good condition – large enough so that containers do not hang over edges – adequate for the weight of the stored materials <p>In addition for solvent-based paint, make sure:</p> <ul style="list-style-type: none"> • the amount stored is not more than the amount allowed for the area • the paint is separated from incompatible materials as per the Fire Code Separation Chart
Labels	<p>Make sure that containers have labels including “WHMIS labels” if required (check the MSDS).</p> <p>Remove or erase any labels that do not apply.</p>
Restricted Access	<p>Restrict site access during non-working hours.</p>
Inspections	<p>Inspect the storage facility monthly or as per the site or station maintenance plan.</p> <p>When inspecting:</p> <ul style="list-style-type: none"> • check shelving or pallets for damage • check containers for leaks or damage-if problems are found: <ul style="list-style-type: none"> – transfer the paint to a suitable container, or – use an overpack drum to contain the leaking container – see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage • remove any incompatible materials in the storage area <p>Keep a record of the inspection and report any findings.</p>

Storage of Waste Paint

Physical Requirements

Safety	Handle paint as per the occupational health and safety standards, policies and procedures for your Line of Business/Business Unit. For assistance contact your OSH Specialist.
Precautions	Have sorbents available for leak/spill response. Select sorbents according to the materials they will be used on. Use: <ul style="list-style-type: none"> • oil-sorbents on oil-based materials • non-combustible sorbents on materials having a flash point less than 93°C [200°F], if these sorbents are used indoors • universal sorbents on water-based materials <p>Note: Handle waste sorbents from clean-up of paint spills as hazardous waste unless known otherwise – see EBMP – Rags and Sorbents.</p> Make sure that drains or watercourses to which spilled materials might leak are protected (e.g. use a drain cover).
Avoidance of Mixing	Do not mix different types of wastes (for example solvent and water-based wastes).
Containers	Make sure that containers for waste paint are: <ul style="list-style-type: none"> • in good condition • closed during storage • handled, stored, or transported so as not to cause leaks or ruptures • compatible with the wastes, if they are not the original containers (contact Environmental Risk Management if unsure about compatible materials) <p>Note: If wastes have to be transferred, to avoid further repackaging make sure the new containers are also suitable for transport.</p> Contact the MMBU Environmental Technical Specialist to get certified containers for transport.
Containment	For waste paint that is hazardous waste, provide containment which is the larger of: <ul style="list-style-type: none"> • 110 percent of the volume of the largest single volume of wastes being stored • 25 percent of all the wastes being stored in the containment For waste paint that is not hazardous waste, provide containment as above where possible. <p>Note: Liquid-tight skid tubs can be used as containment for smaller containers. If skid tubs are used, where possible use separate tubs for solvent-based and water-based paint (for transport and record-keeping reasons).</p>

<p>Storage Location</p>	<p>Note: There are many Fire Code requirements for storing flammable or combustible liquids such as solvent-based waste paint. Detailed Fire Code requirements are beyond the scope of this document. Make sure that any storage area for solvent-based waste paint is approved by the Safety Regulations and Compliance Specialist.</p> <p>Store waste paint in a location that:</p> <ul style="list-style-type: none"> • is contained as specified in the Containment section • provides protection from the weather, including freeze-protection for water-based waste paint • is cool and well-ventilated • is away from traffic • is secure <p>In addition for solvent-based waste paint, make sure the location is:</p> <ul style="list-style-type: none"> • designed for flammable or combustible liquids • marked to show the amounts of flammable or combustible wastes that are allowed <p>Do not store waste paint near drains or watercourses. If this cannot be avoided, block or seal drains until the wastes can be moved.</p> <p>Clean up spills or leaks promptly to minimize the spread of wastes.</p>
<p>Storage Requirements</p>	<p>Store waste paint:</p> <ul style="list-style-type: none"> • with labels outward • with containers upright • to allow for easy leak inspection (for example, off the floor on pallets with aisle space between the pallets) • not more than two high for palletized drums or barrels • if using any racking, shelving, or pallets, with these: <ul style="list-style-type: none"> – in good condition – large enough so that containers do not hang over edges – adequate for the weight of the stored materials <p>In addition for solvent-based waste paint, make sure:</p> <ul style="list-style-type: none"> • the amount stored is not more than the amount allowed for the area • the wastes are separated from incompatible materials as per the Fire Code Separation Chart
<p>Labels</p>	<p>Make sure that:</p> <ul style="list-style-type: none"> • containers have “WHMIS labels” if required (check the MSDS) • waste labels <p>Remove or erase any labels that do not apply.</p>
<p>Restricted Access</p>	<p>Restrict site access during non-working hours.</p>

Administrative Requirements

Minimize Storage Quantities	<p>Dispose of or recycle waste paint regularly. Keep the amount of any hazardous waste stored less than the Registration Quantity.</p> <p>Note : All requirements of the <i>Hazardous Waste Regulation</i> apply to amounts of hazardous waste paint more than the Registration Quantity that are stored for more than 4 days. Contact the MMBU Environmental Technical Specialist for assistance.</p>
Storage Record	<p>Keep a record of stored waste paint on site at all times.</p> <p>Record as applicable:</p> <ul style="list-style-type: none"> • the identification number of each container (the outer container, if little containers such as cans are packed in a bigger container such as a skid tub) • when the container is received or stored • what is in the container (the shipping name and UN number for TDG regulated waste paint) • how much is in the container, in kilograms or litres (update if waste is added to a partly filled container) • when the container is removed from storage or shipped from site • where the container is on site • the movement document/manifest number for wastes received or shipped • the number of the certificate of processing or destruction for wastes treated or destroyed <p>Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example. </p> <p>Keep the storage records on site for at least two years after the waste is removed from the site.</p>
Inspections	<p>Inspect the storage facility weekly or as per the site or station maintenance plan.</p> <p>When inspecting, check that:</p> <ul style="list-style-type: none"> • pallets are not damaged • containers are not leaking or damaged—if problems are found: <ul style="list-style-type: none"> – use an overpack to contain the leaking container, or – transfer waste solvent-based paint to a sound container – see Spill Response for Oil-Based Materials or Water-Based Materials for clean-up of any leakage • adjacent drains, if any, are blocked or sealed • there are no incompatible materials in the storage area (for example, fuels, oxidizers, etc.) <p>Keep a record of the inspection and report any findings.</p>

Recycling/Disposal of Waste Paint

Recycling/Disposal	<p>Recycle waste aerosols and consumer-type paints – see the Product Care Association for a list of accepted materials and depot locations.</p> <p>For waste industrial or multi-part paint, get written disposal instructions from the paint supplier.</p> <p>For example, with multi-part paints it may be possible to mix surplus quantities of the component parts to produce a converted (reacted) material. If so, the supplier should specify in writing the range of mixing ratios that produce converted material suitable for landfill.</p> <p>If neither of these options is possible, contact the MMBU Environmental Technical Specialist prior to shipping waste paint to MMBU.</p>
Storage Before Recycling or Disposal	See “Storing Waste Paint.”
Shipping for Recycling or Disposal	See “Transporting Waste Paint.”

Spill Response

Spill Response for Oil-Based Materials

The following steps are presented as general guidelines for responding to spills of oil-based materials such as insulating oil, lube oil, or Varsol. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact Environmental Risk Management

Ensure Safety	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response – see OSH Standards 301: WHMIS and Hazardous Materials and 302: Safety During Spill Response.</p> <p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE). Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> • go to the Material Safety Data Sheet database, or • for dangerous goods in transport, contact ICC The Compliance Center at 604-986-4617 (24 hours)
Stop the Flow	Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.
Secure the Area	Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources. Determine the PCB concentration if applicable – see EBMP –

	<p>Insulating Oil – Testing for PCBs.</p> <p>Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>						
<p>Contain the Spill</p>	<p>Protect drains, sewers, culverts, waterways, and ditches, as appropriate.</p> <p>Contain the spilled product with sorbents, pads, or socks such as those contained in an oil spill kit. If an oil spill kit is not available or greater containment is required, use earth and/or sod.</p> <p>Identify all potential sources and the extent of the spilled material. Monitor containment measures.</p>						
<p>Notify/ Report</p>	<p>Internal: For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="646 856 1377 961"> <tr> <td data-bbox="646 856 831 907">Edie Thome</td> <td data-bbox="837 856 1091 907">Tel. 604.528.3419</td> <td data-bbox="1097 856 1377 907">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="646 915 831 961">Lisa Seppala</td> <td data-bbox="837 915 1091 961">Tel. 604.528.2500</td> <td data-bbox="1097 915 1377 961">Cel. 778.866.3251</td> </tr> </table> <p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than Reportable Quantity):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the Fisheries Act), and • local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill 	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
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	<ul style="list-style-type: none"> • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the Reportable Quantity also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the Incident Report should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact Environmental Risk Management for advice on further notification.</p>
<p>Clean Up</p>	<p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, oil, water, and sorbent mixture from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act and Regulations</i> if

	the wastes are dangerous goods <ul style="list-style-type: none"> • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste
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Spill Response for Water-Based Materials

The following steps are presented as general guidelines for responding to spills of non-aggressive water-based materials such as coolant. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your Regional Environmental Coordinator/Environmental and Social Issues Manager or your environmental services group.

1. Ensure Safety	Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response – see OSH Standard 301: WHMIS and Hazardous Materials and OSH Standard 302: Safety During Spill Response. Prioritize critical issues. Use appropriate personal protective equipment (PPE). Follow applicable safety standards and safe work procedures. For product information: <ul style="list-style-type: none"> • go to the Material Safety Data Sheet database, or • for dangerous goods in transport, contact ICC The Compliance Center at 604-986-4617 (24 hours)
2. Stop the Flow	Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.
3. Secure the Area	Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources. Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.
4. Contain the Spill	Protect drains, sewers, culverts, waterways, and ditches, as appropriate. Contain the spilled product with sorbents, pads, or socks. Do not use "oil-only" sorbents as they do not absorb water-based materials. If a spill kit is not available or greater containment is required, use earth and/or sod. Identify all potential sources and the extent of the spilled material. Monitor containment measures.
5. Notify/Report	<p>Internal: For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p>

Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than Reportable Quantity):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain.)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the reportable quantity, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <p>For spills less than reportable quantity to land where there is</p>		

	<p>potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
<p>6. Clean Up</p>	<p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get labels and UN certified containers, if required, from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, soil and coolant mixture from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act and Regulations</i> if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste

References

Hazardous Waste Transport Licence Requirements for Waste Paint

Transport on a public road of more than the transport licence quantity of a hazardous waste requires a Hazardous Waste Transport Licence.

Unless known otherwise, assume that waste aerosols are class 2.1.

- For solvent-based waste paint, see the MSDS to get the TDG class. If no class is given, assume the waste is class 3.
- Unless known otherwise, assume that waste general-purpose water-based paint is not in any class and is not leachable toxic waste.

Type of Waste Paint	TDG Class	Examples	Transport Licence Quantity†	
			Transport by Contractor	Transport by BC Hydro Employee
Aerosols	Class 2.1	Aerosols	5 L ‡	500 L ‡
Flammable liquid	Class 3 only	Solvent-based paints	210 L	500 kg or L
Corrosive, or corrosive and flammable	Class 8, or Class 8 (3) or Class 3 (8)	'Part B' or 'converter' for some multi-part paints	210 L	210 L
Not in class 3 or 8 but leachable toxic waste	-	Some specialty water-based paints	210 L	500 L
Not in class 3 or 8 and not leachable toxic waste	-	Most general-purpose water-based paints	Not applicable	

† The lower quantity applies: for paint more dense than water (most paint), this is the quantity in kilograms; for paint less dense than water, this is the quantity in litres.

‡ Water capacity in litres of aerosols.

Hazardous Waste Generator Registration Quantities for Waste Paint

- Unless known otherwise, assume that waste aerosols are class 2.1.
- For solvent-based waste paint, see the MSDS to get the TDG class. If no class is given, assume the waste is class 3.
- Unless known otherwise, assume that waste general-purpose water-based paint is not in any class and is not leachable toxic waste.

Type of Waste Paint	TDG Class	Examples	Registration Quantity†
Aerosol	Class 2.1	Aerosols	500 L‡
Flammable liquid	Class 3 only	Solvent-based paints	500 kg or L
Corrosive, or corrosive and flammable	Class 8, or Class 8 (3), or Class 3 (8)	'Part B' or 'converter' for some two-part epoxy paints	100 kg or L
Not in class 3 or 8 but leachable toxic waste	-	Some specialty water-based paints	500 kg or L
Not in class 3 or 8 and not leachable toxic waste	-	Most general-purpose water-based paints	Not applicable

† The lower quantity applies: for wastes more dense than water (most paints), this is the quantity in kilograms; for wastes less dense than water, this is the quantity in litres.

‡ Water capacity in litres of aerosols.

Transport Labels and Marks for New TDG Regulated Paint

Unless an exemption allows otherwise, containers less than 450 L must have:

- TDG labels and marks
- UN packaging codes

These marking requirements also apply to drained containers that have not been cleaned.

See “Placards” for containers more than 450 L.

Note: Exemptions often apply to paint. For example see [Dangerous Goods in Little Containers](#).

The TDG labels and marks are:

- shipping name
- UN number
- diamond-shaped hazard/class label(s) on the side (not the bottom or the top)
- for marine transport, the flash point or flash point range if the paint is class 3

Get the shipping name, UN number, class, and flash point from the MSDS.

Note, applicable to marine transport only: In very rare cases, a marine pollutant mark may be required if the paint is known or suspected to contain a marine pollutant.



Where the containers are inside another container less than 450 L, for example paint cans in a cardboard box, the TDG labels and marks must be on the outer container.

The UN number must be shown with the hazard/class label(s) in one of the ways below:

Paint Type	UN Number in a White Box on the (Primary) Label If applicable, replace XXXX with the UN number (no UN before the number)	UN Number Next to the Label(s) If applicable, replace XXXX with the UN number (UN before the number)
Aerosol	In most cases aerosols or packages of aerosols will qualify for exemptions as <i>Limited Quantities</i> or <i>Consumer Quantities</i> —see Dangerous Goods in Little Containers . See the MSDS if the exemptions do not apply.	
Flammable Class 3 only		
Corrosive Class 8 (For example, 'Part B' or 'converter' for some two-part epoxy paints)		
Corrosive and flammable Class 8 (3) (For example, 'Part B' or 'converter' for some two-part epoxy paints)		
Flammable and corrosive Class 3 (8) (For example, 'Part B' or 'converter' for some two-part epoxy paints)		

The shipper must make sure that the labels and marks are on the containers before loading begins.

The carrier must maintain the labels and marks during transport.

UN Packaging Codes (if an exemption does not apply)

Containers must have a packaging code like that on the right, unless an exemption allows otherwise.



If there are multiple levels of containment, it is the container that is being relied upon to prevent release or leakage of the wastes that must have a packaging code. For example for pails inside a skid tub, it is the pails that must have a packaging code.

Transport Labels and Marks for TDG Regulated Waste Paint

Unless an exemption allows otherwise, containers less than 450 L must have:

- TDG labels and marks
- UN packaging codes

These marking requirements also apply to drained containers that have not been cleaned.

See “Placards” for containers more than 450 L.

Note: Exemptions often apply to paint. For example see [Dangerous Goods in Little Containers](#).

TDG Labels and Marks

The TDG labels and marks are:

- shipping name (can be written on the BC Hydro waste label)
- UN number (can be written on the BC Hydro waste label if this is next to the hazard/class label)
- diamond-shaped hazard/class label(s) on the side (not the bottom or the top)
- for marine transport, the flash point or flash point range if the paint is class 3

Note, applicable to marine transport only: In very rare cases, a marine pollutant mark may be required if the paint is known or suspected to contain a marine pollutant.



Where the containers are inside another container less than 450 L, for example paint cans in a cardboard box, the TDG labels and marks must be on the outer container.

For shipping name, class, UN number, and packing group see as applicable:

- waste paint aerosols
- waste solvent-based paint
- waste general-purpose water-based paint
- waste specialty water-based paint

The UN number must be shown with the hazard/class label(s) in one of the ways below:

Type of Waste Paint	UN Number in a White Box on the (Primary) Label If applicable, replace XXXX with the UN number (no UN before the number)	UN Number Next to the Label(s) If applicable, replace XXXX with the UN number (UN before the number)
Aerosol	In most cases aerosols or packages of aerosols will qualify for exemptions as <i>Limited Quantities</i> or <i>Consumer Quantities</i> —see Dangerous Goods in Little Containers . See the MSDS if the exemptions do not apply.	
Flammable liquid Class 3 only		
Corrosive Class 8 (For example, 'Part B' or 'converter' for some two-part epoxy paints)		
Corrosive and flammable Class 8 (3) (For example, 'Part B' or 'converter' for some two-part epoxy paints)		
Flammable and corrosive Class 3 (8) (For example, 'Part B' or 'converter' for some two-part epoxy paints)		

The shipper must make sure that the labels and marks are on the containers before loading begins.

The carrier must maintain the labels and marks during transport.

UN Packaging Codes (if an exemption does not apply)

Containers must have a packaging code like that on the right, unless an exemption allows otherwise.



If there are multiple levels of containment, it is the container that is being relied upon to prevent release or leakage of the wastes that must have a packaging code. For example for pails inside a skid tub, it is the pails that must have a packaging code.

Waste Labels for Waste Paint

All containers used for waste paint, including empty containers that have not been cleaned, must have waste labels.

Get waste labels from the MMBU Environmental Technical Specialist and fill in:

Container ID	A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label
Contents	A general description of what is in the container—for example waste solvent-based paint.
Shipping Name and UN Number	See as applicable: <ul style="list-style-type: none"> • waste paint aerosols • waste solvent-based paint • waste general-purpose water-based paint • waste specialty water-based paint
Origin	Where the waste was generated – for example Ingledow Substation
Date	When the waste was generated – use the start date if the container is filled over time

Note: See also “Labels and Marks for TDG Regulated Paint Wastes” if the wastes are TDG regulated.

WHMIS Labels

New Paint

If needed, get WHMIS workplace labels from the [Material Safety Data Sheet](#) database.

Remove or erase any labels that do not apply.

Waste Paint

For wastes that are similar to the materials before they were waste:

- get WHMIS workplace labels from the [Material Safety Data Sheet](#) database
- write "Waste" before the material name on the label

For wastes that are not similar to the materials before they were waste, label the container with the best available hazard information. If hazards are unknown, label as "Unknown hazards".

Remove or erase any labels that do not apply.

Placards for TDG Regulated Paint

Unless an exemption allows something else, shipments of TDG regulated dangerous goods must have placards if:

- the gross mass of all dangerous goods is more than 500 kg, or
- any amount of liquid dangerous goods is transported in bulk in a container more than 450 L

If placards are needed:

- the shipper must offer to provide the placards, and
- the placards must be on all four sides of a transport unit before loading

Note: When transport is by truck, the front placard can be put on the front of the truck. If the transport unit has a permanent frame, the placards can be attached to the frame.

The carrier must maintain the placards until after the goods have been unloaded, unless cleaning is needed to remove spilt or leaked dangerous goods. If cleaning is needed, remove the placards after cleaning.

Types of Dangerous Goods	Placard	UN Number
Flammable Class 3 and/or Class 3 (8) And No other TDG regulated dangerous goods, or other Class 3 dangerous goods (For example, flammable paint and flammable solvent)		Show the UN number if the paint is in direct contact with a container more than 450 L
Corrosive Class 8 and/or Class 8 (3) And No other TDG Regulated dangerous goods, or other class 8 dangerous goods (For example, a corrosive paint and batteries)		
Different types of paint in different TDG classes or TDG regulated paint with other dangerous goods (For example, two part epoxy paint where one part is flammable and one part is corrosive, or corrosive paint and solvent)	 <p>See Glossary - Exceptions when Danger placards cannot be used</p>	No UN number

Definitions

Class 2.1: A flammable gas as defined by the *Transport of Dangerous Goods Regulations*.

Placard and label for Class 2.1:



Class 3: A flammable liquid as defined by the *Transport of Dangerous Goods Regulations*.

Placard and label for Class 3:



Class 3 (8): A flammable, corrosive liquid as defined by the *Transport of Dangerous Goods Regulations*.

The primary classification is Class 3, meaning that the most serious hazard is flammability.

The subsidiary classification is Class 8, meaning that the liquid is also corrosive.

Placard for class 3 (8):



Labels for class 3 (8):



Two labels and the UN number must be used for class 3 (8). The UN number can be shown either:

- in a white rectangle on the class 3 label as above, (replace XXXX with the UN number, no UN before the number), or
- next to the class 3 label with UN before the number

Class 8: A corrosive substance as defined by the *Transport of Dangerous Goods Regulations*.

Placard and label for Class 8:



Class 8 (3): A corrosive, flammable liquid as defined by the *Transport of Dangerous Goods Regulations*.

The primary classification is Class 8, meaning that the most serious hazard is corrosiveness.

The subsidiary classification is Class 3, meaning that the liquid is also flammable.

Placard for Class 8 (3):



Labels for Class 8 (3):



Classification Information for Waste Solvent-Based Paint:

For waste solvent-based paint, use the shipping name, class, UN number and flash point given on the MSDS, if any.

If no class or UN number is given, use:

- Shipping Name: *Waste paint*
- Class: 3
- UN Number: *UN1263*
- Packing Group: *III*

Classification Information for Waste Specialty Water-Based Paint:

For waste specialty water-based paint, use the shipping name, class and UN number given on the MSDS, if any.

If no class or UN number is given, check product data sheets, check with the supplier or test a sample to find out if the paint is or could be leachable toxic waste.

If the waste paint is leachable toxic waste, use:

- Shipping Name: *Leachable toxic waste (XXXX)* where XXXX is replaced with the name of the substance that causes the waste paint to be leachable – Class: N/A or Not Applicable
- UN Number: N/A or Not Applicable
- Packing Group: *N/A or Not Applicable*

If the waste paint is not leachable toxic waste, use:

- Shipping Name: *Waste paint*
- Class: N/A or Not Applicable
- UN Number: N/A or Not Applicable
- Packing Group: N/A or Not Applicable

Combustible Liquid: Under the Fire Code a combustible liquid means a liquid having a flash point less than 93.3 °C (200 °F) but more than 37.8 °C (100 °F).

Exceptions When Danger Placards Cannot Be Used: Danger placards cannot be used for any dangerous goods that:

- need an Emergency Response Assistance Plan (ERAP)
- are in a container larger than 450 L
- are explosives
- are more than 4,000 kg of the same UN number from one shipper

Note: For dangerous goods transported by BC Hydro, it will be very rare that Danger placards cannot be used for mixed loads when placards are needed.

The ERAP Checker can be used to see if an ERAP is needed.

Note: The ERAP Checker uses a macro. Click "Yes" or "Enable Macros" if a warning message appears. If Danger placards cannot be used, contact the MMBU Environmental Technical Specialist with details to find out what is needed.

Fish habitat: means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes (*Fisheries Act* section 34).

Fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.

As a guideline, fish habitat includes the area extending 15 metres inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

Flammable Liquid: Under the Fire Code a flammable liquid means a liquid having a flash point less than 37.8 °C (100 °F).

Under the *TDG Regulations* a flammable liquid means:

- a liquid having a flash point less than 60 °C (140 °F) or
- a liquid that may be at or above its flash point at any time during transport

Gross Mass: As applied to dangerous goods, means the total mass of dangerous goods including containers.

Hazardous: As applied to waste paint or coating materials means waste paint or coating materials that meet the definition of hazardous waste under the *BC Hazardous Waste Regulation*.

Waste paint is hazardous under the *BC Hazardous Waste Regulation* if it is:

- TDG regulated or
- leachable toxic waste

In this EBMP it is assumed that:

- all waste solvent-based paint or coating materials are hazardous waste
- general purpose water-based paint or coating materials are not hazardous waste

In Bulk: As it relates to transport of dangerous goods or hazardous waste, means transport where:

- the container is more than 450 L, and
- liquids or gases are in direct contact with the container

For example, transport of flammable paint in a 1.2 m³ [317 US gal] tote container is in bulk.

Transport of flammable paint in 20 L [5 US gal] pails in a 1.2 m³ skid tub is not in bulk.

Land Where There is Potential for the Spill to Reach Water: Land from which a spill could enter water or fish habitat, where:

- water means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada, and
- fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34]

Leachable Toxic Waste: Leachable toxic waste means a waste which when tested according to EPA Method 1311 (TCLP) produces a leachate containing a substance above the level given in Schedule 4 of the *BC Hazardous Waste Regulation*. For liquid wastes that contain less than 0.5% by mass of solids, the leachate concentration is the concentration of the listed substance in the waste. The most common substances that cause waste paint to be leachable toxic waste are listed below.

Limits for Leachable Substances

Substance	Leachate Concentration (mg/L)	Most Likely Occurrence
Benzene	0.5	Solvent-based paint
Benzo(a)pyrene	0.001	Creosote or tar coatings
Cadmium	0.5	Pigmented paints
Chromium	5.0	Pigmented paints
Copper	100	Preservative coatings
Ethyl benzene	0.24	Solvent-based paint
Lead	5.0	Old solvent-based paint
Mercury	0.1	As an in-container preservative
Toluene	2.4	Solvent-based paint
Xylenes	30	Solvent-based paint
Zinc	500	Zinc primers

Marine Transport: Transport where a portion of the trip is by ferry or ship.

New: As applied to paint or coating materials means paint or coating materials that are suitable for use, and includes recycled paints or coatings.

Paint:

- paint (either solvent or water-based)
- stain
- varnish
- materials applied as a liquid which dry, harden, react or cure to a coating, or
- any part of multi-part paints or coatings

Passenger: A person carried on a road or rail vehicle, *other than*:

- a crew member
- a person who is accompanying dangerous goods or other cargo
- an operator, owner or charterer of the vehicle
- an employee of the operator, owner, or charterer of the vehicle, who is acting in the course of employment
- a person carrying out inspection or investigation duties under an Act of Parliament or of a provincial legislature

Quantity Limit for Passenger Vehicles: Look on the MSDS to see what TDG class and packing group the paint or coating material is in.

If the paint or coating material is Class 3 (flammable) and is in:

- Packing Group I, the maximum quantity per package is 1 L
- Packing Group II, the maximum quantity per package is 5 L
- Packing Group III, the maximum quantity per package is 60 L
- If the paint or coating material is Class 8 (corrosive) and is in:
- Packing Group II, the maximum quantity per package is 1 L

- Packing Group III, the maximum quantity per package is 5 L

There is no quantity limit for waste paint that is only class 9 (environmentally hazardous).

Shipping Documentation: whatever documents must go with a shipment.

Depending what and how much is being shipped, these documents could be one or more of the following:

- a bill of lading
- a full dangerous goods shipping document
- a document with information required by an exemption from TDG requirements
- a movement document/manifest
- a Permit for Equivalent Level of Safety

Shipping Documentation: Whatever documents must go with a shipment.

Depending what and how much is being shipped; these documents could be one or more of the following:

- a bill of lading
- a full dangerous goods shipping document
- a document with information required by an exemption from TDG requirements
- a movement document/manifest
- a Permit for Equivalent Level of Safety

Skid Tub: A plastic bulk container with a built-in skid. Skid tubs usually have a volume of about 1,200 L.



Solvent: any non-water based liquid that is used for dissolving other substances.

Many chemicals are used as solvents. Solvents are commonly used for cleaning, degreasing, and thinning.

Products such as Mr. Clean or Fantastik are water-based cleaners, and are not covered in this best management practice.

Solvent-based Paint: paint or coatings made with solvent or oil rather than water.

Types of paint or coatings used at BC Hydro that are usually solvent-based include:

- alkyd
- urethane or polyurethane
- epoxy
- varnish

Specialty Water-based Paint: paint or coatings made and thinned with water, other than general-purpose acrylic, latex or vinyl water-based paint.

Specialty water-based paints include water-based urethane, epoxy or zinc-primer formulations. These are increasingly being used in some industrial applications.

Note: As at January 31, 2005, BC Hydro is not known to use any specialty water-based paint (mainly for weather reasons).

TDG Information for Waste General-Purpose Water-Based Paint:

For general-purpose waste water-based paint, use:

- Shipping Name: *Waste paint*
- Class: Not regulated
- UN Number: Not regulated
- Packing Group: *Not regulated*

TDG Information for Waste Paint Aerosols:

For waste paint aerosols, use the shipping name, class and UN number given on the MSDS.

If no class or UN number is given, use:

- Shipping Name: *Waste aerosols*
- Class: *2.1*
- UN Number: *UN1950*
- Packing Group: Leave blank

TDG Regulated: regulated by the *TDG Act and Regulations* when transported.

Paints may or may not be regulated when transported.

UN Number: Previously known as product identification number (PIN).

Waste: As applied to paint or coating materials means paint or coating materials that are not suitable for use such as:

- paint or coating materials that are beyond their expiry date
- paint which is the wrong colour
- recovered spilt paint contaminated with dirt

This EBMP does not cover:

- rags and sorbents used to clean up spills of paint—see EBMP - Rags and Sorbents.
- solvents used to thin or clean up after use of paint—see EBMP - Solvent
- managing residues from operations such as sand or hydro-blasting used to remove paint – see EBMP - Blasting Abrasive Material

Water: All water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada. [*Fisheries Act* section 2, definition of Canadian Fisheries Waters] and includes fish habitat.

Water-based Paint: Paint or coatings made and thinned with water.

Types of paint or coatings used at BC Hydro that are usually water-based include:

- acrylic
- latex
- vinyl

The above are referred to as "general-purpose" water-based paint in this EBMP.

However, some solvent-based paints used for industrial applications are available in water-based formulations. These include water-based urethanes, epoxies and zinc-primers. These are referred to as "specialty" water-based paint in this EBMP.

Note: As at January 31, 2005, BC Hydro is not known to use any specialty water-based paint (mainly for weather reasons).

Two labels and the UN number must be used for class 8 (3). The UN number can be shown either:

- in a white rectangle on the class 8 label as above (replace XXXX with the UN number, no UN before the number), or
- next to the class 8 label with UN before the number

WHMIS Labels: If needed, get WHMIS workplace labels from the Material Safety Data Sheet database.

Remove or erase any labels that do not apply.

Solvent

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Introduction

Purpose: To document Environmental Best Management Practices for using or managing solvent, based on a life-cycle approach from purchasing through to recycling or disposal.

Scope: Handling and use of all types of solvent except for:

- water-based cleaners such as Mr Clean or Fantastik, or
- managing aerosol cans that contain solvent

Note: This EBMP is over five years old and may contain out dated information. Please contact Environmental Risk Management prior to using this document.

Environmental Considerations

Choice of Solvent	<p>Choose the safest solvent to do what is needed—as a guide use the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.</p> <p>Do not use chlorinated solvents. It is BC Hydro policy not to use chlorinated solvents.</p>
Hazards	<p>Spills or leaks can cause:</p> <ul style="list-style-type: none"> • personal injury • environmental damage including contamination of ground and surface water and soil, harm to animal life, damage to assets, and unplanned expenditures for corrective action • non-compliance with environmental legislation
Transport of Dangerous Goods Regulations	<p>Unless an exemption allows something else, solvent is regulated in transport if:</p> <ul style="list-style-type: none"> • the flash point is less than 60.5°C, or • there are any TDG or DOT classes listed on the MSDS <p>Note: An exemption often applies to solvent if it has a flash point between 37.8°C and 60.5°C—see Flammable Liquids with Flash Point above 37.8°C [100°F].</p>
Env Management Act and Hazardous Waste Regulation	<p>Waste solvent must be managed as hazardous waste as per the <i>Environmental Management Act</i> and the <i>Hazardous Waste Regulation</i>.</p>
Fisheries Act and Spill Reporting Regulation	<p>Under the federal <i>Fisheries Act</i>, any spills of solvent to fish-bearing waters must be reported to the Department of Fisheries and Oceans.</p> <p>Under the BC <i>Spill Reporting Regulation</i>, in general spills of solvent must be reported if they are:</p> <ul style="list-style-type: none"> • more than 5 L for waste solvent, or • more than 100 L for most other cases <p>Special cases are:</p> <ul style="list-style-type: none"> • tetrachloromethane (same as carbon tetrachloride), 1 L • tetrachloroethylene (same as perchloroethylene or perc), trichloroethane (same as R140), or any other solvent in class 6.1, 5 L

General Management Principals

BC Hydro is committed to managing solvents in an environmentally sound and responsible manner. In summary, the main principles for managing solvents are:

- Solvents will be used and handled to minimize risks to human health, property, and the environment.
- Solvents will be used and handled according to applicable legislation and codes.
- Chlorinated solvents or products containing chlorinated solvents will not be purchased or used.
- Solvent will be used in the smallest amount needed to meet specific performance objectives.
- Solvent will be handled and used in ways that prevent release to water or land, and that minimize release to the air.
- Solvents will be recovered as much as possible for reuse or recycling.
- Solvent that cannot be recycled and wastes containing solvent will be disposed so that environmental concerns associated with them are removed.

Other sections of this best management practice provide more information for various specific situations.

Purchasing

MMBU Purchase of Solvent	Where possible, buy solvent through MMBU to ensure control and monitoring through the material management system.
Local Purchase of Solvent	When buying solvent locally: <ul style="list-style-type: none"> • select the solvent as per the applicable occupational health and safety standards for selection and use of solvents for your Line of Business, Business Unit, or Client • select environmentally friendly solvents where possible • do not buy chlorinated solvents: use of chlorinated solvents is against BC Hydro policy • if possible, select a supplier that offers a return program for waste solvent if this will be generated during use (for example, mineral spirit-type solvents used for degreasing) • buy the smallest amount of solvents needed for use and inventory requirements (to reduce leftovers and the amount stored) • make sure an MSDS suitable for use in Canada is available on the BC Hydro MSDS system or is supplied with the solvent • make sure containers have labels, including WHMIS labels <p>Note: Consumer products bought at retail outlets do not have to have WHMIS labels. However, if these products are used in the workplace and are in one or more WHMIS classes, there must be an MSDS on site, and workplace WHMIS labels must be put on the containers.</p>

Use and Handling

Decanting Into Containers Less than 5 L

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> <p>Have a portable dry chemical (ABC or BC) fire extinguisher within 10 m.</p>
Containment	<p>Where possible, decant inside containment that can hold 110 percent of the total solvent being handled.</p> <p>At minimum, decant over surfaces that do not absorb liquids.</p> <p>Do not decant near drains or watercourses.</p>
Fire and Explosion Prevention	<p>Follow site fire protection rules.</p> <p>At minimum, make sure the area where solvent is decanted is:</p> <ul style="list-style-type: none"> • well ventilated • at least 6 m [20 feet] from any open flames or sparking equipment if the solvent flash point is less than 37.8°C (see MSDS) <p>Do not use compressed air to push solvent out of a container.</p>
Compatible Container	If decanting into a plastic container, make sure this is compatible with the solvent.
Static Prevention	Use electrical bonding between containers if this is practical.
Spill Prevention	<p>Where possible, decant from drums using a top-mounted hand or air-operated pump.</p> <p>Check the filled container for leaks.</p> <p>Close containers when not in use.</p>
Drip/Spill Collection	<p>Use a drip tray when decanting.</p> <p>Reuse collected drips/spills if possible.</p> <p>If reuse is not possible, clean up drips or spills promptly.</p> <p>Note: Collecting drips or spills as liquid, and putting into a container is preferred to absorbing with sorbents—it makes less waste.</p>

Labels	<p>Put a WHMIS label on the filled container unless all the solvent will be used immediately. Get WHMIS labels from the MSDS database if needed.</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>
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Filling/Transfers to Containers Larger than 5 L

Safety	<p>Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.</p>
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> <p>Have a portable dry chemical (ABC or BC) fire extinguisher within 10 m.</p>
Containment	<p>Where possible, keep containers and any hoses inside containment that can hold 110 percent of the total solvent being handled.</p> <p>At minimum, fill containers over surfaces that do not absorb liquids.</p> <p>Do not fill containers near drains or watercourses.</p>
Fire and Explosion Prevention	<p>Follow site fire protection rules.</p> <p>At minimum, make sure the area where solvent is put into containers is:</p> <ul style="list-style-type: none"> • well ventilated • at least 6 m [20 feet] from any open flames or sparking equipment if the solvent flash point is less than 37.8°C (see MSDS) <p>Do not use compressed air to push solvent out of a container.</p>
Compatible Materials	<p>If using hoses, make sure these are compatible with the solvent.</p>

<p>Suitable Container</p>	<p>Make sure that containers are in good condition and suitable for the solvent.</p> <p>This means containers that:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are selected and marked as per UN standards unless an exemption allows something else <p>Do not put solvent in plastic containers unless the containers:</p> <ul style="list-style-type: none"> • are known to be compatible with the solvent (solvents attack many plastics), and • are allowed for this use by the Fire Code
<p>Static Prevention</p>	<p>Electrically bond metal containers. Fill plastic containers slowly to reduce static build-up (less than 15 L/min [3.3 gpm] for 3/4" I.D. hoses or 30 L/min [6.6 gpm] for 1" I.D. hoses).</p> <p>If using hoses, use hoses having a bonding wire or braiding.</p> <p>Do not drop fill containers: direct the flow down the inside of the container or use an extension pipe to the bottom of the container.</p>
<p>Spill Prevention</p>	<p>Where possible, transfer from containers using a top-mounted hand or air-operated pump.</p> <p>Monitor the transfer continuously to make sure that the receiving container is not leaking or overfilled.</p> <p>Close containers when not in use.</p>
<p>Drip/Spill Collection</p>	<p>Use a drip tray when filling.</p> <p>Reuse collected drips/spill if possible. If reuse is not possible, clean up drips or spills promptly.</p> <p>Note: Where possible, collect drips or spills as liquid, and put them into a container. This makes less waste than using sorbents.</p>
<p>Labels – New Solvent</p>	<p>Make sure filled containers of new solvent have WHMIS labels.</p> <p>In addition, if the new solvent is TDG regulated and will be transported off site, see “Marking Instructions: TDG Regulated New Solvent.”</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>

Labels – Waste Solvent	<p>Make sure filled containers of waste solvent have WHMIS and waste labels.</p> <p>If the waste solvent is:</p> <ul style="list-style-type: none"> • TDG regulated, see “Marking Instructions: TDG Regulated Waste Solvent” • not TDG regulated, see “Marking Instructions: Non TDG Regulated Waste Solvent.” <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>
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General Use and Handling Procedures

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion. <p>Note: Waste sorbents from clean-up of solvent spills and rags from wiping solvent-cleaned parts are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> Have a portable dry chemical (ABC or BC) fire extinguisher within 10 m.
Containment	Where possible, handle solvent inside containment which can hold 110 percent of the total solvent being handled. <p>At minimum, handle solvent over surfaces that do not absorb liquids.</p> Know the site spill contingency plan, including the location of drains. <p>Do not handle solvent near drains or watercourses unless these are protected.</p>
Fire and Explosion Prevention	Follow site fire protection rules. <p>At minimum, make sure the area where solvent is used is:</p> <ul style="list-style-type: none"> • well ventilated • at least 6 m [20 feet] from any open flames or sparking equipment if the solvent flash point is less than 37.8°C (see MSDS)
Spill Prevention	Drain parts on contained racks after solvent washing. Turn parts over if they have places that hold solvent. <p>Close containers when not in use.</p> Keep containers cool and out of direct sunlight.
Amounts	Do not use more than is needed.

Drip/Spill Collection	Use drip trays or drainage racks over trays when using solvent. Reuse collected drips/spills if possible. Note: Where possible, collect drips or spills as liquid, and put them into a container. This makes less waste than using sorbents. Clean up drips or spills promptly. See “Spill Response” in case of spills outside of contained areas.
Labels	Make sure that containers have WHMIS labels unless all solvent in the containers will be used immediately. Get WHMIS labels from the MSDS database if needed. If the containers were used before for something else, remove or erase any labels that no longer apply.
Cleaning Paint Guns	See Paints and Coatings EBMP.

Transport

Transporting New Solvent

Find out if the solvent is TDG regulated and then see the sections that apply.

The solvent is **not** TDG regulated if **all** of the following apply:

- the flash point is above 37.8°C
- the solvent is only in TDG Class 3
- the container size is less than 450 L
- transport is by road, rail, or domestic ship

The flash point and any TDG or DOT classes are usually found in the sections of the MSDS called Product Information, Fire Fighting, Properties, Transport, Regulatory, or something similar.

If any part of the transport is by air, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: this section also applies to empty containers

Transporting New TDG Regulated Solvent

Shipping: Planning

The shipper is responsible for the following:

TDG Training	Have, or work under the supervision and in the presence of someone who has: <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training When arranging transport, specify that the carrier must have: <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Precautions	Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion. <p>Note: Waste sorbents from clean up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> Make sure that drains or watercourses to which spilled solvents might leak are protected (e.g., use a drain cover).

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion. <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> Make sure that drains or watercourses to which spilled solvents might leak are protected (e.g., use a drain cover).

<p>Condition and Leak Check</p>	<p>Check that containers and any packing are in good condition and suitable for transport.</p> <p>This means packing/containers that:</p> <ul style="list-style-type: none"> do not leak or bulge are not significantly rusted, dented, or damaged (steel containers) are not cracked or brittle (plastic containers) are properly assembled and not damaged (cardboard boxes for shipping smaller containers) are marked with a packaging code like that below, unless an exemption allows something else <div style="text-align: center;">  <p>(Click for explanations)</p> </div> <p>If unsuitable containers are found:</p> <ul style="list-style-type: none"> transfer the solvent to a suitable container—see “Filling/Transfers to Barrels and Containers”, or use an overpack container to contain the unsuitable container see “Spill Response” for clean-up of any leakage
<p>Closure Check</p>	<p>Make sure that all containers are properly closed.</p>
<p>Packaging</p>	<p>Package to:</p> <ul style="list-style-type: none"> keep containers upright prevent leaks or spills during expected conditions of transport allow safe unloading at the receiving location (call ahead—do not assume the receiving location has the same facilities as the shipping location) keep separate from other materials that might damage the container in transit (e.g., sharp edges or containers of corrosive liquid such as battery acid, in case they should leak) <p>Preferred packaging for:</p> <ul style="list-style-type: none"> barrels is strapped together and strapped to pallets in good condition, as long as the pallets can be safely handled at both the shipping and receiving locations containers less than 5 L, is in a cardboard box with packing
<p>Labels</p>	<p>Make sure that all containers have TDG and WHMIS labels as per References Marking Instructions</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>

Documentation	<p>Complete a shipping document unless an exemption allows something else. When completing a shipping document, see:</p> <ul style="list-style-type: none"> • the solvent MSDS for the shipping name, UN number, class, and packing group • the Placard Table for placards • How to Complete a Shipping Document if necessary <p>Note: When a container has been emptied so it is less than 10 percent full, write "Residue—Last Contained" followed by the shipping name to show the amount of solvent in the container.</p>
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Shipping: Loading

The shipper is responsible for the following:

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled solvents might leak are protected (e.g., use a drain cover).</p> <p>Check that the carrier has sorbents and a copy of the Spill Response card on the truck.</p>
TDG Training	Make sure that the carrier's <i>TDG Certificate of Training</i> has not expired.
Placards	If the gross mass of all dangerous goods is more than 500 kg, make sure that the placards shown in the "Placard Table" are on all four sides of the transport unit before loading. The shipper must offer to provide the placards if they are needed.
Loading Equipment and Methods	Use equipment and methods designed to handle and load the containers safely—see Loading and Unloading of Trucks.
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping document or bill of lading.

Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
Documentation	If the load is being transported under an exemption , provide the carrier with: <ul style="list-style-type: none"> • a copy of the bill of lading for the shipment, and • any document or permit the exemption says is needed Otherwise: <ul style="list-style-type: none"> • have the Carrier sign all copies of the shipping document when accepting the shipment • keep the Consignor (Shipper) copy on file for at least two years • give the other copies to the carrier

Carrying: Accepting

The carrier is responsible for the following:

TDG Training	Have: <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Precautions	Have a copy of the Spill Response card on the truck in case leak/spill response is needed in transit. Have sorbents available for leak/spill response. Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.

<p>Label Check</p>	<p>Check that:</p> <ul style="list-style-type: none"> • the containers have TDG labels • the labels on the containers are consistent with what is on the shipping documentation, and • the containers are marked with a packaging code like that below, unless an exemption allows something else <div style="text-align: center;">  <p>(Click for explanations)</p> </div>
<p>Condition and Leak Check</p>	<p>Check that containers and any packing are in good condition and suitable for transport.</p> <p>This means packing/containers that:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged (steel containers) • are not cracked or brittle (plastic containers) • are not damaged (cardboard boxes for shipping smaller containers) • are marked with the packaging code shown above, unless an exemption allows something else <p>Do not accept any unsuitable containers unless fully contained in an overpack.</p>
<p>Closure Check</p>	<p>Check that containers are properly closed (applies to the outermost container where little containers are inside another container).</p>
<p>Packaging Check</p>	<p>Check that any packaging (for example, pallets or strapping) is in good condition for transport.</p>
<p>Placard Check</p>	<p>If the gross mass of all dangerous goods is more than 500 kg, make sure that the placards shown in the “Placard Table” are on all four sides of the transport unit before loading.</p> <p>The shipper must offer to provide the placards if they are needed.</p>

Acceptance	Accept the shipment for transport based on the above checks and have it loaded. If the load is being transported under an exemption: <ul style="list-style-type: none"> • check that the terms of the exemption apply • take whatever shipping document the exemption says is needed If the load is being transported using a shipping document, sign all copies and return the Consignor (Shipper) copy to the shipper. Note: The carrier is not allowed to take passengers if the amount of solvent per package is more than the quantity limit.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.
Safe and Secure	Check that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides • in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	Keep a copy of the shipping documentation in the place specified by the <i>TDG Regulations</i> . See Document Locations if necessary.
Placards	Replace any lost or damaged placards, if placards are needed. See "Placard Table" if necessary.
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.
Spill Response	Follow guidelines on the Spill Response card in case of a spill.
Spill Reporting – Verbal, Internal	Report any spill involving solvent in transit. BC Hydro Employees Report to: <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle Contractors Report to:

	<ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="646 457 1385 562"> <tr> <td data-bbox="646 457 833 510">Edie Thome</td> <td data-bbox="833 457 1092 510">Tel. 604.528.3419</td> <td data-bbox="1092 457 1385 510">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="646 510 833 562">Lisa Seppala</td> <td data-bbox="833 510 1092 562">Tel. 604.528.2500</td> <td data-bbox="1092 510 1385 562">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
Spill Reporting – Verbal, External	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L for Solvent in Class 3 or more than 5 L for Solvent in Class 6.1):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain.)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water. The notification to PEP must include the following information: <ul style="list-style-type: none"> – name and phone number of the person providing notification of the spill – name and phone number of the spiller – location, time, and date of the spill – material spilled and quantity – cause and effect of the spill – action taken or proposed action to contain the spill – duration of the spill – weather conditions – planned follow-up – government agencies on the scene – persons or agencies advised <p>In addition, if the spill is more than 100 L for solvent in Class 3 or more than 5 L for solvent in Class 6.1, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p>						

	<p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L for Solvent in Class 3 or Less than 5 L for Solvent in Class 6.1:</p> <p>For spills to land less than 100 L for solvent in Class 3 or less than 5 L for solvent in Class 6.1 where there is potential for the spill to reach water, contact Environmental Risk Management for advice on further notification.</p>
Spill Reporting	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Carrying: Delivering

The carrier is responsible for the following:

Receiver Signature	<p>If a shipping document was used, have the receiver sign the Carrier copy when accepting the shipment.</p> <p>Give a copy of the shipping documentation to the receiver.</p>
Copies	<p>If a shipping document was used, keep the Carrier copy on file for at least two years.</p>
Removal of Placards	<p>Remove or cover the placards after unloading, unless cleaning is needed to remove leaked or spilt dangerous goods.</p> <p>If cleaning is needed, remove the placards after cleaning.</p>

Receiving

The receiver is responsible for the following:

Safety	<p>Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.</p>
TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid <i>TDG Certificate of Training</i>
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled solvents might leak are protected (e.g., use a drain cover).</p>
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on the shipping documentation

	<ul style="list-style-type: none"> there are no signs of leakage from the containers <p>If leaks are found:</p> <ul style="list-style-type: none"> use an overpack to contain the leaking container, or transfer the solvent to a sound container—see “Filling/Transfers to Barrels and Containers” see “Spill Response” for clean-up of any leakage
Acceptance	<p>Accept the shipment based on the above checks.</p> <p>If a shipping document was used for transporting the shipment:</p> <ul style="list-style-type: none"> sign the Carrier copy return the Carrier copy to the carrier
Unloading Equipment and Methods	<p>Use equipment and methods designed to handle and unload the containers safely – see Loading and Unloading of Trucks.</p>

Transporting New Non TDG Regulated Solvent

Shipping: Preparing

The shipper is responsible for the following:

Safety	<p>Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.</p>
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMP - Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled solvents might leak are protected (e.g., use a drain cover).</p>
TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> up-to-date training in the <i>TDG Regulations</i> a valid TDG Certificate of Training

Condition and Leak Check	<p>Check that containers and any packing are in good condition and suitable for transport.</p> <p>This means packing/containers that:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged (steel containers) • are not cracked or brittle (plastic containers) • are properly assembled and not damaged (cardboard boxes for shipping smaller containers) <p>If unsuitable containers are found:</p> <ul style="list-style-type: none"> • transfer the solvent to a suitable container—see “Filling/Transfers to Barrels and Containers”, or • use an overpack container to contain the unsuitable container • see “Spill Response” for clean-up of any leakage
Closure Check	<p>Make sure that all containers are properly closed.</p>
Packaging	<p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead—do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g., sharp edges or containers of corrosive liquid such as battery acid, in case they should leak) <p>Preferred packaging for:</p> <ul style="list-style-type: none"> • barrels is strapped together and strapped to pallets in good condition, as long as the pallets can be safely handled at both the shipping and receiving locations • containers less than 5 L, is in a cardboard box with packing
Labels	<p>Make sure that all containers have WHMIS labels as per the “Marking Instructions”.</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>
Bill of Lading	<p>Complete a bill of lading for the shipment.</p>

Shipping: Loading

The shipper is responsible for the following:

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled solvents might leak are protected (e.g., use a drain cover).</p> <p>Check that the carrier has sorbents and a copy of the Spill Response card on the truck.</p>
Loading Equipment and Methods	Use equipment and methods designed to handle and load the containers safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the bill of lading.
Load Safe and Secure	<p>Check that:</p> <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: Accepting

The carrier is responsible for the following:

Precautions	Have a copy of the Spill Response card on the truck in case leak/spill response is needed in transit. Have sorbents available for leak/spill response. Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.
Label Check	Check that the containers have labels, and these are consistent with the information shown on the bill of lading.
Condition and Leak Check	Check that containers and any packing are in good condition and suitable for transport. This means packing/containers that: <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged (steel containers) • are not cracked or brittle (plastic containers) • are not damaged (cardboard boxes for shipping smaller containers) Do not accept any unsuitable containers unless fully contained in an overpack.
Closure Check	Check that containers are properly closed (applies to the outermost container where little containers are inside another container).
Packaging Check	Check that any packaging (for example, pallets or strapping) is in good condition for transport.
Acceptance	Accept the shipment for transport based on the above checks and have it loaded. If rejecting the shipment, explain the reasons to the shipper.
Load Safe and Secure	Check that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response card in case of a spill.						
Spill Reporting – Verbal, Internal	<p>Report any spill involving solvent in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> work leader or manager, and owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> BC Hydro person arranging the transport employer, and owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="646 989 1377 1087"> <tr> <td data-bbox="646 989 829 1035">Edie Thome</td> <td data-bbox="837 989 1089 1035">Tel. 604.528.3419</td> <td data-bbox="1097 989 1377 1035">Cel. 778.828.6231</td> </tr> <tr> <td data-bbox="646 1041 829 1087">Lisa Seppala</td> <td data-bbox="837 1041 1089 1087">Tel. 604.528.2500</td> <td data-bbox="1097 1041 1377 1087">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
Spill Reporting – Verbal, External	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> name and phone number of the person providing notification of the spill name and phone number of the spiller location, time, and date of the spill material spilled and quantity cause and effect of the spill action taken or proposed action to contain the spill duration of the spill 						

	<ul style="list-style-type: none"> • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is more than 100 L, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L:</p> <p>For spills to land less than 100 L where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
Spill Reporting	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Receiving

The receiver is responsible for the following:

Safety	<p>Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.</p>
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean up of solvent spills are hazardous waste and must be handled properly – see EBMP - Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled solvents might leak are protected (e.g., use a drain cover).</p>
Shipment Check	<p>Make sure that:</p> <ul style="list-style-type: none"> • what is received agrees with what is on the bill of lading • there are no signs of leakage from the containers <p>If leaks are found:</p> <ul style="list-style-type: none"> • use an overpack to contain the leaking container, or • transfer the solvent to a sound container—see “Filling/Transfers to Barrels and Containers” • see “Spill Response” for clean-up of any leakage

Acceptance	Accept the shipment based on the above checks.
Unloading Equipment and Methods	Use equipment and methods designed to handle and unload the containers safely – see Loading and Unloading of Trucks .

Transporting Waste TDG Regulated Solvent

Find out if the solvent is TDG regulated and then see the sections that apply.

The solvent is **not** TDG regulated if **all** of the following apply:

- the flash point is above 37.8°C
- the solvent is only in TDG Class 3
- the container size is less than 450 L
- transport is by road, rail, or domestic ship

The flash point and any TDG or DOT classes are usually found in the sections of the MSDS called Product Information, Fire Fighting, Properties, Transport, Regulatory or something similar.

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: This sections also apply to empty containers

Shipping: Planning

The shipper is responsible for the following:

TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the TDG Regulations • a valid TDG Certificate of Training <p>When arranging transport, specify that the carrier must have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Shipment Tracking	Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.
Registration of Shipping and Receiving Sites	<p>Find the Registration Quantity for the type of waste being shipped. Refer to the Hazardous Waste Generation Registration Quantity Table.</p> <p>If the waste being shipped is less than the Registration Quantity, the shipping and receiving sites do not have to be registered. Refer to the Hazardous Waste Transport Licence.</p> <p>If the waste being shipped is more than the Registration Quantity, the shipping and receiving sites must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • flammable liquids are registered

	<ul style="list-style-type: none"> the quantity registered is more than the amount of waste solvents being shipped <p>If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number.</p> <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
<p>Hazardous Waste Transport Licence</p>	<p>Before arranging road transport, check if the carrier will need a Hazardous Waste Transport Licence. Refer to the Hazardous Waste Transport License Requirements.</p> <p>If a Hazardous Waste Transport Licence is needed, check at the time of arranging transport that the carrier has a valid license that allows for carrying of solvents or petroleum products.</p>

Shipping: Preparing

The shipper is responsible for the following:

<p>Safety</p>	<p>Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.</p>
<p>Precautions</p>	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly—see EBMP - Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled waste solvents might leak are protected (e.g., use a drain cover).</p>
<p>Condition and Leak Check</p>	<p>Check that containers and any packing are in good condition and suitable for transport.</p> <p>This means packing/containers that:</p> <ul style="list-style-type: none"> do not leak or bulge are not significantly rusted, dented, or damaged (steel containers) are properly assembled and not damaged (cardboard boxes for shipping smaller containers) are marked with a packaging code like that below, unless an exemption allows something else <div style="text-align: center;">  </div> <p>Do not ship waste solvent in plastic containers unless the containers:</p> <ul style="list-style-type: none"> are known to be compatible with the solvent (solvents attack many plastics), and are allowed for this use by the Fire Code

	<p>If unsuitable containers are found:</p> <ul style="list-style-type: none"> • transfer waste solvent to a suitable container—see “Filling/Transfers to Barrels and Containers”, or • use an overpack container to contain the unsuitable container • see “Spill Response” for clean-up of any leakage
Closure Check	Make sure that all containers are properly closed.
Packaging	<p>Package to:</p> <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead—do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g., sharp edges or containers of corrosive liquid such as battery acid, in case they should leak) <p>Preferred packaging for:</p> <ul style="list-style-type: none"> • barrels is strapped together and strapped to pallets in good condition, as long as the pallets can be safely handled at both the shipping and receiving locations • containers less than 5 L, is in a cardboard box with packing
Labels	<p>Make sure that all containers have TDG, waste, and WHMIS workplace labels as per the “Marking Instructions.”</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>

Shipping: Paperwork

The shipper is responsible for the following:

Type of Documentation	<p>Use a movement document/manifest to transport more than 5 L of solvent.</p> <p>Use a shipping document to transport less than 5 L of TDG regulated solvent unless an exemption allows something else.</p> <p>See as applicable:</p> <ul style="list-style-type: none"> • Transporting Using a Movement Document/Manifest • Transporting Using a Shipping Document
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Transporting Using a Movement Document/Manifest

Consignor (Shipper) Information	<p>Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if necessary.</p> <p>Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable.</p> <p>Get the shipping name, UN number, class, and packing group from the solvent MSDS.</p> <p>Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID.</p> <p>If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site.</p> <p>Make sure that emergency contact numbers are filled in.</p> <p>Note: When a container has been emptied so it is less than 10 percent full, write "Residue – Last Contained" followed by the shipping name to show the amount of solvent in the container.</p>
Carrier Information and Signature	<p>Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.</p>
Copies	<p>Do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • if the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the movement document/manifest. • if the waste is being disposed of without being shipped through MMBU, make an additional photocopy of Copy 1 and send the copy to:

	MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.
Inventory Update	Update the waste inventory records to show that the waste has been shipped. Include the date the waste was shipped and the movement document/manifest number. Download and use the <i>Hazardous Waste Inventory Form</i> if necessary. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example.

Transporting Using a Shipping Document

Shipping Document	Complete a shipping document unless an exemption allows something else. When completing a shipping document, see: <ul style="list-style-type: none"> the solvent MSDS for the shipping name, UN number, class, and packing group the "Placard Table" for placards How to Complete a Shipping Document if necessary <p>Note: When a container has been emptied so it is less than 10 percent full, write "Residue—Last Contained" followed by the shipping name to show the amount of solvent in the container.</p>
Carrier Signature	Have the carrier sign all copies of the shipping document when accepting the shipment.
Copies	Do the following with copies of the shipping document: <ul style="list-style-type: none"> Consignor (Shipper) copy-retain on file for at least two years Carrier copy – give to the carrier if the waste is being disposed without being shipped through Salvage Warehouse M, photocopy the completed shipping document and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9
Inventory Update	Update the waste inventory records to show that the waste has been shipped. Include the date the waste was shipped and the shipping document serial number. Download and use the <i>Hazardous Waste Inventory Form</i> if necessary. For a guide to filling out this form, see the Hazardous Waste Inventory Form: Completed Example.

Shipping: Loading

The shipper is responsible for the following:

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMPs – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled waste solvents might leak are protected (e.g., use a drain cover).</p> <p>Make sure the carrier has sorbents and a copy of the Spill Response card on the truck.</p>
TDG Training	Make sure that the carrier's <i>TDG Certificate of Training</i> has not expired.
Hazardous Waste Transport Licence Check	<p>Check the carrier's Hazardous Waste Transport Licence unless one is not needed. Refer to the Hazardous Waste Transport Licence Requirements.</p> <p>Make sure that:</p> <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying of solvents or petroleum products • the licence has not expired
Placards	<p>If the gross mass of all dangerous goods is more than 500 kg, make sure that the placards shown in the "Placard Table" are on all four sides of the transport unit before loading.</p> <p>The shipper must offer to provide the placards if they are needed.</p>
Loading Equipment and Methods	Use equipment and methods designed to handle and load the containers or equipment safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading
Loading Check	Check that the containers loaded match the descriptions and quantities given on the movement document/manifest or bill of lading.

<p>Load Safe and Secure</p>	<p>Check that:</p> <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Carrying: Accepting

The carrier is responsible for the following:

<p>Safety</p>	<p>Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.</p>
<p>Precautions</p>	<p>Have a copy of the Spill Response Card on the truck in case leak/spill response is needed in transit.</p> <p>Have sorbents available for leak/spill response.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.</p>
<p>TDG Training</p>	<p>Have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid <i>TDG Certificate of Training</i>
<p>Hazardous Waste Transport</p>	<p>Have a valid Hazardous Waste Transport Licence that allows carrying of solvent or petroleum products, unless one is not needed. Refer to the Hazardous Waste Transport Licence Requirements.</p>
<p>Label Check</p>	<p>Check that:</p> <ul style="list-style-type: none"> • the containers have TDG and waste labels • the labels on the containers are consistent with what is on the shipping documentation, and • the containers are marked with a packaging code like that below, unless an exemption allows something else <div style="text-align: center;">  </div>

Condition and Leak Check	<p>Check that containers and any packing are in good condition and suitable for transport.</p> <p>This means packing/containers that:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged (steel containers) • are metal unless the shipper can confirm that plastic containers are allowed by the Fire Code • are not damaged (cardboard boxes for shipping smaller containers) • are marked with the packaging code shown above, unless an exemption allows something else <p>Do not accept any unsuitable containers unless fully contained in an overpack.</p>
Closure Check	<p>Check that containers are properly closed (applies only to the outermost container where little containers are inside another container).</p>
Packaging Check	<p>Make sure that any packaging (for example, pallets or strapping) is in good condition for transport.</p>
Placards	<p>If the gross mass of all dangerous goods is more than 500 kg, make sure that the placards shown in the “Placard Table” are on all four sides of the transport unit before loading.</p> <p>The shipper must offer to provide the placards if they are needed.</p>
Acceptance	<p>Accept the shipment for transport based on the above checks and have it loaded.</p> <p>If the shipment is more than 5 L:</p> <ul style="list-style-type: none"> • complete Part B of the movement document/manifest and sign all copies – see How to Complete Part B of a Movement Document/Manifest if needed • return copies 1 and 2 to the shipper • take copies 3 to 6 with the load <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p> <p>If rejecting the shipment, explain the reasons to the shipper.</p> <p>Note: The carrier is not allowed to take passengers if the mass of solvent per package is more than the quantity limit.</p>
Loading Check	<p>Check that the containers loaded match the descriptions and quantities given on the shipping documentation.</p>

Load Safe and Secure	Make sure that: <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	Keep a copy of the shipping documentation in the place specified by the TDG Regulations. See Document Locations if needed. If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. Refer to the Hazardous Waste Transport Licence Requirements if necessary.						
Placards	Replace any lost or damaged placards, if placards are needed. See the Placard Table if necessary.						
Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response card in case of a spill.						
Spill Reporting – Verbal, Internal	Report any spill involving solvent in transit. BC Hydro Employees Report to: <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle Contractors Report to: <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Edie Thome</td> <td style="padding: 2px;">Tel. 604.528.3419</td> <td style="padding: 2px;">Cel. 778.828.6231</td> </tr> <tr> <td style="padding: 2px;">Lisa Seppala</td> <td style="padding: 2px;">Tel. 604.528.2500</td> <td style="padding: 2px;">Cel. 778.866.3251</td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

<p>Spill Reporting – Verbal, External</p>	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L for Solvent in Class 3 or more than 5 L for Solvent in Class 6.1):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is more than 100 L for solvent in Class 3 or more than 5 L for solvent in Class 6.1, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L for Solvent in Class 3 or Less than 5 L for Solvent in Class 6.1:</p> <p>For spills to land less than 100 L for solvent in Class 3 or less than 5 L for solvent in Class 6.1 where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
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Spill Reporting	The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.
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Carrying: Delivering

The carrier is responsible for the following:

Receiver Information and Signature	If the shipment was more than 5 L, have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.
Copies	<p>If a movement document/manifest was needed, do the following with the copies:</p> <ul style="list-style-type: none"> • Copy 4 – keep on file for at least two years • Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
Removal of Placards	<p>If placards were used, remove or cover them after unloading unless cleaning is needed to remove leaked or spilt dangerous goods.</p> <p>If cleaning is needed, remove the placards after cleaning.</p>

Receiving

The receiver is responsible for the following:

Documentation from Carrier	<p>Get the shipping documentation from the carrier.</p> <p>Contact Environmental Risk Management group so that appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one (more than 5 L of solvent received).</p>
TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training

<p>Authorization for Receiving Hazardous Waste</p>	<p>Find the Registration Quantity for the type of waste being received. Refer to the Hazardous Waste Generation Registration Quantity Table (see page 60).</p> <p>If the waste being received is less than the Registration Quantity, the receiving site does not have to be registered. In this case, see the next section on Receiving Check.</p> <p>If the waste being received is more than the Registration Quantity, the receiving site must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the receiving site is on the list • flammable liquids are registered • the quantity registered is more than the amount of waste solvents being received <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
<p>Receiving Check</p>	<p>If what is on the shipping documentation does not agree with what is received, report to your supervisor.</p> <p>Note: For shipments more than 5 L, contact Environmental Risk Management so that the appropriate authorities can be notified, if:</p> <ul style="list-style-type: none"> • the description on the movement document/manifest does not match the shipment, or • the quantity shown on the movement document/manifest is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

<p>Safety</p>	<p>Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.</p>
<p>Precautions</p>	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled waste solvent might leak are protected (e.g., use a drain cover).</p>

Leak Check	Make sure there are no signs of leakage from the containers. If leaks are found: <ul style="list-style-type: none"> • use an overpack drum to contain the leaking container, or • transfer waste solvent to a sound container – see “Filling/Transfers to Barrels and Containers” • see “Spill Response” for clean-up of any leakage
Unloading Equipment and Methods	Use equipment and methods designed to handle and unload the containers safely – see Loading and Unloading of Trucks .

Receiving: Paperwork

The receiver is responsible for the following

Completion of Movement Document/Manifest Part C	If the shipment was more than 5 L, complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if necessary. Enter BCG00122 as the Consignee (Receiver) Provincial ID.
Copies	If the shipment was more than 5 L, do the following with the movement document/manifest copies: <ul style="list-style-type: none"> • Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 • Copy 4 – return to the carrier • Copy 5 – keep on file for at least two years • Copy 6 – mail to the consignor
Inventory Update	Update waste inventory records to show the amount of waste solvent received. Include the date the waste was received and the movement document/manifest number. Download and use the Hazardous Waste Inventory Form  if necessary. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example  .

Transporting Waste Non TDG Regulated Solvent

Find out if the solvent is TDG regulated and then see the sections that apply.

The solvent is **not** TDG regulated if **all** of the following apply:

- the flash point is above 37.8°C
- the solvent is only in TDG Class 3
- the container size is less than 450 L
- transport is by road, rail, or domestic ship

The flash point and any TDG or DOT classes are usually found in the sections of the MSDS called Product Information, Fire Fighting, Properties, Transport, Regulatory or something similar.

If any part of the transport is by air or outside of Canada, requirements are different from those provided below. Call the MMBU Environmental Technical Specialist for assistance.

Note: this section also applies to empty containers

Shipping: Planning

The shipper is responsible for the following:

TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid <i>TDG Certificate of Training</i> <p>When arranging transport, specify that the carrier must have:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid <i>TDG Certificate of Training</i>
Shipment Tracking	<p>Contact the MMBU Environmental Technical Specialist so that the waste can be properly tracked.</p>
Registration of Shipping and Receiving Sites	<p>Find the Registration Quantity for the type of waste being shipped from the Hazardous Waste Quantity Table</p> <p>If the waste being shipped is less than the Registration Quantity, the shipping and receiving sites do not have to be registered. Refer to the section on Hazardous Waste Transport Licence.</p> <p>If the waste being shipped is more than the Registration Quantity, the shipping and receiving sites must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the shipping site is on the list • the receiving site is on the list, if it is a BC Hydro site • flammable liquids are registered • the quantity registered is more than the amount of waste solvents being shipped <p>If the receiving site is not a BC Hydro site, contact the site operator to obtain their registration or permit number.</p> <p>If the shipping or receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Hazardous Waste Transport Licence	<p>Before arranging road transport, check if the carrier will need a Hazardous Waste Transport Licence. Refer to the Hazardous Waste Transport License Requirements.</p> <p>If a Hazardous Waste Transport Licence is needed, check at the time of arranging transport that the carrier has a valid license that allows for carrying of solvents or petroleum products.</p>

Shipping: Preparing

The shipper is responsible for the following:

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled waste solvents might leak are protected (e.g., use a drain cover).</p>
Condition and Leak Check	<p>Check that containers and any packing are in good condition and suitable for transport. This means packing/containers that:</p> <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are properly assembled and not damaged (cardboard boxes for shipping smaller containers) <p>Do not ship waste solvent in plastic containers unless the containers:</p> <ul style="list-style-type: none"> • are known to be compatible with the solvent (solvents attack many plastics), and • are allowed for this use by the Fire Code <p>If unsuitable containers are found:</p> <ul style="list-style-type: none"> • transfer waste solvent to a suitable container – see “Filling/Transfers to Barrels and Containers”, or • use an overpack drum to contain the unsound container • see “Spill Response” for clean-up of any leakage
Closure Check	Make sure that all containers are properly closed.

Packaging	Package to: <ul style="list-style-type: none"> • keep containers upright • prevent leaks or spills during expected conditions of transport • allow safe unloading at the receiving location (call ahead—do not assume the receiving location has the same facilities as the shipping location) • keep separate from other materials that might damage the container in transit (e.g., sharp edges or containers of corrosive liquid such as battery acid, in case they should leak) Preferred packaging for: <ul style="list-style-type: none"> • barrels is strapped together and strapped to pallets in good condition, as long as the pallets can be safely handled at both the shipping and receiving locations • containers less than 5 L, is in a cardboard box with packing
Labels	Make sure that all containers have waste and WHMIS workplace labels as per the “Marking Instructions.” If the containers were used before for something else, remove or erase any labels that no longer apply.

Shipping: Paperwork

The shipper is responsible for the following:

Movement Document/ Manifest or Bill of Lading?	Use a movement document/manifest if the quantity being shipped is more than 5 L. Otherwise, use a bill of lading.
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Transporting Using a Movement Document/Manifest

Consignor (Shipper) Information	Complete Part A of the movement document/manifest. See How to Complete Part A of a Movement Document/Manifest if necessary. Note: Use a ballpoint pen, press hard, and check that all six copies are fully readable. Get the shipping name, UN number, class, and packing group from the solvent MSDS. Enter BCG00122 as the Generator/Consignor Registration No/Provincial ID. If the receiving site is a BC Hydro site, enter BCG00122 as the Intended Receiver/Consignee Registration No/Provincial ID. If the receiving site is not a BC Hydro site, enter the registration or permit number obtained from the operator of the receiving site. Make sure that emergency contact numbers are filled in. Note: When a container has been emptied so it is less than 10
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	percent full, write "Residue – Last Contained" followed by the shipping name to show the amount of solvent in the container.
Carrier Information and Signature	Give all copies of the movement document/manifest to the carrier to complete Part B. See How to Complete Part B of a Movement Document/Manifest if the carrier needs help. Have the carrier sign all copies of the movement document/manifest when accepting the shipment.
Copies	<p>Do the following with the movement document/manifest copies:</p> <ul style="list-style-type: none"> • Copy 1 (white) – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 <p>Note: The Ministry does not accept fax copies.</p> <ul style="list-style-type: none"> • Copy 2 (green) – keep on file for at least two years together with Copy 6 (gold/brown) when it is returned by the receiver of the shipment • Copies 3 to 6 – give to the carrier • if the shipment is being transported out of BC, photocopy Copy 1. Mail the photocopy to the Ministry of Environment at the above address, and mail Copy 1 to the authority for the Province receiving the waste at the address listed on the back of the movement document/manifest. • if the waste is being disposed of without being shipped through Salvage Warehouse M, make an additional photocopy of Copy 1 and send the copy to: MMBU Environmental Technical Specialist 12345 - 88th Avenue Surrey, BC V3W 5Z9 <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
Inventory Update	<p>Update the waste inventory records to show that the waste has been shipped. Include the date the waste was shipped and the movement document/manifest number.</p> <p>Download and use the Hazardous Waste Inventory Form  if necessary. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p>

Shipping: Loading

The shipper is responsible for the following:

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains and watercourses to which spilled waste solvents might leak are protected (e.g., use a drain cover).</p> <p>Check that the carrier has sorbents and a copy of the Spill Response card on the truck.</p>
TDG Training	Make sure the carrier's <i>TDG Certificate of Training</i> has not expired.
Hazardous Waste Transport Licence Check	<p>Check the carrier's Hazardous Waste Transport Licence unless one is not needed. Refer to the Hazardous Waste Transport Licence Requirements.</p> <p>Make sure that:</p> <ul style="list-style-type: none"> • the carrier's vehicle description and registration number match one of those shown on the licence • the licence allows for carrying of solvents or petroleum products • the licence has not expired
Loading Equipment and Methods	Use equipment and methods designed to handle and load the containers or equipment safely – see Loading and Unloading of Trucks .
Load Position	Balance the load as instructed by the carrier.
Accessibility	Make sure the load will be accessible for safe unloading.
Loading Check	Check that the containers loaded match the descriptions and quantities given on the shipping documentation.

Load Safe and Secure	Check that: <ul style="list-style-type: none"> • the carrier's vehicle can safely transport the load • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load
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Carrying: Accepting

The carrier is responsible for the following

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	Have a copy of the Spill Response card on the truck in case leak/spill response is needed in transit. Have sorbents available for leak/spill response. Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.
TDG Training	Have: <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid <i>TDG Certificate of Training</i>
Hazardous Waste Transport Licence	Have a valid Hazardous Waste Transport Licence suitable for carrying of solvent or petroleum products, unless one is not needed. Refer to the Hazardous Waste Transport Licence Requirements.
Label Check	Check that: <ul style="list-style-type: none"> • the containers have waste labels, and • the labels are consistent with what is on the shipping documentation
Condition Check	Check that containers and any packing are in good condition and suitable for transport. This means packing/containers that: <ul style="list-style-type: none"> • do not leak or bulge • are not significantly rusted, dented, or damaged • are metal unless the shipper can confirm that plastic containers are allowed by the Fire Code • are not damaged (cardboard boxes for shipping smaller containers)

	Do not accept any unsuitable containers unless fully contained in an overpack.
Closure Check	Check that containers are properly closed (applies only to the outermost container where little containers are inside another container).
Packaging Check	Make sure that any packaging (for example, pallets or strapping) is in good condition for transport.
Acceptance	<p>Accept the shipment for transport based on the above checks and have it loaded.</p> <p>If the shipment is more than 5 L:</p> <ul style="list-style-type: none"> • complete Part B of the movement document/manifest and sign all copies-see How to Complete Part B of a Movement Document/Manifest if needed • return copies 1 and 2 to the shipper • take copies 3 to 6 with the load <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p> <p>If rejecting the shipment, explain the reasons to the shipper.</p>
Loading Check	Check that the containers loaded match the descriptions and quantities given on the movement document/manifest or bill of lading.
Load Safe and Secure	<p>Make sure that:</p> <ul style="list-style-type: none"> • containers are upright • the load will not shift during transport: <ul style="list-style-type: none"> – in a trailer, the load is strapped or tied to both walls and floor – on a flatbed, the load is strapped and cinched down to the floor or to ratchet winches on the sides – in a pickup, the load is strapped to the sides of the box • no sharp edges might damage or puncture the load • no other items being carried could shift and damage or puncture the load

Carrying: In Transit

The carrier is responsible for the following:

Location of Documents	<p>Keep a copy of the shipping documentation in the place specified by the TDG Regulations. See Document Locations if needed.</p> <p>If the shipment requires a Hazardous Waste Transport Licence, keep a copy of the licence in the cab. Refer to Hazardous Waste Transport Licence Requirements if necessary.</p>
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Load Check	Check the load at least every 8 hours to make sure it has not shifted or started to leak.						
Spill Response	Follow guidelines on the Spill Response card in case of a spill.						
Spill Reporting – Verbal, Internal	<p>Report any spill involving solvent in transit.</p> <p>BC Hydro Employees</p> <p>Report to:</p> <ul style="list-style-type: none"> • work leader or manager, and • owner of the vehicle if it is not a BC Hydro vehicle <p>Contractors</p> <p>Report to:</p> <ul style="list-style-type: none"> • BC Hydro person arranging the transport • employer, and • owner of the vehicle <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="646 888 1377 993"> <tr> <td data-bbox="646 888 833 940"> Edie Thome </td> <td data-bbox="841 888 1092 940"> Tel. 604.528.3419 </td> <td data-bbox="1101 888 1377 940"> Cel. 778.828.6231 </td> </tr> <tr> <td data-bbox="646 940 833 993"> Lisa Seppala </td> <td data-bbox="841 940 1092 993"> Tel. 604.528.2500 </td> <td data-bbox="1101 940 1377 993"> Cel. 778.866.3251 </td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					
Spill Reporting – Verbal, External	<p>Spill to Water (Any Quantity), or Spill to Land (More than 100 L):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and • local municipality or Regional District if the spill is to a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene 						

	<ul style="list-style-type: none"> • persons or agencies advised <p>In addition, if the spill is more than 100 L, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There Is Potential for the Spill to Reach Water, Less than 100 L:</p> <p>For spills to land less than 100 L where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
Spill Reporting	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p>

Carrying: Delivery

The carrier is responsible for the following:

Receiver Information and Signature	<p>If the shipment was more than 5 L, have the receiver complete and sign Copies 3 to 6 of the movement document/manifest.</p>
Copies	<p>If a movement document/manifest was needed, do the following with the copies:</p> <ul style="list-style-type: none"> • Copy 4 – keep on file for at least two years • Copies 3, 5, and 6 – give to the receiver <p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the movement document/manifest copies.</p>
Removal of Placards	<p>If placards were used, remove or cover them after unloading unless cleaning is needed to remove leaked or spilt dangerous goods.</p> <p>If cleaning is needed, remove the placards after cleaning.</p>

Receiving

The receiver is responsible for the following:

Documentation from Carrier	<p>Get the shipping documentation from the carrier.</p> <p>Contact Environmental Risk Management so that appropriate authorities can be notified if there is no movement document/manifest when there is supposed to be one (more</p>
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	than 5 L of solvent received).
TDG Training	<p>Have, or work under the supervision and in the presence of someone who has:</p> <ul style="list-style-type: none"> • up-to-date training in the <i>TDG Regulations</i> • a valid TDG Certificate of Training
Authorization for Receiving Hazardous Waste	<p>Find the Registration Quantity for the type of waste being received, from the Hazardous Waste Quantity Table</p> <p>If the waste being received is less than the Registration Quantity, the receiving site does not have to be registered. In this case, see the next section on Receiving Check.</p> <p>If the waste being received is more than the Registration Quantity, the receiving site must be registered. Go to the BC Hydro Hazardous Waste Generator Registration Summary  and confirm that:</p> <ul style="list-style-type: none"> • the receiving site is on the list • flammable liquids are registered • the quantity registered is more than the amount of waste solvents being received <p>If the receiving site is not registered as it must be, contact the MMBU Environmental Technical Specialist to request a registration update.</p>
Receiving Check	<p>If what is on the shipping documentation does not agree with what is received, report to your supervisor.</p> <p>Note: For shipments more than 5 L, contact Environmental Risk Management so that the appropriate authorities can be notified, if:</p> <ul style="list-style-type: none"> • the description on the movement document/manifest does not match the shipment, or • the quantity shown on the movement document/manifest is not within five percent of the shipment quantity for shipments more than 100 kg or 100 L

Receiving: Unloading

The receiver is responsible for the following:

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or Client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled waste solvent might leak are protected (e.g., use a drain cover).</p>

Leak Check	Make sure there are no signs of leakage from the containers. If leaks are found: <ul style="list-style-type: none"> • use an overpack drum to contain the leaking container, or • transfer waste solvent to a sound container—see “Filling/Transfers to Barrels and Containers” • see “Spill Response” for clean-up of any leakage
Unloading Equipment and Methods	Use equipment and methods designed to handle and unload the containers safely – see Loading and Unloading of Trucks .

Receiving: Paperwork

The receiver is responsible for the following:

Completion of Movement Document/Manifest Part C	If the shipment was more than 5 L, complete Part C of the movement document/manifest. See How to Complete Part C of a Movement Document/Manifest if necessary. Enter BCG00122 as the Consignee (Receiver) Provincial ID.
Copies	If the shipment was more than 5 L, do the following with the movement document/manifest copies: <ul style="list-style-type: none"> • Copy 3 – mail within three days to: Hazardous Waste Program Ministry of Environment PO Box 9342 Stn Prov Govt Victoria BC V8W 9M1 • Copy 4 – return to the carrier • Copy 5 – keep on file for at least two years • Copy 6 – mail to the consignor
Inventory Update	Update waste inventory records to show the amount of waste solvent received. Include the date the waste was received and the movement document/manifest number. Download and use the Hazardous Waste Inventory Form  if necessary. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example  .

Transporting Empty Containers

Transport empty containers using the same precautions as full ones unless the containers have been proven to be truly empty. This is because containers typically contain residual solvent when emptied. If these containers are not properly closed, or become damaged, there is a significant risk of leakage or spillage during transport.

See as applicable:

- “Transporting New Solvent”
- “Transporting Waste Solvent”

Storage

Storing New Solvent

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean-up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled solvents might leak are protected (for example, use a drain cover).</p>
Inventory	Minimize the storage of new solvent by buying the smallest amount needed for use and inventory.
Containers	<p>Make sure that containers for solvent are:</p> <ul style="list-style-type: none"> • compatible with the solvent (contact the supplier if unsure about compatible materials) • in good condition • closed during storage • handled, stored, or transported so as not to cause leaks or ruptures
Containment	<p>Provide containment that is the larger of:</p> <ul style="list-style-type: none"> • 110 percent of the volume of the largest single volume of solvent being stored • 25 percent of all the solvent being stored in the containment
Storage Location	<p>Note: There are many <i>Fire Code</i> requirements for storing solvents, especially inside buildings. These details are beyond the scope of this EBMP. Make sure that any storage area is approved by the BC Hydro Fire Marshall.</p> <p>Preferably store solvent in a secure, separate building that:</p> <ul style="list-style-type: none"> • is non-combustible • provides protection from the weather • is cool and well-ventilated • has floors that do not absorb liquids • does not have any drains to sewer <p>New solvent stored in buildings other than dedicated storage buildings must be in storage rooms or cabinets in full compliance with the Fire Code. The location must:</p> <ul style="list-style-type: none"> • have floors that do not absorb liquids • be away from drains

Storage Requirements	<p>Make sure that solvent is stored:</p> <ul style="list-style-type: none"> • so that the amount is not more than allowed in the room or cabinet in which they are stored (rooms or cabinets for flammable liquids should show clearly the amounts that can be stored in them) • separate from other combustible or dangerous goods as per Fire Code requirements • if using any racking, shelving, or pallets, with these: <ul style="list-style-type: none"> – in good condition – large enough so that containers do not hang over edges – adequate for the weight of the stored materials • with labels outward • with containers upright if possible, or using barrel cradles or containment trays if horizontal storage is necessary • to allow for easy leak inspection (for example, on pallets with aisle space between the pallets) • not more than two high for palletized barrels • away from traffic
Labels	<p>Make sure that all containers have WHMIS labels. If WHMIS labels are missing, get them from the MSDS database.</p> <p>If the containers were used before for something else, remove or erase any labels that no longer apply.</p>
Restricted Access	<p>Restrict site access during non-working hours.</p>
Inspections	<p>Inspect the storage facility monthly or as per the site or station maintenance plan.</p> <p>When inspecting, include:</p> <ul style="list-style-type: none"> • checking pallets for damage • checking containers for leaks or damage – if problems are found: <ul style="list-style-type: none"> – use an overpack drum to contain the leaking container, or – transfer solvents to a sound container – see “Filling/Transfers to Barrels and Containers” – see “Spill Response” for clean-up of any leakage • removal of any incompatible materials in the storage area (for example, fuels, oxidizers, corrosives, etc.) <p>Keep a record of the inspection and report any findings.</p>

Storing Waste Solvent

Physical Requirements

Safety	Handle solvent as per the applicable occupational health and safety standards for your Line of Business, Business Unit, or client.
Precautions	<p>Have sorbents available for leak/spill response. Sorbents used indoors must not support combustion.</p> <p>Note: Waste sorbents from clean up of solvent spills are hazardous waste and must be handled properly – see EBMP – Rags and Sorbents.</p> <p>Make sure that drains or watercourses to which spilled solvent might leak are protected (for example, use a drain cover).</p>
Solvent Mixtures	Do not mix chlorinated solvents with any other materials.
Containers	<p>Make sure that containers for waste solvent are:</p> <ul style="list-style-type: none"> • compatible with the waste (contact the supplier of the new solvent if unsure about compatible materials) • in good condition, with no significant rust, dents, or damage • closed during storage, using leak-tight seals and bungs • handled, stored, or transported so as not to cause leaks or ruptures <p>Do not store waste solvent in plastic containers unless the containers:</p> <ul style="list-style-type: none"> • are known to be compatible with the solvent (solvents attack many plastics), and • are allowed for this use by the <i>Fire Code</i>
Containment	<p>Provide containment that is the larger of:</p> <ul style="list-style-type: none"> • 110 percent of the volume of the largest single volume of waste solvents being stored • 25 percent of all the waste solvent being stored in the containment
Storage Location	<p>Note: There are many <i>Fire Code</i> requirements for storing solvents, especially inside buildings. These details are beyond the scope of this EBMP. Make sure that any storage area is approved by the BC Hydro Fire Marshall.</p> <p>Preferably store waste solvent in a secure, separate building that:</p> <ul style="list-style-type: none"> • is non-combustible • provides protection from the weather • is cool and well-ventilated • has freeze protection if the waste solvent contains water • has floors that do not absorb liquids • does not have any drains to sewer

	<p>Waste solvent stored in buildings other than dedicated storage buildings must be in storage rooms or cabinets in full compliance with the <i>Fire Code</i>. The location must:</p> <ul style="list-style-type: none"> • have non-absorbing floor surfaces • not have any drains to sewer
Storage Requirements	<p>Make sure that waste solvent is stored:</p> <ul style="list-style-type: none"> • so that the amount is not more than allowed in the room or cabinet in which they are stored (rooms or cabinets for flammable liquids should show clearly the amounts that can be stored in them) • separate from other combustible or dangerous goods as per <i>Fire Code</i> requirements • if using any racking, shelving, or pallets, with these: <ul style="list-style-type: none"> – in good condition – large enough so that containers do not hang over edges – adequate for the weight of the stored materials • with labels outward • with containers upright • to allow for easy leak inspection (for example, on pallets with aisle space between the pallets) • not more than two high for palletized barrels • away from traffic
Labels	<p>Make sure that all containers have waste and WHMIS workplace labels.</p> <p>If the waste solvent is:</p> <ul style="list-style-type: none"> • TDG regulated, see “Marking Instructions: TDG Regulated Waste Solvent” • not TDG regulated, see “Marking Instructions: Non TDG Regulated Waste Solvent”
Restricted Access	<p>Restrict site access during non-working hours.</p>

Administrative Requirements

Minimize Storage Quantities	<p>Dispose of or recycle waste solvent regularly. Keep the amount stored less than the registration quantity – refer to the Hazardous Waste Generator Registration Quantity Table</p> <p>Note: All requirements of the <i>Hazardous Waste Regulation</i> apply to amounts of waste solvent more than the registration quantity that are stored for more than 4 days. Contact the MMBU Environmental Technical Specialist for assistance.</p>
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<p>Storage Record</p>	<p>Keep a record of stored waste solvent on site at all times. Record as applicable:</p> <ul style="list-style-type: none"> • the identification number of the container • when the container is received or stored • what is in the container (the shipping name and UN number for TDG regulated waste solvent) • how much is in the container, in kilograms or litres • when the container is removed from storage or shipped from site • where the container is on site • the movement document/manifest number for wastes received or shipped • the number of the certificate of processing or destruction for wastes treated or destroyed <p>Download and use the Hazardous Waste Inventory Form  if needed. For help in filling out this form, see the Hazardous Waste Inventory Form: Completed Example .</p> <p>Keep the storage records on site for at least two years after the waste is removed from the site.</p>
<p>Inspections</p>	<p>Inspect the storage facility monthly or as per the site or station maintenance plan. When inspecting, include:</p> <ul style="list-style-type: none"> • checking pallets for damage • checking containers for leaks or damage – if problems are found: <ul style="list-style-type: none"> – use an overpack drum to contain the leaking container, or – transfer solvents to a sound container – see “Filling/Transfers to Barrels and Containers” – see “Spill Response” for clean-up of any leakage • checking that adjacent drains, if any, are blocked or sealed • removal of any incompatible materials in the storage area (for example, fuels, oxidizers, corrosives, etc.) <p>Keep a record of the inspection and report any findings.</p>

Recycling/Disposal

<p>Recycling/Disposal from Non Vehicle Sources</p>	<p>Recycle/dispose of waste solvent through MMBU</p>
<p>Recycling/Disposal by Vehicle Support Services</p>	<p>Recycle/dispose of waste solvent with a licensed operator such as Safety Kleen.</p>
<p>Storage Before Recycling/Disposal</p>	<p>See “Storing Waste Solvent.”</p>

Shipping for Recycling/Disposal	See "Transporting Waste Solvent."
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Spill Response

The following steps are presented as general guidelines for responding to spills of oil-based materials such as insulating oil, lube oil, or Varsol. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact Environmental Risk Management.

Ensure Safety	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response—see OSH Standards 301: <i>WHMIS and Hazardous Materials</i> and 302: <i>Safety During Spill Response</i>.</p> <p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE). Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> • go to the Material Safety Data Sheet database, or • for dangerous goods in transport, contact ICC The Compliance Center at 604-986-4617 (24 hours) 						
Stop the Flow	Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.						
Secure the Area	<p>Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources. Determine the PCB concentration if applicable.</p> <p>Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>						
Contain the Spill	<p>Protect drains, sewers, culverts, waterways, and ditches, as appropriate.</p> <p>Contain the spilled product with sorbents, pads, or socks such as those contained in an oil spill kit. If an oil spill kit is not available or greater containment is required, use earth and/or sod.</p> <p>Identify all potential sources and the extent of the spilled material. Monitor containment measures.</p>						
Notify/ Report	<p>Internal: For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="646 1772 1380 1873"> <tr> <td data-bbox="646 1772 834 1822"> Edie Thome </td> <td data-bbox="834 1772 1094 1822"> Tel. 604.528.3419 </td> <td data-bbox="1094 1772 1380 1822"> Cel. 778.828.6231 </td> </tr> <tr> <td data-bbox="646 1822 834 1873"> Lisa Seppala </td> <td data-bbox="834 1822 1094 1873"> Tel. 604.528.2500 </td> <td data-bbox="1094 1822 1380 1873"> Cel. 778.866.3251 </td> </tr> </table>	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

	<p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than Reportable Quantity): (Spill to water includes anything directly connected to water, such as a ditch or storm drain.)</p> <p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the Fisheries Act), and • local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the reportable quantity also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity: For spills less than reportable quantity to land where there is</p>
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	<p>potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
<p>Clean Up</p>	<p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, oil, water, and sorbent mixture from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act and Regulations</i> if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste

References

Marking New TDG Regulated Solvent

All containers of new solvent must have WHMIS labels.

In addition, unless an exemption allows something else, containers of TDG regulated new solvent less than 450 L must have:

- TDG markings and labels, and
- UN packaging codes

These marking requirements also apply to drained containers that have not been cleaned.

WHMIS Labels

If needed, get WHMIS workplace labels for the solvent from the MSDS database.

If the containers were used before for something else, remove or erase any labels that no longer apply.

TDG Markings and Labels

The TDG markings and labels are:

- the solvent shipping name
- the solvent UN number
- a hazard/class label on the side (not the bottom or the top)
- if the container will go by ferry or ship at any time, the flash point or flash point range next to the shipping name

If needed, get the shipping name, UN number, and flash point from the solvent MSDS.

Note: The UN number must be shown with the hazard/class label in one of the ways below:

<p>UN Number on the Label (no UN before the number)</p>  <p>UN number in a white box Replace XXXX with the number</p>	<p>UN Number Next to the Label (UN before the number)</p>  <p>Replace XXXX with the number</p>
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The shipper must make sure that the markings and labels are on the containers before loading begins.

The carrier must maintain the markings and labels during transport.

UN Packaging Codes

Containers must have a packaging code like that below, unless an exemption allows something else



Marking New Non TDG Regulated Solvent

All containers of new solvent must have WHMIS labels.

WHMIS Labels

If needed, get WHMIS workplace labels from the MSDS database.

If the containers were used before for something else, remove or erase any labels that no longer apply.

Marking Waste TDG Regulated Solvent

All containers of waste solvent must have:

- completed waste labels, and
- WHMIS labels

In addition, unless an exemption allows something else, containers of TDG regulated waste solvent less than 450 L must have:

- TDG labels, and
- UN packaging codes

These marking requirements also apply to drained containers that have not been cleaned.

WHMIS Labels

If needed, get WHMIS workplace labels for the solvent from the MSDS database. Write "Waste" before the solvent name on the label.

If the containers were used before for something else, remove or erase any labels that no longer apply.

Waste Labels

Get waste labels from the MMBU Environmental Technical Specialist and fill in:

- Container ID: A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label.
- Contents: What is in the container—for example, waste acetone used for cleaning up fibreglass resin.
- Shipping Name: The shipping name from the solvent MSDS.
- UN: The UN number from the solvent MSDS.
- Origin: Where the waste was generated—for example, Ingledow Substation.
- Date: When the waste was generated – use the start date if the container is filled over time.

TDG Markings and Labels

Put:

- a hazard/class label on the side (not the bottom or the top), next to the waste label
- the flash point or flash point range next to the shipping name if the container will go by ferry or ship at any time and the solvent is flammable (Class 3)

Note: If the hazard label cannot be put next to the waste label, the UN number must be shown with the hazard label in one of the ways below.

Type of Solvent	UN Number on the Label (no UN before the number)	UN Number Next to the Label (UN before the number)
Class 3	 <p>UN number in a white box Replace XXXX with the number</p>	 <p>UNXXXX Replace XXXX with the number</p>
Class 6.1	 <p>Replace XXXX with the number</p>	 <p>UNXXXX</p> <p>Replace XXXX with the number</p>

If needed, get the UN number and flash point from the solvent MSDS.

The shipper must make sure that the marking and labels are on the containers before loading begins.

The carrier must maintain the markings and labels during transport.

UN Packaging Codes

Containers must have a packaging code like that below, unless an exemption allows something else.



Marking Waste Non TDG Regulated Solvent

All containers of waste solvent must have:

- completed waste labels, and
- WHMIS labels

These marking requirements also apply to drained containers that have not been cleaned

Waste Labels

Get waste labels from the MMBU Environmental Technical Specialist and fill in:

- Container ID: A number to keep track of the waste container. If this box is not on the label, write the container ID on the top right of the label.
- Contents: What is in the container – for example, waste varsol used for degreasing.
- Shipping Name: The shipping name from the solvent MSDS.
- UN: The UN number from the solvent MSDS.
- Origin: Where the waste was generated—for example, Ingledow Substation.
- Date: When the waste was generated – use the start date if the container is filled over time.

WHMIS Labels

If needed, get WHMIS workplace labels from the MSDS database and write "Waste" before the solvent name on the label.

If the containers were used before for something else, remove or erase any labels that no longer apply

Placard Table

Unless an exemption allows something else, shipments of TDG regulated dangerous goods must have placards if:

- the gross mass of all dangerous goods is more than 500 kg, or
- any amount of liquid dangerous goods is transported in bulk in a container more than 450 L

If placards are needed:

- the shipper must offer to provide the placards
- the placards must be on all four sides of a transport unit before loading, and
- the carrier must maintain the placards until after the goods have been unloaded, unless cleaning is needed to remove spill or leaked dangerous goods

If cleaning is needed, remove the placards after cleaning.

Types of Dangerous Goods	Placard	UN Number
<p>Class 3 (Primary Class) and no other TDG regulated dangerous goods (For example, acetone, xylene, methanol, and/or flammable paints)</p>		<p>Show UN number if:</p> <ul style="list-style-type: none"> • there is more than 4,000 kg of one material, or • any liquid is transported in bulk
<p>Class 6.1 and no other TDG regulated dangerous goods (For example, trichloroethylene and/or tetrachloroethylene†)</p>		<p>Show UN number if:</p> <ul style="list-style-type: none"> • there is more than 4,000 kg of one material, or • any liquid is transported in bulk
<p>Class 3 or 6.1 and other TDG regulated dangerous goods (For example, xylene and acid batteries)</p>	 <p>††See exceptions below.</p>	<p>No UN number</p>

† It is against BC Hydro policy to use chlorinated solvents, so transport of class 6.1 solvents should be very rare. If such transport does occur, it will likely be old waste materials.

†† Exceptions when danger placards cannot be used:

- Danger placards cannot be used for any dangerous goods that:
 - need an Emergency Response Assistance Plan (ERAP)
 - are in a container larger than 450 L
 - are explosives
 - are more than 4,000 kg of the same UN Number from one shipper

Note: For dangerous goods transported by BC Hydro, it will be very rare that Danger placards cannot be used for mixed loads when placards are needed.

- The [ERAP Checker](#)  can be used to see if an ERAP is needed.

Note: The ERAP Checker uses a macro. Click "Yes" or "Enable Macros" if a warning message appears.

If Danger placards cannot be used, contact the [MMBU Environmental Technical Specialist](#) with details to find out what is needed.

Hazardous Waste Generator Registration Quantity Table

Waste Solvent Type	TDG Class	Examples	Registration Quantity†
Flammable	Class 3 Only	Lacquer thinners, acetone, isopropanol, methyl ethyl ketone, toluene, varsol, mineral spirits, d-limonene	500 kg or L
Toxic	Class 6.1 Only	Most Chlorinated Solvents	100 kg or L
Containing More than 50 ppm PCB's	See EBMPs - PCB's		

† the lower quantity applies: for solvents less dense than water, this is the quantity in litres; for solvents more dense than water, this is the quantity in kilograms.

Hazardous Waste Transport Licence Requirements

Waste Solvent Type	TDG Class	Examples	Transport Licence Quantity†	
			Transport by Contractor	Transport by BC Hydro Employee
Flammable	Class 3 Only	Lacquer thinners, acetone, isopropanol, methyl ethyl ketone, toluene, varsol, mineral spirits, d-limonene	5 kg or L	500 kg or L
Toxic	Class 6.1 Only	Most Chlorinated Solvents	5 kg or L	100 kg or L
Containing more than 50 ppm PCB's	See EBMP - PCB's			

† The lower quantity applies: for most solvents this is the quantity in litres; for solvents more dense than water, this is the quantity in kilograms.

Definitions

Chlorinated Solvent: A solvent that is, or that contains, chlorinated organic compounds.

The more common chlorinated solvents are:

- Chloroethene
- Dowclene
- dichloromethane (also known as methylene chloride)
- trichloroethane (also known as 1,1,1-trichloroethane or 1,1,2-trichloroethane)
- trichloroethylene
- tetrachloromethane (also known as carbon tetrachloride)
- tetrachloroethane
- tetrachloroethylene (also known as perchloroethylene or perc)

Class 3: A flammable liquid as defined by the *Transport of Dangerous Goods Regulations*.

- Placard and label for Class 3 below:



Class 6.1: Toxic substance as defined by the *Transport of Dangerous Goods Regulations*.

- Placard and label for Class 6.1 below:



Exceptions When Danger Placards Cannot Be Used: Danger placards cannot be used for any dangerous goods that:

- need an Emergency Response Assistance Plan (ERAP)
- are in a container larger than 450 L
- are explosives
- are more than 4,000 kg of the same UN number from one shipper

Note: For dangerous goods transported by BC Hydro, it will be very rare that Danger placards cannot be used for mixed loads when placards are needed.

The [ERAP Checker](#)  can be used to see if an ERAP is needed.

Note: The ERAP Checker uses a macro. Click "Yes" or "Enable Macros" if a warning message appears.

If Danger placards cannot be used, contact the MMBU Environmental Technical Specialist with details to find out what is needed.

Fish Habitat: Spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [Fisheries Act section 34]

- Fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.
- As a guideline, fish habitat includes the area extending 15 metres inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

Gross Mass: As applied to dangerous goods, means the total mass of dangerous goods including containers.

In Bulk: As it relates to transport of dangerous goods or hazardous waste, means transport where:

- the container is more than 450 L, and
- liquids or gases are in direct contact with the container

For example, transport of flammable paint in a 1.2 m³ (317 US gal) tote container is in bulk.

Transport of flammable paint in 20 L (5 US gal) pails in a 1.2 m³ skid tub is not in bulk.

Land Where There Is Potential for The Spill to Reach Water: Land from which a spill could enter water or fish habitat, where:

- water means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada, and
- fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes (*Fisheries Act* section 34)

Fish habitat can include areas that never contain fish (for example, dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.

As a guideline, fish habitat includes the area extending 15 metres inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

New: As applied to solvent, means solvent that is suitable for use, and includes recycled solvent.

Passenger: A person carried on a road or rail vehicle, **other than:**

- a crew member
- a person who is accompanying dangerous goods or other cargo
- an operator, owner or charterer of the vehicle
- an employee of the operator, owner, or charterer of the vehicle, who is acting in the course of employment
- a person carrying out inspection or investigation duties under an Act of Parliament or of a provincial legislature

Primary class: The primary class for a substance under the *TDG Regulations* means the class representing the most severe hazard of the substance.

If a substance has only one hazard class, this is the primary class.

If a substance has more than one hazard class, the primary class is the first class given in the list of Dangerous Goods in the *TDG Regulations*. Any other classes (usually given in brackets) are subsidiary classes.

For example, methanol is both flammable (class 3) and toxic (class 6.1). Because flammability for methanol is the more severe hazard, methanol is class 3 (primary class) and class 6.1 (subsidiary class).

- The Precedence of Classes Table given in the *TDG Regulations* is used to decide the primary class for substances that have more than one class.

Quantity Limits—Passenger Vehicles: The table below gives the maximum amount per package of some common solvents that are allowed to be carried in a road or rail passenger vehicle. See the TDG Regulations for solvents that are not given below.

Solvent	Quantity Limit (per package)
Acetone	5 L
Ethyl alcohol, packing group II (flash point less than 23°C; boiling point more than 35°C)	5 L
Ethyl alcohol, packing group III (flash point more than 23°C; boiling point more than 35°C)	60 L
Iso-propyl alcohol	5 L
Kerosene	60 L
Methanol	1 L
Methyl ethyl ketone	5 L
Petroleum distillates or products, n.o.s., packing group II (flash point less than 23°C; boiling point more than 35°C)	5 L
Petroleum distillates or products, n.o.s., packing group III (flash point more than 23°C; boiling point more than 35°C) (e.g., Varsol, mineral spirits)	60 L
Toluene	5 L
Xylenes, packing group II (flash point less than 23°C; boiling point more than 35°C)	5 L
Xylenes, packing group III (flash point more than 23°C; boiling point more than 35°C)	60 L

Shipping Documentation: whatever documents must go with a shipment.

Depending what and how much is being shipped, these documents could be one or more of the following:

- a bill of lading

- a full dangerous goods shipping document
- a document with information required by an exemption from TDG requirements
- a movement document/manifest
- a Permit for Equivalent Level of Safety

Solvent: Any non-water based liquid that is used for dissolving other substances.

Many chemicals are used as solvents. Solvents are commonly used for cleaning, degreasing, and thinning.

Products such as Mr Clean or Fantastik are water-based cleaners, and are not covered in this best management practice.

TDG regulated: regulated by the *TDG Act and Regulations* when transported.

Unless an exemption allows something else, solvent is regulated in transport if:

- the flash point is less than 60 °C, or
- there are any TDG or DOT classes listed on the MSDS

The flash point and any TDG or DOT classes are usually found in the sections of the MSDS called Product Information, Fire Fighting, Properties, Transport, Regulatory, or something similar.

Solvents commonly used at BC Hydro that are dangerous goods include:

- Alcohols (e.g., ethyl alcohol, isopropyl alcohol)
- Aliphatics (e.g., kerosene, Indusol, mineral spirits, naphtha, Varsol)
- Aromatics (e.g., toluene, xylene)
- Ketones (e.g., acetone, methyl ethyl ketone, methyl iso-butyl ketone)
- Terpenes (e.g., d-limonene, Citrasafe)
- Thinners (e.g., epoxy, lacquer or urethane thinners)

Note: An exemption often applies to solvent if it has a flash point between 37.8 °C and 60 °C – see Flammable Liquids with Flash Point above 37.8 °C [100 °F].

UN Number: Previously known as product identification number (PIN).

Water: All water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada. [*Fisheries Act* section 2, definition of Canadian Fisheries Waters] and includes fish habitat.

Spill Preparedness

Contents

General 1
 Mercury and Mercury-Contaminated Material 2

General

Note: This EBMP may be out of date. Please contact Environmental Risk Management for changes.

Facilities	<p>BC Hydro facilities that store or use hazardous liquids or oil should have emergency spill response kits.</p> <p>Make sure the spill response kits are:</p> <ul style="list-style-type: none"> • in visible, easily accessible locations • close to where the liquids or oils are stored or in use • appropriate for the liquid they will be used on (for example, oil-specific sorbents are not effective for water-based acids or alkalis) • sealed with break-away tags after the contents have been checked and recorded on an inventory sheet kept inside the kit • protected from weather damage • separate from materials used for spill prevention and clean-up materials used for routine maintenance <p>Contact the Environmental Risk Management group for guidance on:</p> <ul style="list-style-type: none"> • type of kit to get • where to locate kits • number required for a specific facility <p>Make sure that personnel and contractors working on-site know where the spill kits are and what they contain. If a kit is used, replenish the contents and reseal the kit as soon as possible after use.</p> <p>Spill response equipment is available from Main Distribution Center. See the links below for inventories of:</p> <ul style="list-style-type: none"> • Aggressive Liquids Spill Kit  • Stations Spill Kit 
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Vehicles	<p>BC Hydro service vehicles that are used for work on oil-filled equipment, such as line trucks, or that carry equipment that use or store oils and fuels must carry spill response kits.</p> <p>Make sure the emergency response kits are:</p> <ul style="list-style-type: none"> • appropriate for the liquid they will be used on (for example, oil-specific sorbents are not effective for water-based acids or alkalis) • sealed with break-away tags after the contents have been checked and recorded on an inventory sheet kept inside the kit • protected from weather damage <p>Spill response equipment is available from Main Distribution Center. See the links below for inventories of:</p> <ul style="list-style-type: none"> • Aggressive Liquids Spill Kit  • Vehicle Spill Kit 
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Mercury and Mercury-Contaminated Material

Maintain an adequate supply of mercury spill response material and equipment.

Make sure spill response supplies are:

- visible at easily accessible locations
- close to where mercury and mercury-contaminated materials are stored or in use
- sealed with break-away tags after the contents have been checked and recorded on an inventory sheet kept with the supplies
- protected from weather damage
- separate from materials used for spill prevention and clean up during routine maintenance

Contact your Occupational Safety & Health (OSH) Specialist and environmental services group for guidance on:

- type and quantity of spill response supplies to get
- where to locate spill response supplies

Make sure that relevant personnel and contractors know what spill response supplies are available and where they are located.

In case of a mercury spill or leak, follow instructions in Spill Response for Mercury and Mercury-Contaminated Material.

Warning! Do not handle spilled mercury or mercury-contaminated material unless you have been trained in mercury spill cleanup procedures. See OSH Standard [311: Mercury](#).

If spill response supplies are used, replenish the contents and replace the break-away tag as soon as possible after use.

Spill Response

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Spill Kits 13

 Aggressive Liquids Kit..... 13

 Station Kit..... 13

Reportable Quantities 13

Safety

Note: This EBMP may be out of date. Please contact Environmental Risk Management for changes.

See also OSH Standard [302:Safety During Spill Response](#).

Preparedness

Facilities	<p>BC Hydro facilities that store or use hazardous liquids or oil should have emergency spill response kits.</p> <p>Make sure the spill response kits are:</p> <ul style="list-style-type: none"> • in visible, easily accessible locations • close to where the liquids or oils are stored or in use • appropriate for the liquid they will be used on (for example, oil-specific sorbents are not effective for water-based acids or alkalis) • sealed with break-away tags after the contents have been checked and recorded on an inventory sheet kept inside the kit • protected from weather damage • separate from materials used for spill prevention and clean-up materials used for routine maintenance <p>Contact your environmental services group for guidance on:</p> <ul style="list-style-type: none"> • type of kit to get • where to locate kits • number required for a specific facility <p>Make sure that personnel and contractors working on-site know where the spill kits are and what they contain. If a kit is used,</p>
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	<p>replenish the contents and reseal the kit as soon as possible after use.</p> <p>Spill response equipment is available from Main Distribution Centre. See the links below for inventories of:</p> <ul style="list-style-type: none"> • Aggressive Liquids Spill Kit  • Stations Spill Kit 
<p>Vehicles</p>	<p>BC Hydro service vehicles that are used for work on oil-filled equipment, such as line trucks, or that carry equipment that use or store oils and fuels must carry spill response kits.</p> <p>Make sure the emergency response kits are:</p> <ul style="list-style-type: none"> • appropriate for the liquid they will be used on (for example, oil-specific sorbents are not effective for water-based acids or alkalis) • sealed with break-away tags after the contents have been checked and recorded on an inventory sheet kept inside the kit • protected from weather damage <p>Spill response equipment is available from Main Distribution Centre. See the links below for inventories of:</p> <ul style="list-style-type: none"> • Aggressive Liquids Spill Kit  • Vehicle Spill Kit 

Spill Response and Reporting

Aggressive Liquids: Acids or Alkalis (Caustics)

The following steps are presented as general guidelines for responding to spills of aggressive water-based acids or alkalis (caustics) such as battery fluid. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your Regional Environmental Coordinator/ Environmental and Social Issues Manager or your environmental services group.

<p>Ensure Safety</p>	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response – see OSH Standard 301: WHMIS and Hazardous Materials and OSH Standard 302: Safety During Spill Response.</p> <p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE) such as that contained in an aggressive liquids spill kit. Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> • go to the Material Safety Data Sheet database, or • for dangerous goods in transport, contact ICC The Compliance Center at 604-986-4617 (24 hours)
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Stop the Flow	Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.						
Secure the Area	Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources (reactions can generate flammable gases). Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.						
Contain the Spill	Protect drains, sewers, culverts, waterways, and ditches, as appropriate. Contain the spilled product with sorbents, pads, or socks such as those contained in an aggressive liquids spill kit. Do not use oil spill kits on water-based acid or alkali spills—they are not effective for this purpose. If an Aggressive Liquids Spill Kit is not available or greater containment is required, use earth and/or sod. Identify all potential sources and the extent of the spilled material. Monitor containment measures. Warning! Do not try to neutralize spilled materials – this can cause hazardous reactions.						
Notify/Report	<p>Internal:</p> <p>For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="634 1184 1382 1289"> <tr> <td data-bbox="634 1184 821 1236"> Edie Thome </td> <td data-bbox="821 1184 1086 1236"> Tel. 604.528.3419 </td> <td data-bbox="1086 1184 1382 1236"> Cel. 778.828.6231 </td> </tr> <tr> <td data-bbox="634 1236 821 1289"> Lisa Seppala </td> <td data-bbox="821 1236 1086 1289"> Tel. 604.528.2500 </td> <td data-bbox="1086 1236 1382 1289"> Cel. 778.866.3251 </td> </tr> </table> <p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than Reportable Quantity):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the <i>Fisheries Act</i>), and local municipality or Regional District if the spill is to a storm 	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

	<p>or sanitary sewer system, or a source of drinking water</p> <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the reportable quantity, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
<p>Clean Up</p>	<p>Warning! Do not try to neutralize spilled materials – this can cause hazardous reactions.</p> <p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes (for example, HDPE or PVC for many acids or alkalis) • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, soil and battery acid mixture from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods

	<ul style="list-style-type: none"> • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act</i> and Regulations if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste
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Asbestos-Containing Materials

The following steps are presented as general guidelines. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your Regional Environmental Coordinator/Environmental and Social Issues Manager or your environmental services group.

Ensure Safety	Ensure personal and public safety.
Secure the Area	<p>Limit or prevent access to the area. Clear the area of all personnel.</p> <p>Cordon off the area using DANGER ASBESTOS barrier tape if available.</p> <div style="text-align: center;">  <p>The image shows a section of red and white barrier tape. On the left is a red oval with the word 'DANGER' in white. To its right is the text 'ASBESTOS' in bold, followed by smaller text: 'Cancer and Lung Disease Hazard', 'Authorized Personnel Only', 'Respirators And Protective Clothing Are Required In This Area'. On the far right is another red oval with 'DA' in white.</p> </div> <p>Place the tape on stands at least 3 m beyond the perimeter of spilled material.</p> <p>Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>
Notify/Report	<p>Internal:</p> <p>For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p>

Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251

The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.

External – Spill to Water (Any Quantity), or Spill to Land More than Reportable Quantity (More than 25 kg friable ACM in transit; more than 50 kg friable ACM on site; more than 200 kg non-friable ACM in transit or on site):

Notify:

- Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the *Fisheries Act*), and
- local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water

The notification to PEP must include the following information:

- name and phone number of the person providing notification of the spill
- name and phone number of the spiller
- location, time, and date of the spill
- material spilled and quantity
- cause and effect of the spill
- action taken or proposed action to contain the spill
- duration of the spill
- weather conditions
- planned follow-up
- government agencies on the scene
- persons or agencies advised

In addition, if the spill is dangerous goods (friable ACM), in transport, and more than the reportable quantity, also notify:

- local police
- CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and
- owner of a road vehicle, if it is not a BC Hydro vehicle

To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.

External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity (Less than 25 kg friable ACM in transit; less than 50 kg friable ACM on site; less than 200 kg non-friable ACM in transit or on site):

	For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.
Clean Up	<p>Warning! Do not handle spilled ACM unless you are a qualified asbestos contractor.</p> <p>Handle waste ACM using only specialized equipment and qualified asbestos contractors working in accordance with written procedures that meet the WCB Occupational Health and Safety Regulation sections 6.1–6.32. Contact your OSH Specialist for assistance.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, waste asbestos from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated) • date of waste generation <p>Store waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act</i> and Regulations, if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous wastes

Oil-Based Materials

The following steps are presented as general guidelines for responding to spills of oil-based materials such as insulating oil, lube oil, or Varsol. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your Regional Environmental Coordinator/Environmental and Social Issues Manager or your environmental services group.

<p>Ensure Safety</p>	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response—see OSH Standards 301: WHMIS and Hazardous Materials and 302: Safety During Spill Response.</p> <p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE). Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> • go to the Material Safety Data Sheet database, or • for dangerous goods in transport, contact ICC The Compliance Center at 604-986-4617 (24 hours) 						
<p>Stop the Flow</p>	<p>Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.</p>						
<p>Secure the Area</p>	<p>Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources. Determine the PCB concentration if applicable.</p> <p>Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.</p>						
<p>Contain the Spill</p>	<p>Protect drains, sewers, culverts, waterways, and ditches, as appropriate.</p> <p>Contain the spilled product with sorbents, pads, or socks such as those contained in an oil spill kit. If an oil spill kit is not available or greater containment is required, use earth and/or sod.</p> <p>Identify all potential sources and the extent of the spilled material. Monitor containment measures.</p>						
<p>Notify/Report</p>	<p>Internal:</p> <p>For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1" data-bbox="634 1493 1385 1598"> <tr> <td data-bbox="634 1493 824 1545"> <p>Edie Thome</p> </td> <td data-bbox="824 1493 1084 1545"> <p>Tel. 604.528.3419</p> </td> <td data-bbox="1084 1493 1385 1545"> <p>Cel. 778.828.6231</p> </td> </tr> <tr> <td data-bbox="634 1545 824 1598"> <p>Lisa Seppala</p> </td> <td data-bbox="824 1545 1084 1598"> <p>Tel. 604.528.2500</p> </td> <td data-bbox="1084 1545 1385 1598"> <p>Cel. 778.866.3251</p> </td> </tr> </table> <p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than Reportable Quantity):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p>	<p>Edie Thome</p>	<p>Tel. 604.528.3419</p>	<p>Cel. 778.828.6231</p>	<p>Lisa Seppala</p>	<p>Tel. 604.528.2500</p>	<p>Cel. 778.866.3251</p>
<p>Edie Thome</p>	<p>Tel. 604.528.3419</p>	<p>Cel. 778.828.6231</p>					
<p>Lisa Seppala</p>	<p>Tel. 604.528.2500</p>	<p>Cel. 778.866.3251</p>					

	<p>Notify:</p> <ul style="list-style-type: none"> • Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the Fisheries Act), and • local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> • name and phone number of the person providing notification of the spill • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the reportable quantity, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
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<p>Clean Up</p>	<p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, oil, water, and sorbent mixture from spill clean-up) • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act</i> and Regulations if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste
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Water-Based Materials (Non-Aggressive)

The following steps are presented as general guidelines for responding to spills of non-aggressive water-based materials such as coolant. Circumstances or the specific material spilled may dictate another sequence of action. For technical assistance with responding to or cleaning up a spill, contact your Regional Environmental Coordinator/Environmental and Social Issues Manager or your environmental services group.

<p>Ensure Safety</p>	<p>Preplanning, procedures and training are required to prevent exposures to hazardous materials and to ensure regulatory compliance during spill response – see OSH Standard 301: WHMIS and Hazardous Materials and OSH Standard 302: Safety During Spill Response.</p> <p>Prioritize critical issues.</p> <p>Use appropriate personal protective equipment (PPE). Follow applicable safety standards and safe work procedures.</p> <p>For product information:</p> <ul style="list-style-type: none"> • go to the Material Safety Data Sheet database, or
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	<ul style="list-style-type: none"> for dangerous goods in transport, contact ICC The Compliance Center at 604-986-4617 (24 hours) 						
Stop the Flow	Act quickly. Close valves, shut off pumps, plug leaks, set containers upright, and carry out any emergency repairs.						
Secure the Area	Limit or prevent access to the area. Clear the area of all non-essential personnel. Remove or eliminate ignition sources. Inform the owner(s) and/or occupant (s) of the affected property, as soon as practicable, of any actions taken or to be taken to mitigate impacts.						
Contain the Spill	Protect drains, sewers, culverts, waterways, and ditches, as appropriate. Contain the spilled product with sorbents, pads, or socks. Do not use "oil-only" sorbents as they do not absorb water-based materials. If a spill kit is not available or greater containment is required, use earth and/or sod. Identify all potential sources and the extent of the spilled material. Monitor containment measures.						
Notify/Report	<p>Internal:</p> <p>For all spills, notify your work leader or manager as soon as possible.</p> <p>In addition, the managers below must be notified promptly if there is potential for a large environmental impact or public concern.</p> <table border="1"> <tr> <td>Edie Thome</td> <td>Tel. 604.528.3419</td> <td>Cel. 778.828.6231</td> </tr> <tr> <td>Lisa Seppala</td> <td>Tel. 604.528.2500</td> <td>Cel. 778.866.3251</td> </tr> </table> <p>The work leader or manager of the person providing notification of the spill must complete an environmental incident report in the SAP Incident Management System and distribute the report as indicated on the form, preferably within 24 hours of the spill.</p> <p>External – Spill to Water (Any Quantity), or Spill to Land (More than Reportable Quantity):</p> <p>(Spill to water includes anything directly connected to water, such as a ditch or storm drain)</p> <p>Notify:</p> <ul style="list-style-type: none"> Provincial Emergency Program (PEP) at 1-800-663-3456 (24-hour telephone); if the spill is to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada (by memorandum of understanding, Environment Canada is the lead federal agency for receiving spill notifications under section 36(3) (deleterious substances) of the Fisheries Act), and local municipality or Regional District if the spill is to a storm or sanitary sewer system, or a source of drinking water <p>The notification to PEP must include the following information:</p> <ul style="list-style-type: none"> name and phone number of the person providing 	Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231	Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251
Edie Thome	Tel. 604.528.3419	Cel. 778.828.6231					
Lisa Seppala	Tel. 604.528.2500	Cel. 778.866.3251					

	<p>notification of the spill</p> <ul style="list-style-type: none"> • name and phone number of the spiller • location, time, and date of the spill • material spilled and quantity • cause and effect of the spill • action taken or proposed action to contain the spill • duration of the spill • weather conditions • planned follow-up • government agencies on the scene • persons or agencies advised <p>In addition, if the spill is dangerous goods (a substance which is in a TDG class), in transport, and more than the reportable quantity, also notify:</p> <ul style="list-style-type: none"> • local police • CANUTEC at 1-613-996-6666 if a ship or railway vehicle is involved, and • owner of a road vehicle, if it is not a BC Hydro vehicle <p>To maintain good relations, the environmental specialist receiving the EIR should also notify applicable local environmental agency contacts such as the Department of Fisheries and Oceans or the BC Ministry of Environment.</p> <p>External – Spill to Land Where There is Potential for the Spill to Reach Water, Less than Reportable Quantity:</p> <p>For spills less than reportable quantity to land where there is potential for the spill to reach water, contact the group Environmental Specialist for advice on further notification.</p>
<p>Clean Up</p>	<p>Remove contaminated materials and replace with clean materials.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get UN certified containers (if required) and labels from the MMBU Environmental Technical Specialist.</p> <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Put wastes into leak-proof containers that are:</p> <ul style="list-style-type: none"> • compatible with the wastes • UN certified, if the wastes are dangerous goods • labeled <p>Get labels and UN certified containers, if required, from the MMBU Environmental Technical Specialist.</p> <p>Label the waste containers with:</p> <ul style="list-style-type: none"> • an identification number • a description of the contents (for example, soil and coolant

	<p>mixture from spill clean-up)</p> <ul style="list-style-type: none"> • shipping name and UN number, if the wastes are dangerous goods • origin (site/location where waste was generated) • date of waste generation <p>If large quantities of contaminated soil are generated, place the soil on a liner and cover it with a tarp until it can be transferred to appropriate containers.</p> <p>Store the waste appropriately in a secure location until disposal or secure storage can be arranged. Keep the containers closed and protected from the weather.</p> <p>Transport and dispose of the wastes in accordance with:</p> <ul style="list-style-type: none"> • <i>BC Environmental Management Act</i> • <i>Transportation of Dangerous Goods Act</i> and Regulations if the wastes are dangerous goods • <i>Hazardous Waste Regulation</i>, if the wastes are hazardous waste
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Spill Kits

- [Aggressive Liquids Kit](#) 
- [Station Kit](#) 
- [Vehicle Kit](#) 

Reportable Quantities

The table shows the quantities of spilled substances that are reportable under the BC *Spill Reporting Regulation*, the federal *Transport of Dangerous Goods (TDG) Regulations* and the federal *PCB Regulations*. The quantities vary according to the type of substance and in some cases whether the spill occurs during transport or not.

- Spills of any quantity are reportable internally.
- Spills of any quantity to water are reportable externally.
- Spills less than reportable quantity to land where there is potential for the spill to reach water—contact the group Environmental Specialist for advice on further notification.

See “Spill Response” for reporting instructions according to the type of material spilled.

Substance Spilled	TDG Class	Examples	Reportable Quantity*	
			Spill NOT During Transport†	Spill During Transport§
Substances Classified under TDG Regulations				
Explosive	Class 1		Any dangerous release, or 50 kg	Any dangerous release, or 50 kg, or, for Class 1.1,

				1.2, 1.3 or 1.5, as specified in the Table in Section 8.1 of the <i>TDG Regulations</i>
Natural gas	Class 2.1		10 kg when the release is uncontrolled and sudden as a result of a failure of a pipeline or fitting operated above 100 psi	Any dangerous release, or any release for more than 10 min, or 10 kg when the release is uncontrolled and sudden as a result of a failure of a pipeline or fitting operated above 100 psi
Hydrogen	Class 2.1		10 kg when the release is uncontrolled and sudden	
Flammable gas, other than hydrogen or natural gas	Class 2.1	Propane	10 kg	Any dangerous release, or any release more than 10 min, or any release more than 10 kg
Compressed air, nitrogen	Class 2.2		Reporting not required	
CO ₂	Class 2.2		10 kg when the release is uncontrolled and sudden	
SF ₆	Class 2.2		10 kg when the release is uncontrolled and sudden; detailed annual report for other losses	
Non-flammable, non-toxic gas other than compressed air, nitrogen, CO ₂ , or SF ₆	Class 2.2	Halon 1301, refrigerant gases other than R140 (same as trichloroethane)	10 kg	

Toxic or corrosive gas	Class 2.3	Chlorine	5 kg	Any dangerous release, or any release for more than 10 min, or any release more than 5 kg
Flammable liquid	Class 3	Varsol, diesel, gasoline	100 L	100 L
Solid that is flammable or spontaneously combustible, or that emits flammable gases on contact with water	Class 4	Waste sorbent containing oils or fuels	25 kg	25 kg
Oxidizer	Class 5.1	Hydrogen peroxide, many nitrates	50 kg or 50 L	50 kg or 50 L
Organic peroxide	Class 5.2	Some fiberglass catalysts	1 kg or 1 L	1 kg or 1 L
Toxic liquid or solid	Class 6.1	Tetrachloromethane (same as carbon tetrachloride)	1 kg	1 kg
		Tetrachloroethylene (same as perchloroethylene or perc), trichloroethane (same as R140)	5 kg or 5 L	5 kg or 5 L
Infectious substance	Class 6.2		Any dangerous release, or 1 kg, or 1 L	All
Radioactive substance	Class 7		Any dangerous release (an emission level greater than specified in section 20 of the <i>Packaging and Transport of Nuclear Substances Regulations</i>)	Any dangerous release (an emission level greater than specified in section 20 of the <i>Packaging and Transport of Nuclear Substances Regulations</i>)

Corrosive liquid or solid	Class 8	Battery fluid, mercury	5 kg or 5 L	5 kg or 5 L
Friable asbestos	Class 9	Asbestos that releases fibres or crumbles easily	50 kg	25 kg or 25 L
Other miscellaneous dangerous goods	Class 9		25 kg or 25 L	25 kg or 25 L
Materials Containing PCBs				
Solids containing 50 ppm or more PCBs	Class 9		Any quantity	Any quantity
Oil or liquids, containing 2 ppm or more PCBs			Any quantity if released from equipment not in use or from stored containers 1 g of pure PCBs if released from equipment in-use.	Any quantity
Other Substances and Wastes				
Oil (non PCB) and waste oil	—	Class 1 or 2 and waste insulating oil less than 2 ppm PCBs, new and waste hydraulic and lube oil	100 L	100 L
Waste containing dioxin	—	Wastes containing more than 100 ppb dioxin toxicity equivalents (TEQ)	Any dangerous release, or 1 kg, or 1 L	Any dangerous release, or 1 kg, or 1 L
Leachable toxic waste	—	Waste abrasive blasting material, antifreeze or coolant	25 kg or 25 L	25 kg or 25 L
Waste containing polycyclic aromatic hydrocarbons (PAH)	—	Creosote or coal tar contaminated soil containing more than 100 ppm PAH TEQ	5 kg or 5 L	5 kg or 5 L

Waste containing a pest control product	—	Unrinsed empty containers for pest control products, soil or sorbent contaminated with pest control products	5 kg or 5 L	5 kg or 5 L
Waste containing tetrachloroethylene	—	Wastes containing more than 500 ppm tetrachloroethylene (same as perchloroethylene or perc)	50 kg or 50 L	50 kg or 50 L
Biomedical waste	—		Any dangerous release, or 1 kg, or 1 L	Any dangerous release, or 1 kg, or 1 L
Hazardous waste not covered elsewhere	—		25 kg or 25 L	25 kg or 25 L
Other substance not covered elsewhere that can cause pollution	—	Wash water	200 kg or 200 L	200 kg or 200

* Where the quantity is shown as kilograms or litres, the quantity in kilograms applies for solids and the quantity in litres applies for liquids.

† Reportable quantity from the *Spill Reporting Regulation* except for:

- release of specified gases as per agreement between Ministry of Environment and BC Hydro, or
- release of oil containing 2 ppm or more PCBs as per the *PCB Regulations*

§ The least of quantities under the TDG Regulations, PCB Regulations or Spill Reporting Regulation.

APPENDIX C

BC Hydro Environmental Field Guides

Appendix C

Environmental Field Guides

Distribution Oil-Filled Equipment Packaging – Field Guide
Environmental Field Guide #10: Stations – Capacitors and Excavations
Environmental Field Guide #11: Stations – Oil Transfers and Treatment
Environmental Field Guide #12: Oils & Fuels – Transportation, Storage, Use
Approved Practices for Riparian Vegetation – Field Guide
Civil Environmental Field Guide #1: Excavations
Environmental Field Guide #7: Distribution Maintenance – Clearing for Minor Additions
Erosion and Sediment Control – Field Card
Road Maintenance Field Guide #1: Site Access and General Conditions
Road Maintenance Field Guide #14: Erosion and Sediment
Road Maintenance Field Guide #15: Site Re-vegetation
Civil Environmental Field Guide #2: Handling Contaminated Soil
Civil Environmental Field Guide #3: Placing & Finishing Concrete
Civil Environmental Field Guide #4: Pressure Washing for Surface Preparation
Civil Environmental Field Guide #5: Reservoir Debris Collection & Disposal
Civil Environmental Field Guide #6: Drilling
Environmental Field Guide #9: Transmission Maintenance

Distribution oil-filled equipment packaging requirements

Why?

To mitigate the risk of an oil and/or PCB release during transport and storage, PCB containing and/or previously leaking or damaged equipment must be packaged.

Who?

- All line crews
- Line contractors
- Materials Management storekeepers

Where?

At the point of removal in the field

Equipment not requiring a transformer sac

PCB free (<2ppm PCB, white label, or manufactured in 1986 or newer) overhead transformers in good condition should not be placed in a transformer sac. Package these as follows:

1. Place on white absorbent pads
2. Secure to truck prior to transport
3. Strap to pallet, on top white absorbent pads, at the district office



What must go in transformer sac

- i. All overhead units potentially containing ≥ 2 ppm PCB

Confirmed by analysis or unknown and older than 1986

≤ 50 KVA OH CAT ID: 97006266

≥ 75 KVA OH CAT ID: 96022726

- ii. All underground transformers (e.g. LPTs and PMTs)

LPT CAT ID: 96022725

PMT CAT ID: 97001688



- iii. All previously leaking and/or damaged transformers (regardless of PCB content)



Containment and spill trays

Actively leaking equipment must not be transported. Two options:

1. Drain completely and package
2. Or, fully seal, stopping leak, package in sac and preferably place in spill tray

Small: 97000579
Medium: 97000580
Large: 97000581

If assistance is needed with draining, contact the Spill Response Contractor: 1 866 997 7455



Packaging and loading

Place white absorbent pad between packaged transformer and pallet. Secure straps and excess material, preventing overhang



Remove sharp wires and/or cover sharp surface with absorbents & tape to prevent tears



Packaged PMT & LPT transformers are to be labelled with Heavy Side



Transformer Sac Required:
 Overhead TX (≥ 2ppm PCB, Damaged and/or previously leaking)
 ALL Underground TX
DO NOT Transport Actively Leaking Equipment

Work/Trouble Order#: _____ Date removed from service: _____
 Pole ID (OH unit): _____ OR Nearest address: _____
 Equipment Serial #: _____ Equipment I/O: _____
 Drained: Yes No Damaged: Yes No

PCB Level	
PCB Concentration# _____ Oil Sampling Program Barcode #: _____ <small>*PCB level provided on work package drawings, where available and in SAM</small>	
<input type="checkbox"/> ≥50 ppm or Unknown older than 1986	<input type="checkbox"/> <50 ppm
ATTENTION CONTAINS / CONTIENT 50 mg/kg / 50 mg/kg OR MORE OF / OU PLUS DE PCBs / BPC DATE OF COMMENCEMENT OF STORAGE: DATE DE DÉBUT DE STOCKAGE: DAY MONTH YEAR	<input type="checkbox"/> White label <input type="checkbox"/> <50ppm by analysis <input type="checkbox"/> 1986 or newer PCB Label Not Required Report ALL spills to BCH Field Manager or Manager On Call <input type="checkbox"/> Take photo of nameplate, oil sampling barcode if present, and send details to BCH manager or Sup <input type="checkbox"/> Record Trouble #, Pole # and estimate of volume of oil spilled on Tx <input type="checkbox"/> Field Manager or crew to call Spill Response # to initiate cleanup

BC Hydro Power smart

Transformer sac label

To be completed in the field and then applied to the transformer sac.

CAT ID: 97003893

Return of equipment

All ≥ 50 ppm PCB and Unknown and older than 1986 must be returned to a BC Hydro facility to be placed in the secure Hazardous Waste Storage Facility within 24 hours.

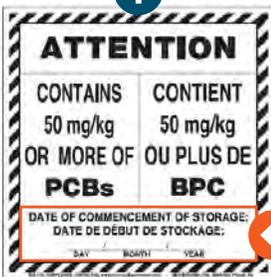
Determine PCB Concentration



Oil Sampling Program Barcode Label

- Planned work—Check the Design Drawing for PCB Levels
- PCB Results are available in **DAD/SAM**
- Distribution Oil Sampling Program Results
- Name plate
- White PCB Label

NOTE: Consider non-PCB if nameplate indicates “non-PCB oil” or if manufactured after 1986



Apply the PCB Label to transformer sac label when:

- ≥ 50 ppm
- Or Unknown and older than 1986

Do not fill in the Date of Commencement of Storage (this is done upon receipt at Investment Recovery)

CAT ID: 96011083 Available from Stores

Additional information

For additional support, contact your Environmental representative or Materials Management Environmental Technical Specialists:

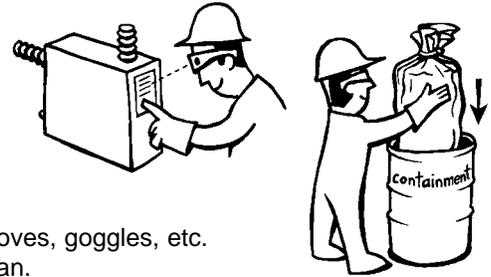
604 590 7535 (47535) 604 590 7571 (47571)

Environmental Field Guide #10

STATIONS – Capacitors and Excavations

Labeling Information

PCB capacitors in service are either labeled with serialized PCB labels or, if labels cannot be applied to the individual capacitors, a non-serial type label has been applied to the capacitor structure. Out of service or waste capacitors and spare capacitors are labeled with serialized labels.



Clean up of Failed Capacitors

- Wear appropriate personal protective equipment: disposable coveralls, gloves, goggles, etc.
- Determine if failed capacitor(s) contains PCB. Check label on capacitor can.
- Place failed capacitor can into a large plastic bag, tie off and place into steel barrel equipped with a lid that can be sealed.
- If necessary, swab equipment and metal supports with solvent soaked rags to remove sprayed PCB oil. Place waste rags into barrel.
- Collect stained soil, gravel and other waste (e.g. coveralls, gloves) and place in plastic lined barrel.
- Label all barrels with their contents and return to Store 12. Ensure that labels and waste manifests are in accordance with BC Special Waste and TDG Regulations (if applicable). Ensure that waste manifests accompany waste materials during transport.
Note: Do not transport soil from a BC Hydro site to any other location without checking with the Contract Administrator for written authorization (Soil Relocation Agreement)
- Check with the Contract Administrator regarding the need to test soil and gravel to determine if clean up meets requirements of Contaminated Soils Regulations for industrial sites.

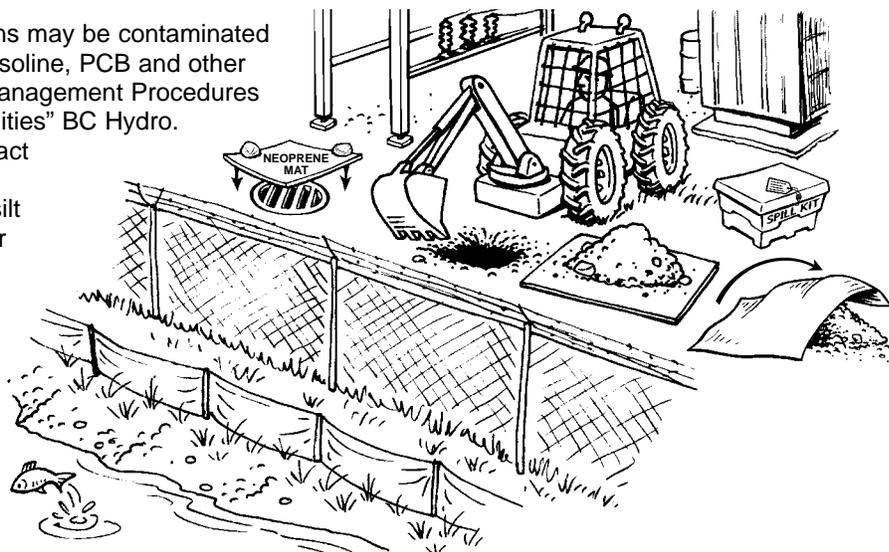


Leaks and Spills

- Develop and implement a response plan to deal with oil spills which may occur during the work.
- Place oil contaminated materials (e.g. sorbents) in plastic lined barrels for off site disposal through an approved licensed contractor or return to Store 12.
- Place leaking equipment into a large plastic bag, tie off and place into a steel barrel equipped with a lid that can be sealed.
- Place oil contaminated soils into a bioremediation pile or dispose of off site. For off site disposal use an approved licensed contractor and check that a written Soil Relocation Agreement is in place.

Excavations

- Soils within and adjacent to substations may be contaminated with insulating oil, solvents, diesel, gasoline, PCB and other substances. (Copy of "Generic Soil Management Procedures During Excavations at BC Hydro Facilities" BC Hydro. Dec. 1995 is available from the Contract Administrator)
- Install effective measures to prevent silt and other contaminants, such as oil or oil contaminated water, from leaving the site.
- Check to determine if other water-bodies (streams, ponds) are located nearby and plan or install effective protection measures to prevent their degradation. Measures may include silt fences, the covering of yard drains, covering excavated soils.

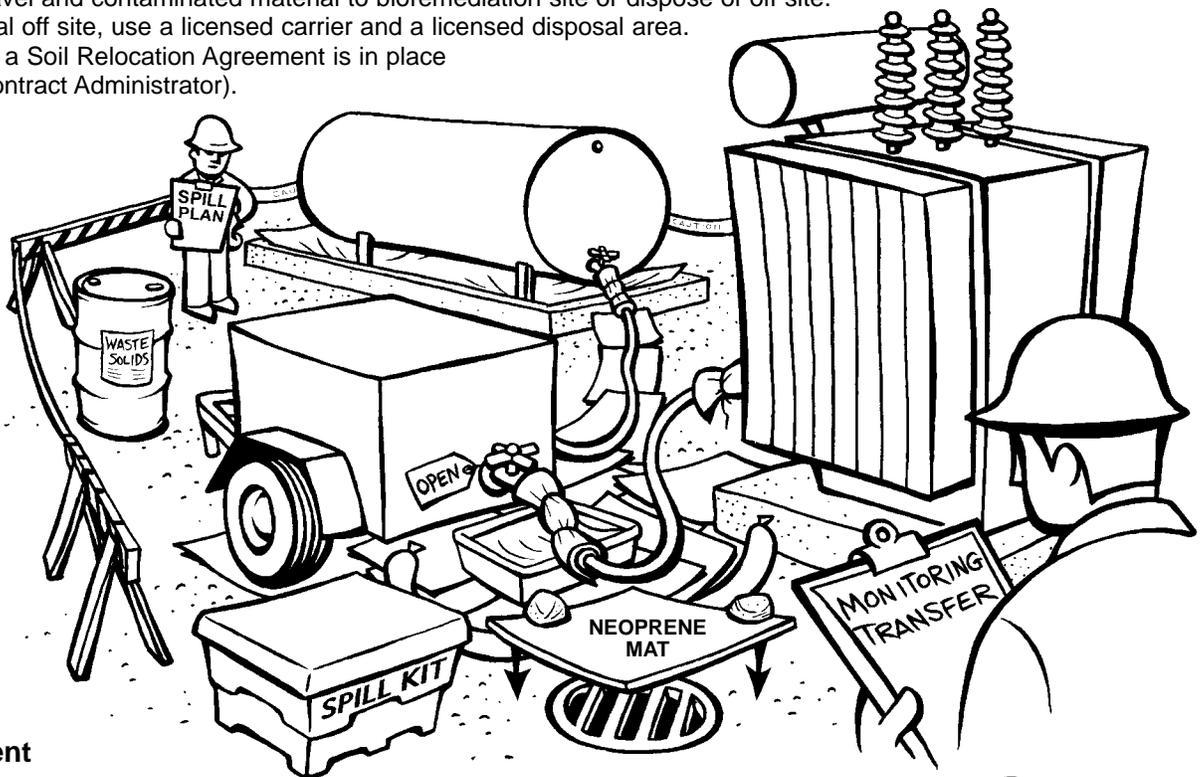
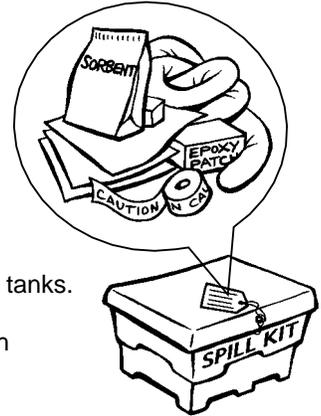


Environmental Field Guide #11

STATIONS – Oil Transfers and Treatment

Oil Transfers

- ❑ Locate Spill Kit. Ensure that it is fully stocked (check for wired tag or seal) and that materials present are adequate for the job.
- ❑ Review quantities of oil to be moved and ensure that volume of receiving tank(s) is sufficient to accept it all.
- ❑ Examine layout of the station and assess where oil could flow in the event of a major rupture and uncontrollable spill. Develop a spill contingency plan, including means of containment.
- ❑ If quantity of oil to be transferred is large (more than 2000L) and no permanent containment is in place, install temporary containment around transfer hoses and storage tanks. Containment should be able to contain 110% of the oil that could spill from the work.
- ❑ Use dripless hose connections. Wrap hose connections outside the containment area with sorbent pads.
- ❑ Cover yard drains with neoprene mats and seal edges with soil.
- ❑ Protect storage tanks, hoses etc. from vehicle traffic.
- ❑ Check all hoses and couplings and tanks to ensure that they are in good condition and not leaking.
- ❑ Label all valves as being either "Open" or "Closed".
- ❑ Monitor transfer and inspect hoses and connections.
- ❑ When work is complete, remove all tanks, hoses, etc. and clean up any spilled oil. Remove stained gravel and contaminated material to bioremediation site or dispose of off site. For disposal off site, use a licensed carrier and a licensed disposal area. Check that a Soil Relocation Agreement is in place (consult Contract Administrator).



Oil Treatment

- ❑ Regularly inspect the condition of equipment involved in the treatment, including hoses, couplings and filter press.
- ❑ If an alarm system is present, test it at the start and at regular intervals throughout the treatment period.
- ❑ When work is complete, remove all tanks, hoses etc. and clean up any spilled oil. Remove stained gravel and contaminated material to bioremediation site or dispose of off site. For disposal off site, use a licensed carrier and a licensed disposal area. Check that a Soil Relocation Agreement is in place (consult Contract Administrator).

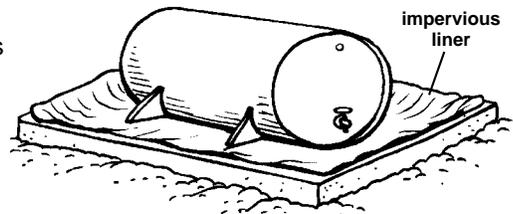
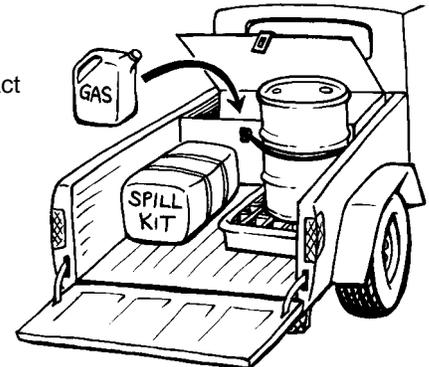


Environmental Field Guide #12

OILS & FUELS – Transportation, Storage, Use

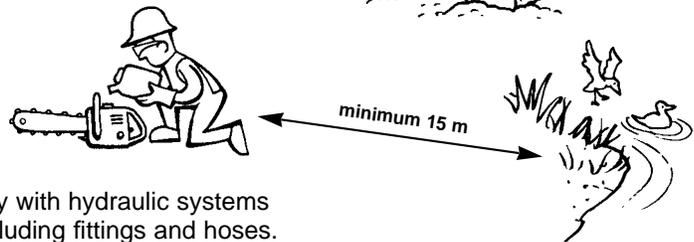
Transportation

- ❑ Transport and manage fuels, lubricants and other petroleum-based products in accordance with regulations of the Federal Transportation of Dangerous Goods Act (TDG) and BC Waste Management Act.
- ❑ Ensure that persons preparing materials for shipping (preparing waste manifest/shipping documents), transporting and receiving goods are properly trained and have valid TDG certification.
- ❑ Store large quantities of fuel (more than 2000L) and lubricants in dedicated, waterproof facilities designed to contain 110% of the volume of the largest tank. Locate such facilities as far away as practical from waterbodies and wetlands.
- ❑ Fuels and lubricants must be transported in containers that are labeled according to TDG requirements and designed for that purpose.
- ❑ Containers must be in good condition, must not leak and must be sealed with a proper fitting cap or lid.
- ❑ Transport containers 23 L (5 gallon) or less and equipment that contains fuels and lubricants (e.g. chainsaws) in the equipment box of vehicle. The box should be able to contain fuels and oils in the event of a spill.
- ❑ Transport containers greater than 23 L (5 gallon), including 205 L (45 gallon) drums, upright and secured to prevent shifting and toppling.



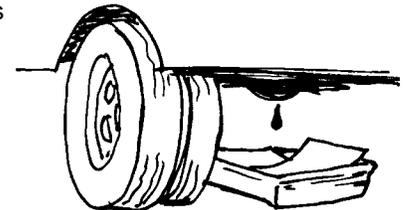
Refueling in the Field

- ❑ Refuel equipment and fill small portable containers a minimum of 15 m from waterbodies or wetlands.



Large Equipment

- ❑ Check daily that trucks, backhoes and other machinery with hydraulic systems are free of leaks and in good mechanical condition including fittings and hoses.
- ❑ Install drip trays with sorbent pads under drill rigs and any other equipment that work from a stationary position. Inspect, clean out and replace sorbent pads regularly.
- ❑ Spill Kits, approved by BC Hydro, are required on all line trucks and are recommended for other heavy vehicles and trucks.



Spill Response

In the event of a spill, follow established spill response procedures:

- ❑ **Ensure Safety** - to employees, public; use protective equipment; consult MSDS sheets.
- ❑ **Stop the Flow** - act quickly; close valves; plug leaks.
- ❑ **Secure the Area** - limit access; move non-essential people; eliminate ignition sources; test PCB content.
- ❑ **Contain the Spill** - block drains; prevent oil entering waterways; use Spill Kit sorbents, earth, sod.
- ❑ **Notify/Report** - notify PEP if quantities exceed threshold (check BC Hydro information sheet or contact the Contract Administrator). Notify contract administrator/supervisor as soon as possible. Complete spill report and submit to Contract Administrator.
- ❑ **Clean Up** - place clean up material in leak proof, sealed, labeled containers; protect from weather; store in secure location.



Approved work practices for riparian vegetation management (AWPRV)

Is it a stream?

No

It's not a stream.

AWPRV does not apply, however there may be other environmental instructions. Refer to contract.

Yes

It is a stream.

AWPRV applies.

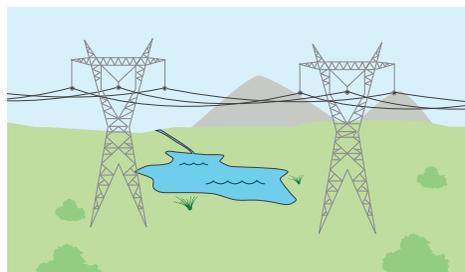
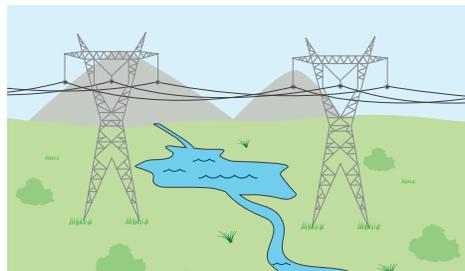
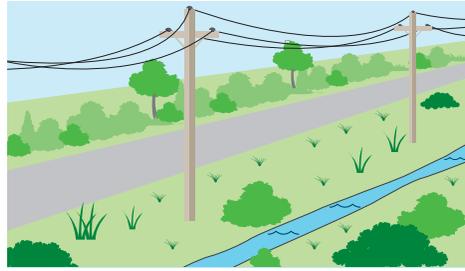
Refer to:

- Appropriate contract sections
- Maps
- Specific work instructions for that watercourse
- If no site-specific instructions are given—stop and call your BC Hydro Vegetation Coordinator

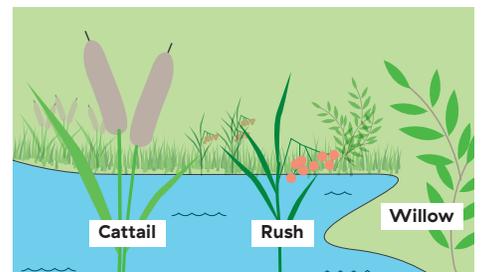
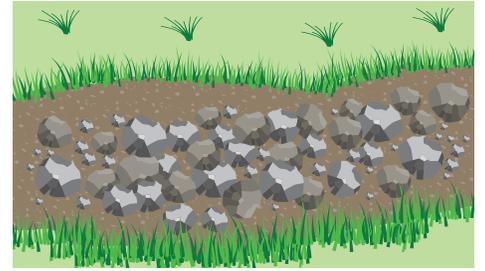
Check for flagging, as per pre-job.

Did you check the mapping?

1. Do you see a continuous channel?



2. Do you see signs of past water travel?



Riparian vegetation management area (RVMA)

This is the area where the AWPRV applies. The priority is to maintain as much vegetation in this area as possible.

- How much vegetation needs to be cut? Refer to treatments section for guidance.

Riparian flagging **should**:

- Be visible. From any flag, you should be able to see the next flag
- Be shoulder height or above
- Be parallel to watercourse
- Be 15m (50 ft) from top of bank; or
- Be 15m (50 ft) from top of ravine/gully

Things to watch out for:

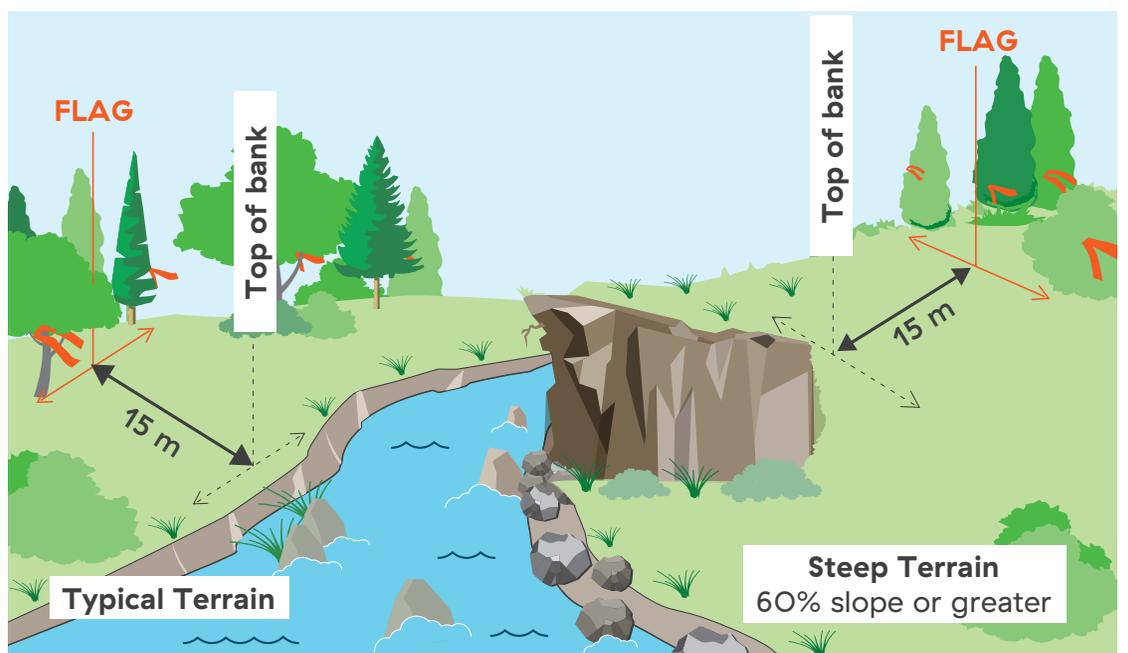
- More than one type/method of flagging:
 - Riparian
 - Highways
 - Row edge
 - Forestry
 - Pesticide, etc.
 - Other utilities
- Flagging too close to watercourse (less than 15m)
- Flagging on trees to be removed

Streams are:

Wet or dry—
makes no difference

Contain fish or not—
makes no difference

Large or tiny—
makes no difference



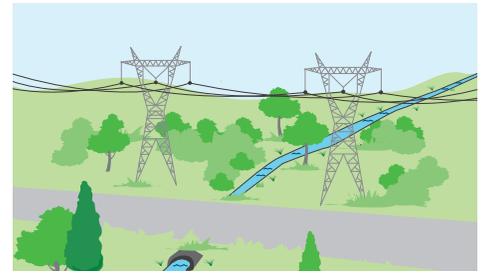
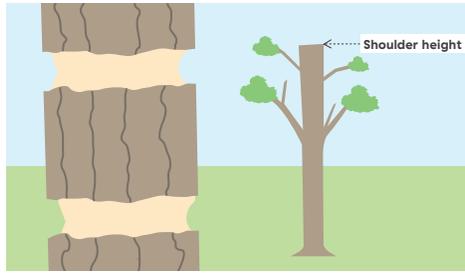
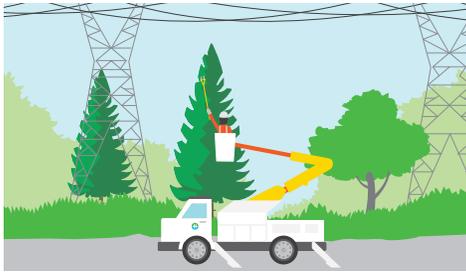
Treatments—focus on targets

Targets

Vegetation that will grow into the lines (Limits of Approach).

Non-targets

Vegetation that will not grow into the lines (Limits of Approach) before the next cutting cycle, e.g. shrubs and saplings.



More than 1/3 needs removal

- Special protocols and procedures apply
- Contact your local Vegetation Coordinator for special written permission

Pruning

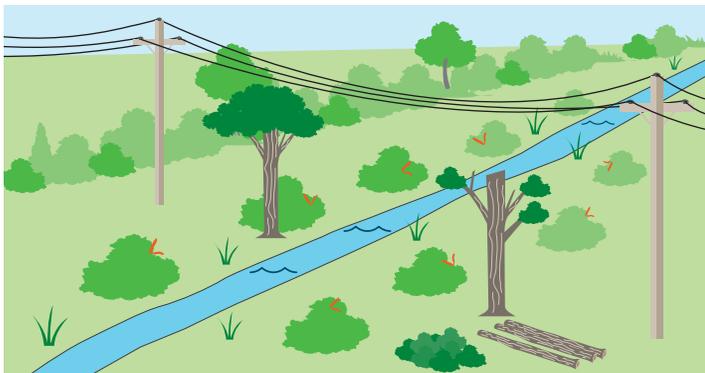
- Directionally prune targets where practical
- Focus growth away from the lines
- Ensure debris does not enter a stream

Additional treatments

- Management techniques for remainder:
 - girdling (up to 1/3)
 - tall slash (unlimited)
 - topping (unlimited)
 - pruning (unlimited)
- Refer to contract instructions

1/3 cover removal

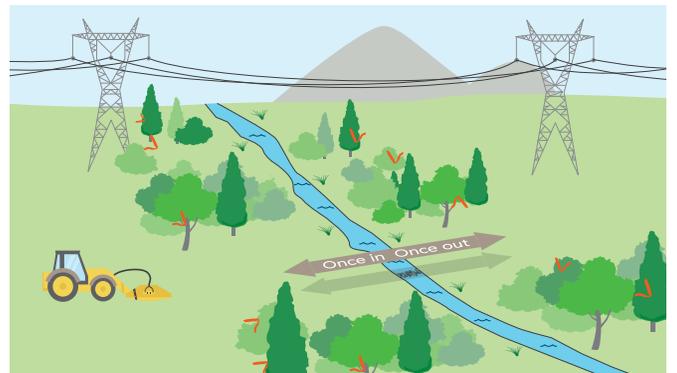
- Cut 1/3 (per general instruction)
- Focus on the fastest growing targets
- Focus on targets below and closest to the lines that may grow into the limits of approach
- Don't remove any targets over 15 cm diameter breast height (DBH) unless they are on your task listing (distribution only)
- Refer to contract instructions



Brushing

Identify the RVMA to limit disturbance. Look for flags before you begin:

- Flagging must be completed before brushing begins
- Keep debris above high water mark
- Focus on targets
- Protect shrubs
- Use biodegradable oil
- Refuel outside the RVMA or at least 15 metres from top of bank
- Keep some shade trees within 5 metres of top of bank to protect the stream
- Concentrate removals under conductors and don't smother brush with debris
- Don't disturb the stream bank
- Fall trees away from the stream
- Don't fall trees into the stream without specific approval from the BC Hydro Vegetation Coordinator



Mowing

Identify the RVMA to limit disturbance. Look for flags before you begin:

- Flagging must be completed before mowing begins
- Stop mowing at the flagging
- Flagging **MUST** be visible to the mower, if not contact BC Hydro Vegetation Coordinator
- Look for road crossings and use where possible

Fording should occur only if the contract allows, or with EFO instructions, and if the stream crossing:

- Is shallow with non eroding banks
- Is not through sensitive habitat (i.e. fish spawning)
- Has a hard bottom
- Has no mowing through the RVMA
- Is once in and once out per vehicle

Refer to the **Approved Work Practices for Water Crossings (AWPWC)** for additional information.

Use riparian instruction and environmental contract specifications

- If in doubt, do not work in the riparian area
- If in doubt, contact BC Hydro Vegetation Coordinator, or BC Hydro Vegetation Specialist

For Additional Information

- Environment Hydroweb, Working in and Around Water: http://hw/our_bus/deputy_ceo/env/tools/Pages/water.aspx
- Approved Work Practices for Managing Riparian Vegetation: <http://w3ecm/safety/ViewByDocument.do?guid=%7b2B76A081-72A3-4A77-8B2D-F82B2CCA2E29%7d>

Your local EFO contact: _____

Your local Vegetation Coordinator: _____

EXCAVATIONS

Worksite Preparation

Technologist/Contract Administrator:

- Prior to starting work, in consultation with Regional Environmental Coordinator, (1) review applicable fisheries, wildlife, SARA, archaeological, and contaminated soil risks, and (2) ensure that all required regulatory permits, notifications and approvals are in place. Keep a copy of any notifications and/or approvals on site.

Crew:

- Check trees and groundcover vegetation that will be disturbed for presence of bird nests. If found, STOP work and immediately contact Technologist/Contract Administrator.
- Keep vegetation clearing and ground disturbance to a minimum.
- Manage worksite drainage using silt fences, interceptor ditches, check dams, or other containment methods as appropriate. Divert external water from entering the site and prevent silt laden runoff from leaving the site.



Excavation

Crew:

- Minimize vegetation trimming and removal, particularly roots of large trees (for advice, contract Contract Administrator or BC Hydro Arborist).
- Remove and segregate topsoil from subsurface fill for later restoration.
- Segregate any soils contaminated by odour, visible staining, or debris in a designated pile or place directly into a dump truck. Follow Storage and Labelling instructions in Civil Environmental Field Guide #2 Handling Contaminated Soil.
- Place excavated soils >15m from water, unless otherwise advised by Regional Environmental Coordinator.
- Protect excavated soils from rain and wind – cover with a plastic tarp or other impervious material anchored in place. Cover work surface with plywood if soils are unstable or erodible.
- If artifacts (e.g. tools, bones, shells) are found during the work, STOP work immediately and contact Technologist/Contract Administrator.
- Check drainage controls regularly to ensure runoff from adjacent land is being diverted away from the site, and that silt laden runoff is prevented from leaving the site.
- Allow only clear water to be discharged – ensure discharge is not contaminated by odour or sheen. Pump all contaminated water to a vacuum truck for off-site disposal. Consult Technologist/Contract Administrator for an authorized means of disposal.
- Pump silt laden water from the excavation to a vacuum truck for off site disposal (preferable), or pump in or near the work site only under the following conditions: (1) to a well-vegetated area at least 30m from a waterbody or wetland, (2) to land where the water will infiltrate into the ground, and (3) using a diffuser made of a rock pile, sheet of plastic, or plywood to prevent discharge from causing soil erosion.
- Do not discharge water (clear or silt laden) to a sanitary sewer, storm sewer, creek, ditch, stream or riparian area. Do not discharge water to private property without the owner's prior approval.



EXCAVATIONS

Off-site Disposal

Crew:

- If soil is clean (not contaminated by odour, visible staining, or debris) it can be taken off site for use as fill at commercial or industrial sites.
 - Note: soil removed from BC Hydro property for rights-of-way may not be deposited in the Agricultural Land Reserve or in environmentally sensitive areas.
- If soil is contaminated by odour, visible staining, garbage or demolition debris, contact Technologist/Contract Administrator and follow instructions in Civil Environmental Field Guide #2 Handling Contaminated Soil.



Site Restoration

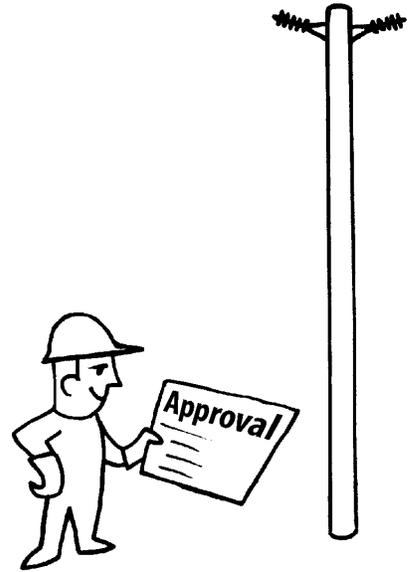
Crew:

- Do not backfill contaminated soil. If soil is contaminated by odour, visible staining, garbage or demolition debris, follow instructions for Off-site Disposal in Civil Environmental Field Guide #2 Handling Contaminated Soil.
- Ensure that soil not returned to the excavation is left in a stable, non-eroding condition consistent with surrounding land.
- Where appropriate, seed site with suitable reclamation seedmix (consult Technologist/Contract Administrator).

Environmental Field Guide #7

DISTRIBUTION MAINTENANCE – clearing for minor additions

- ❑ Check with Contract Administrator that all notifications and/or approvals for the work are in place and ensure copies are on site at all times. These may include notifications or approvals from:
 - landowner (private owner, First Nations, government agency) for access to work on the site.
 - regulator (Federal, Provincial environmental agencies) for work in/about a stream or other waterbody or work in an archeological site.
- ❑ Check with Contract Administrator for any special environmental requirements or precautions. For example, in riparian areas, check for culturally modified trees, bird nests, heritage trees, etc.
- ❑ Remove vegetation using approved arboricultural techniques. Consult Contract Administrator, Vegetation Management staff for advice.
- ❑ Dispose of vegetation debris as approved by the Contract Administrator.
- ❑ Minimize disturbance to ground surface and other non-target vegetation.



Erosion & Sediment Control



It is always better to limit disturbance than to be required to rehabilitate the site

Keep the disturbed area as small as possible



Ask the Question:

What will happen when it rains?

- Vegetation filters water and reduces erosion by slowing water flow
- Bare ground erodes quickly and results in muddy runoff



Erosion Control

Reducing Your Impact

- Keep the work site as small as possible
- It is better and costs less to limit disturbance than to be required to rehabilitate the site



Lowest Impact

- Hand dig
- Best choice in sensitive areas
- Minimize vegetation removal
- Prune or tie back



Medium Impact

- Reach in with an auger or use a vac-truck
- Good choice in sensitive areas



Highest Impact

- Use a backhoe only as a last choice
- Keep the work area as small as possible
- Implement erosion protection measures as required

Erosion Control

Spoil management, Seed, and Straw

- If spoil will be left, cover with poly-sheeting



1 STEP

- Move the spoil away from the sensitive areas
- Spread out and blend in
- Remove excess spoil from site



2 STEP

Seed and Straw

- "Sprinkle" seed to cover exposed soils
- Cover area with a thin layer of straw



Monitor and Remove

- Sites need to be checked after work is completed to ensure the site has been rehabilitated
- Silt fencing needs to be removed once vegetation is established



Sediment Control

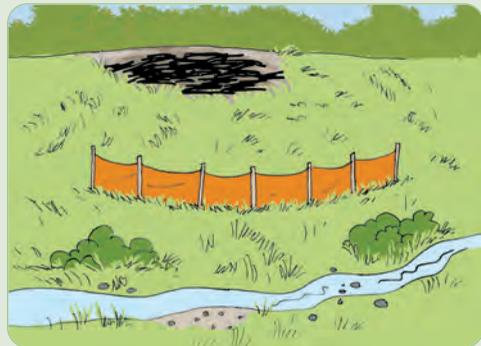
Silt Fence

When/Why use a silt fence?

- Install silt fencing to limit sediment going from the source (bare ground) to a sensitive area
- Never install across (dam) a watercourse

1
STEP

- Locate down slope to create a barrier between the sediment source and sensitive area



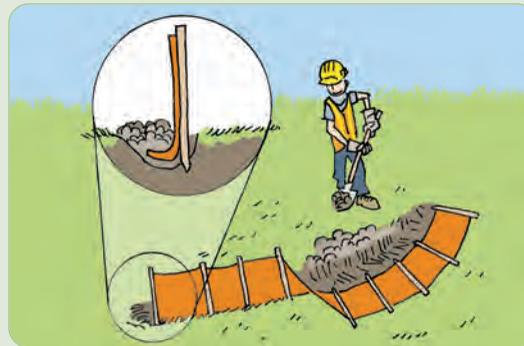
2
STEP

- Dig trench
- Layout fence



3
STEP

- Place "tail" of the fence in the trench facing uphill/towards disturbance
- Pound in stakes to the downhill/away side
- Bury "tail" with spoil



4
STEP

- Pack down spoil covering tail
- Seed the exposed soil



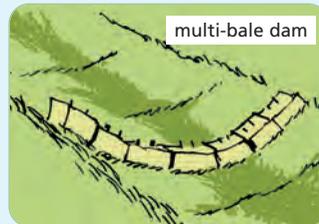
Straw Bale Check Dams

When/Why use a straw bale check dam?

- Install check dams to limit sediment flow

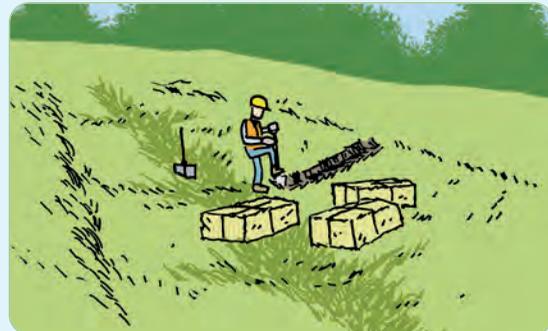
1
STEP

- How big will it be?
- Your site will dictate whether you need a 2, 3, or more bale dam



2
STEP

- Dig a shallow trench across the ditch and place bales in this trench



3
STEP

- Bales must rest firmly against the ground and adjacent bales
- 2 stakes per bale driven level



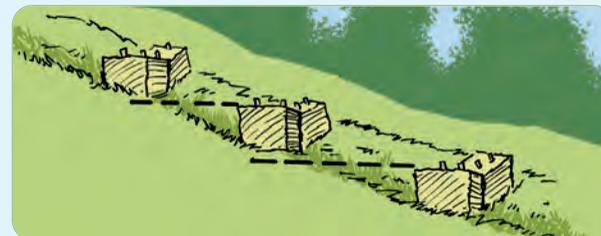
4
STEP

- The bottom of the dam MUST be lower than the ends
- Dam MUST be maintained



Spacing

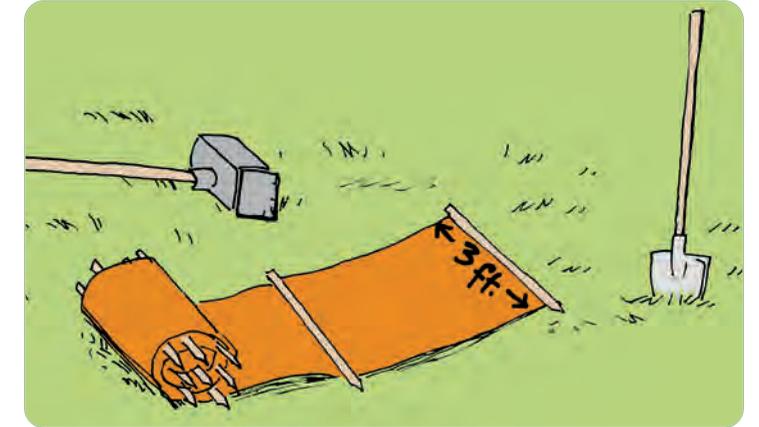
- Top of a lower dam is level with the bottom of the dam above



Materials and Contacts

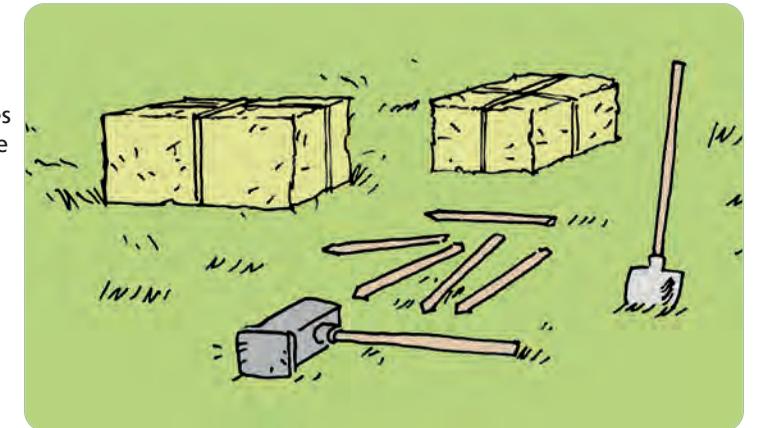
What you'll need to erect a silt fence

- Fencing
- Shovel
- Sledge hammer



What you'll need to erect a straw bale check dam

- Straw bales
- Shovel
- Sledge hammer
- 2" x 3ft wooden stakes
- 2 stakes per straw bale



Contacts

Regional Environmental Coordinators (REC's)

Vic Lewynsky (North/South Interior)	250-649-8657	Cell 250-309-0129
Bryan Hebden (Vancouver Island)	250-755-7166	Cell 250-616-8614
Kim Wilby (Lower Mainland/Fraser Valley)	604-543-4136	Cell 604-314-9198

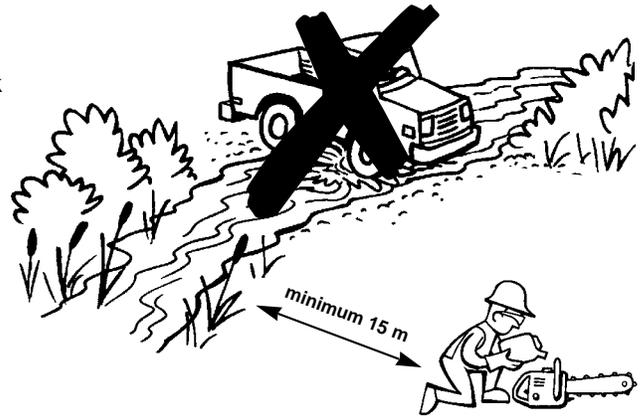
Technical Specialists

Andrew Walter (Fisheries Biologist)	604-528-1770	Cell 604-310-1770
Tyese Patton (Fisheries Biologist)	604-528-8351	Cell 604-219-9330
Wendy Kaiser (Technical Specialist)	604-528-7790	Cell 604-209-4652

Road Maintenance Field Guide #1

SITE ACCESS & GENERAL CONDITIONS - Page 1 of 2

- ❑ Conduct a pre-work meeting with local Road Coordinator, contractors and operators to review planned work, road maintenance field guides and site plans. Keep field guides and site plans with operators at all times.
- ❑ Check with the Road Coordinator or Contract Administrator that approval to travel to the site has been obtained from private landowners, public agencies, and First Nations (if applicable).
- ❑ Work involving maintenance and repair of water crossing structures over streams, rivers or watercourses (whether they are dry or wet) requires regulatory agency notification and possibly approval. Do not start work without written assurance that notification or approval is in place. Comply with all requirements outlined in the workplan and field guides unless otherwise instructed by the Contract Administrator.
- ❑ Verify the road access to the work site is safe. All bridges and major culverts (over 2 metre diameter) are required to have load ratings posted by the land owner, licensee or governing agency. Check to make sure that the route to the work site is intact (unaffected by landslides, snow avalanches, or large muddy areas). Contact the Contract Administrator if you have any doubts about safety.
- ❑ Make sure all required tools and supplies are on-site prior to commencement of work (including safety supplies and fire tools).
- ❑ Maintain a record of notifications and approvals and keep a copy at the worksite. Write specific comments on the plan if necessary to record site conditions and work done if it was different than shown on the plan.
- ❑ Do not develop access across, or drive through, any natural watercourse or wetland (even if dry) without consulting with Contract Administrator (or environmental support staff).
- ❑ Do not disturb natural wildlife habitat such as beaver dams, eagle nests, heron rookeries, marbled murrelet nests, hawk nests, owl nests, bear dens, marmot dens, wildlife trees etc. If encountered, stop work immediately and contact environmental support staff.
- ❑ Protect streams, ponds, ditches, and other waterbodies from sediment, oil, fuel, chemicals etc. Refuel equipment (including power saws) more than 15m from waterbodies. Use erosion and sediment control techniques, to prevent sediment from entering waterbodies (**See FG#14**).
- ❑ Keep spill response kits on site with each machine. Follow requirements of Waste Management Act for transport and disposal of waste materials.
- ❑ Minimize disruption to private property owners, others living nearby and users of the area. Limit noise, control dust and allow other vehicles to pass when practical. Maintain a clean worksite.
- ❑ Clean vehicle when leaving an area infested with noxious weeds, such as knapweed or scotch broom.

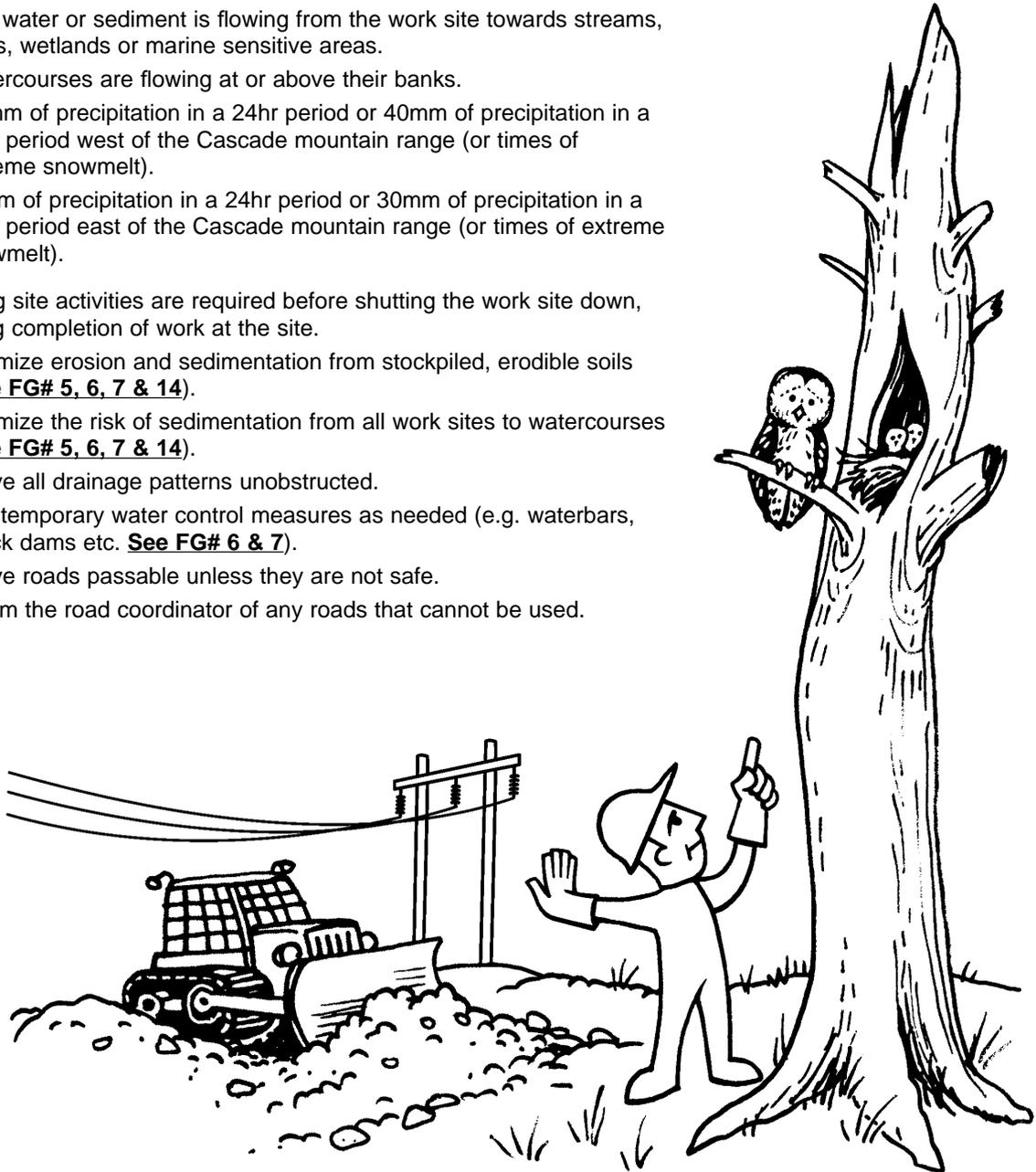


FG# 1 Site Access/Conditions	FG# 2 Valley Roads	FG# 3 Hillslope Roads	FG# 4 Access Tracks	FG# 5 Culverts	FG# 6 Cross Ditches, Etc.	FG# 7 Ditching	FG# 8 Instopping & Outstopping
FG# 9 Subdrains & Seepage	FG# 10 Grading	FG# 11 Road Surfacing	FG# 12 Road Stability & Spoil	FG# 13 New Road Development	FG# 14 Erosion & Sediment	FG# 15 Revegetation	FG# 16 When To Ask For Help

Road Maintenance Field Guide #1

SITE ACCESS & GENERAL CONDITIONS - Page 2 of 2

- ❑ Roads and forest sites undergoing seasonal break-up should not have road construction or maintenance activities performed on them. Reschedule activities or use other types of equipment or methods of access.
- ❑ Shut down road construction and maintenance activities if the following conditions are observed:
 - (i) Soils are soft and visibly muddy.
 - (ii) Soils flow and move when excavated.
 - (iii) Rilling occurs on exposed soils.
 - (iv) Sedimentation into ditches occurs or cannot be stopped.
 - (v) Silty water or sediment is flowing from the work site towards streams, lakes, wetlands or marine sensitive areas.
 - (vi) Watercourses are flowing at or above their banks.
 - (vii) 75 mm of precipitation in a 24hr period or 40mm of precipitation in a 12hr period west of the Cascade mountain range (or times of extreme snowmelt).
 - (viii) 50mm of precipitation in a 24hr period or 30mm of precipitation in a 12hr period east of the Cascade mountain range (or times of extreme snowmelt).
- ❑ The following site activities are required before shutting the work site down, and following completion of work at the site.
 - (i) Minimize erosion and sedimentation from stockpiled, erodible soils (**See FG# 5, 6, 7 & 14**).
 - (ii) Minimize the risk of sedimentation from all work sites to watercourses (**See FG# 5, 6, 7 & 14**).
 - (iii) Leave all drainage patterns unobstructed.
 - (iv) Add temporary water control measures as needed (e.g. waterbars, check dams etc. **See FG# 6 & 7**).
 - (v) Leave roads passable unless they are not safe.
 - (vi) Inform the road coordinator of any roads that cannot be used.



FG# 1 Site Access/Conditions	FG# 2 Valley Roads	FG# 3 Hillslope Roads	FG# 4 Access Tracks	FG# 5 Culverts	FG# 6 Cross Ditches, Etc.	FG# 7 Ditching	FG# 8 Insloping & Outsloping
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Road Maintenance Field Guide #14

EROSION AND SEDIMENT - Page 1 of 2

Purpose and Definition

The control of erosion and sedimentation is important to protect water quality and fish habitat. Sedimentation can kill fish, destroy fish habitat, and interfere with the chlorination process for purifying drinking water. Erosion and sediment control are standard activities for all road maintenance and construction work.

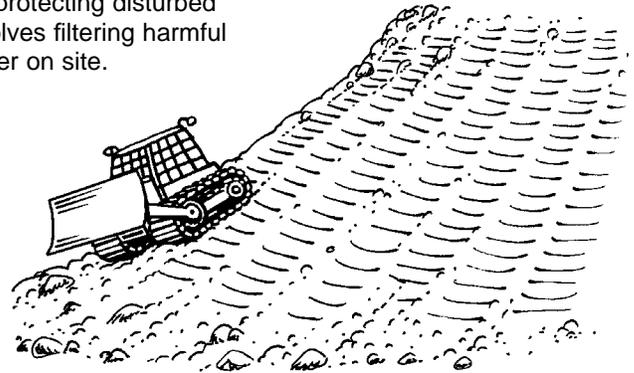
Methods and tools used to control erosion and sedimentation are listed below. Controlling erosion involves minimizing ground disturbance and protecting disturbed soil areas from rain and running water. Controlling sediment involves filtering harmful sediment out of the flow of dirty water or containing the dirty water on site.

Erosion Control

- Cat tracking
- Erosion mats
- Loose straw
- Tarps and coverings
- Grass seed
- Bioengineering
- Rock armour
- Temporary diversion of water from work site

Sediment Control

- Work site isolation
- Pumping & diverting
- Silt fence
- Catchment basin
- Straw bales
- Non-woven geotextiles



cat tracking

Erosion Control Techniques

Cat tracking: Groove the slope using tracked equipment to create a series of ridges and depressions that run across the slope and along the contour (drive up and down the fall line).

Erosion mats: Protective mulch blankets or turf reinforcement mats used to temporarily stabilize and protect disturbed soils. Install to manufacturers instructions and recommendations.

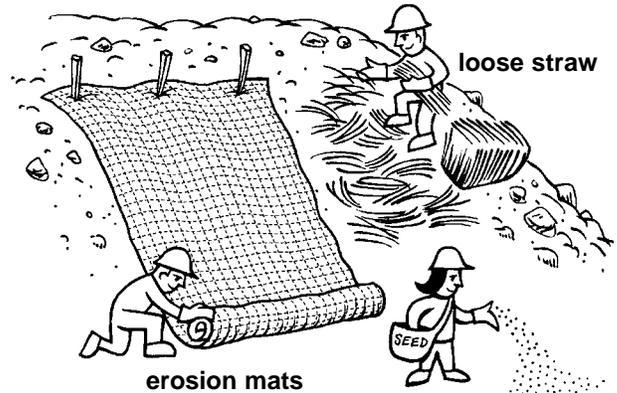
Loose straw: Used to temporarily protect exposed soils until vegetation is established. Break straw bales into flakes, pull apart flakes and scatter over exposed soils. Applying loose straw is a more cost effective alternative to erosion mats but does not stabilize the slope surface.

Tarps and coverings: Temporary cover to protect exposed soils. All coverings should be removed, re-used or re-cycled after use.

Grass seed: Grass seeding of exposed soils is required during all maintenance and construction activities to provide short and long term erosion and sediment control. For further information see **Field Guide #15**, Revegetation.

Bioengineering: Provides additional stability and soil retention to maintained roads, deactivated roads, landslide scars, stream banks or riparian zones with live hardwood cuttings. Consider using where grass seed will not adhere to steeper slopes or raveling occurs.

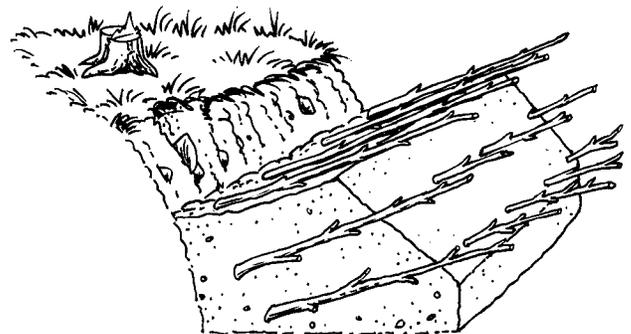
Rock armour: Angular rock placed to form a barrier between flowing water and erodible soils. Rock should be large enough to resist movement under anticipated flows. Ask the Contract Administrator for help in determining the appropriate size of rock armour to use.



erosion mats

loose straw

revegetation



bioengineering example

FG# 1 Site Access/Conditions	FG# 2 Valley Roads	FG# 3 Hillslope Roads	FG# 4 Access Tracks	FG# 5 Culverts	FG# 6 Cross Ditches, Etc.	FG# 7 Ditching	FG# 8 Insloping & Outsloping
FG# 9 Subdrains & Seepage	FG# 10 Grading	FG# 11 Road Surfacing	FG# 12 Road Stability & Spoil	FG# 13 New Road Development	FG# 14 Erosion & Sediment	FG# 15 Revegetation	FG# 16 When To Ask For Help

Road Maintenance Field Guide #14

EROSION AND SEDIMENT - Page 2 of 2

Sediment Control Techniques

Work site Isolation: Isolate the work site from exposure to flowing water by installing cross ditches, waterbars (**FG# 6**) or catchment basins.

Pumping and Diverting Water: A work site isolation technique used to temporarily divert or remove water from the work site.

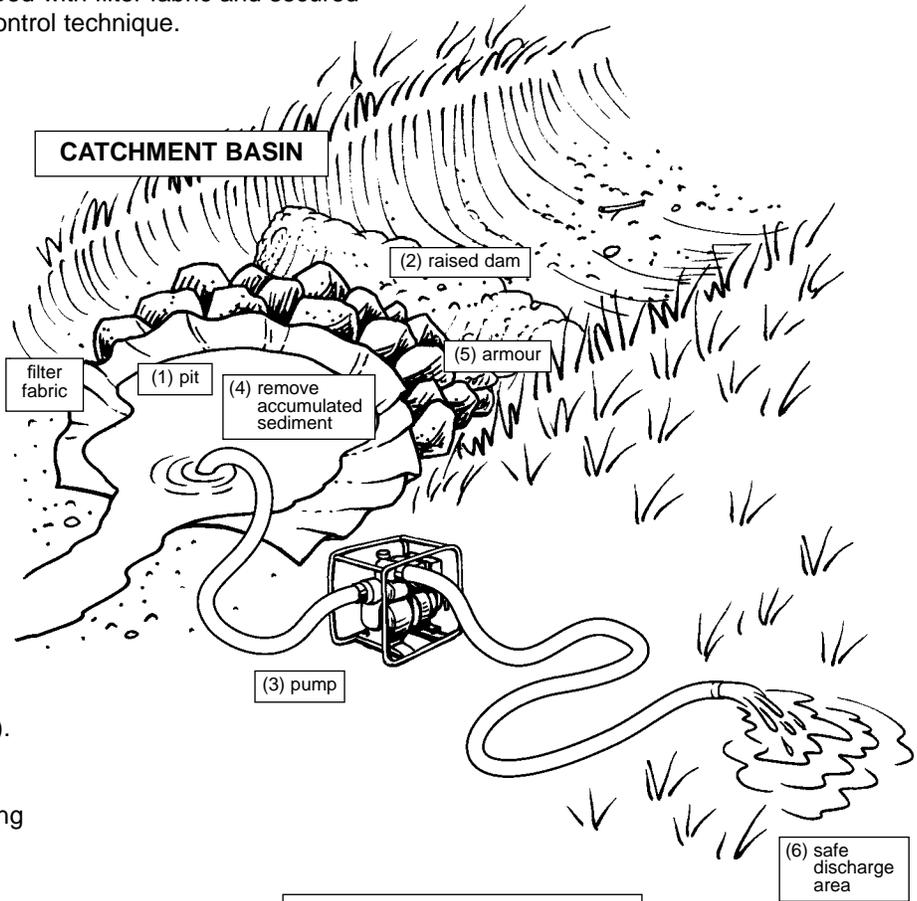
Silt Fence: A temporary sediment barrier consisting of filter fabric, attached to supporting posts and entrenched into the soil. Refer to manufacturer for installation instructions.

Catchment Basin: Catchment basins are built to temporarily contain sediment laden water to allow excess sediment to settle. They are frequently used to stop sediment in ditch water from entering a culvert or stream, or hold sediment laden water pumped from another site.

Straw Bales: Straw bales, when wrapped with filter fabric and secured are a versatile erosion and sediment control technique.

Components of a catchment basin include:

- (1) a pit or depression excavated with stable slopes,
- (2) a raised dam to stop the water from escaping, along with silt fence or filter fabric to stop sediment from escaping,
- (3) a pump to remove the sediment laden water before escaping,
- (4) cleaning of fine sands and some silts once deposited,
- (5) armour to prevent scouring at the outflow area and
- (6) a safe, well vegetated, discharge area away from streams, lakes or wetlands.



Important Points

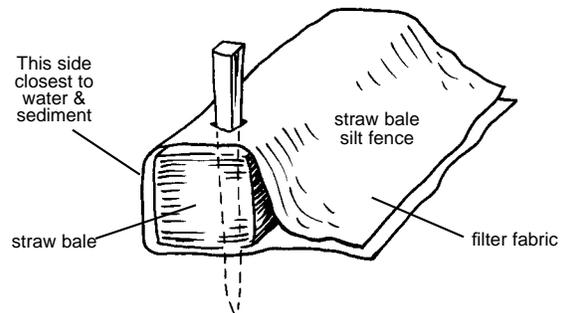
Do:

- Protect disturbed soils from eroding.
- Grass seed disturbed soils (**FG# 15**).
- Isolate work sites and route water away from wet work areas.
- Time work near sensitive areas during dry periods (**FG# 1**).

Don't:

- Don't only use one technique for erosion and sediment control.
- Don't leave erosion and sediment structures unattended, especially at times of high flows.
- Don't assume that areas are safe for discharging dirty water; walk downslope to check drainage patterns.
- Don't assume that erosion and sediment control will prevent landslides. Use other techniques and ask for help (**FG# 16**).
- Don't pump from natural watercourses or ditches that are suspected to contain fish.

STRAW BALE CHECK DAM



FG# 1 Site Access/Conditions	FG# 2 Valley Roads	FG# 3 Hillslope Roads	FG# 4 Access Tracks	FG# 5 Culverts	FG# 6 Cross Ditches, Etc.	FG# 7 Ditching	FG# 8 In sloping & Out sloping
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Road Maintenance Field Guide #15

SITE REVEGETATION

Purpose and Definition

The purpose of site revegetation is to reduce long term erosion and mitigate disturbance from road construction and maintenance operations. Site revegetation includes grass seeding, bioengineering and tree planting.

Grass Seeding

Hand seeding is the most common and cost effective method of grass seeding as it can be done by anyone concurrent with construction and maintenance operations. Hand grass seeding can be done with planting bags or shoulder mounted, hand crank spreaders, which ensure even coverage and distribution. Hand grass seeding can also be assisted by using ATV's, pick-ups or skidders. See additional comments for other types of grass seeding.

Other Methods

Additional methods of site revegetation include tree planting and Bioengineering. Although bioengineering is a specialized treatment which requires experienced persons, recognizing the need for this treatment is important. Bioengineering or tree planting may be needed (1) on large exposed slopes, (2) at cat track sites or spoil areas, (3) on rock buttressed slopes, (4) at steep road fillslopes and cutslopes, (5) at disturbed riparian zones, (6) where large construction projects have caused extensive disturbance, or (7) where slopes are too steep to hold grass seed. Approval from the Contract Administrator is required for use of these methods (**FG# 16**).



Erosion and Sediment Control

- Cat tracking (**FG# 14**).
- Loose straw (**FG# 14**).
- Erosion mats (**FG# 14**).

Important Points

Do:

- Grass seed immediately after maintenance and construction and while soils are cool and wet.
- Use sod forming grasses under transmission lines to inhibit other plant growth.
- Use a minimum of 80 kg per hectare of grass seed (range 80 to 100) on access roads.
- Use a grass seed mixture that includes 30% bunch grasses on reclamation sites not under transmission lines to promote native plant germination.
- Use a minimum of 300kg/ha slow release fertilizer (18-18-18) along with grass seeding.
- Use a grass seed mixture suited for the time of year seeding occurs.

Don't:

- Don't grass seed before or during frost or freezing temperatures (unless using frost resistant seed like Fall Rye).
- Don't use fertilizers near streams or wetlands.
- Don't use grass seed and plants not approved by a vegetation specialist.
- Don't grass seed the road grade surface if it may cause the development of false ditches (FG# 10).

Additional Comments

- Remove and clean up all garbage and debris on site during site reclamation and while operations are on-going (**FG# 1**).
- If grass seed ravel on steeper or loose sandy slopes, consider hydro-seeding or bioengineering.
- Other methods of grass seeding include: truck mounted dry seeding, truck mounted hydro seeding, aerial dry seeding and aerial hydro seeding. These methods require assistance and approval from the Contract Administrator.
- Items frequently used to enhance revegetation include decompaction of soil and replacing woody debris and organics. Ask for help from the Contract Administrator before undertaking these techniques.

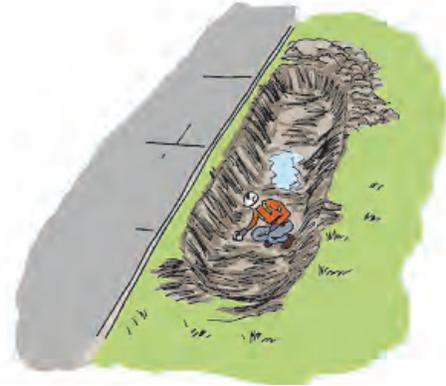
FG# 1 Site Access/Conditions	FG# 2 Valley Roads	FG# 3 Hillslope Roads	FG# 4 Access Tracks	FG# 5 Culverts	FG# 6 Cross Ditches, Etc.	FG# 7 Ditching	FG# 8 Insloping & Outsloping
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HANDLING CONTAMINATED SOIL

Worksite Preparation

Technologist/Contract Administrator:

- Prior to starting work, in consultation with Regional Environmental Coordinator, (1) review potential for contaminated soil, and (2) determine whether site-specific procedures are required.
- Decide in advance whether sampling will be done prior to excavation, during excavation, or on the excavated pile. Arrange for qualified personnel to sample and analyse all soils suspected of being contaminated (use Powertech Labs or other qualified lab).
- In consultation with Environmental Technical Specialist, use test results to characterize soils according to provincial and federal environmental standards.
 - Note: soil sampling and characterization usually takes at least 5 working days.
- For all soils to be transported off-site, in consultation with Regional Environmental Coordinator or Environmental Technical Specialist, determine an authorized receiving site.



Excavation

Crew:

- Stockpile excavated contaminated soil for future testing and off-site disposal, or transport contaminated soil directly from the excavation to a previously authorized receiving site.
- For further excavation instructions, including management of excavation water, see Civil Environmental Field Guide #1 Excavations.



Storage & Labelling

Crew:

- Store small quantities of contaminated soils in a steel drum. On each drum put a completed Waste Label with the site name, drum contents and date.
- Stockpile large quantities of soil not being transported off-site immediately in a designated area.
- To contain contamination and prevent contaminated stormwater runoff, place large quantities of contaminated soil on a plastic sheet and cover with another plastic sheet or other impervious material anchored in place.
- Minimize contaminated soil for disposal by keeping contaminated soils separate from other soils. Do not mix contaminated and non-contaminated soils.
- Inspect the stockpile regularly to ensure liner and cover are in place. Report any contaminated runoff to Technologist/Contract Administrator.



Off-site Disposal

Technologist/Contract Administrator:

- Contact Regional Environmental Coordinator or Environmental Technical Specialist for site-specific procedures.
- Dispose of contaminated soil only at a facility approved by Regional Environmental Coordinator or Environmental Technical Specialist.

Crew:

- Do not use potentially contaminated soil having any odour, visible staining or debris as backfill.



PLACING & FINISHING CONCRETE

Worksite Preparation

Technologist/Contract Administrator:

- Prior to starting work at generating stations, in consultation with Environment and Social Issues Manager, (1) review applicable fisheries and other environmental risks, and (2) determine whether site-specific procedures are required.

Placing Concrete

Crew:

- Do not place concrete in, or near a watercourse, or in a location where runoff may enter a watercourse.
- Do not allow water that has contacted partially cured concrete to enter any watercourse or storm drain until the pH is between 6.5 and 9.0.
- Isolate cast-in-place concrete from fish-bearing waters for a minimum of 72 hours.



Excess Concrete

Crew:

- Make sure the supplier pumps excess concrete in the pump back into the truck. Send excess concrete back with the supplier. If this is not possible, use it in a practical way for another application, e.g. curbing.
- Do not discharge any excess concrete at the worksite without prior approval of Technologist/Contract Administrator.
- Do not discharge any excess concrete to storm drains or to watercourses.



Washing Up

Crew:

- Suppliers are to wash chutes into a bucket and pour wash water back into the truck. If this is not possible, make sure the supplier collects wash water in a polyethylene lined box and allows it to harden. Once hardened, material is to be placed in a drum and transported to a landfill or concrete recycler.
- If any rinsing of trucks or equipment is done on site, make sure it takes place in the construction zone, on a flat area, over a gravel or vegetated surface a minimum of 30m away from surface drainage. Wash water may be drained into an excavated hole. Do not allow wash water to enter a waterway or storm sewer.

Forms and Other Wastes

Crew:

- Remove all forms and non-concrete waste from the site.
- Where possible, transport concrete demolition waste to a concrete recycler.

Concrete Spills

Crew:

- If concrete spills to ground, let it harden. Once hardened, break into rubble, load into a dumpster or truck and transport it to a landfill or concrete recycler.
- If concrete, runoff, or wash water enters a watercourse notify Technologist/Contract Administrator, Regional Environmental Coordinator, or Environmental and Social Issues Manager immediately.

PRESSURE WASHING FOR SURFACE PREPARATION

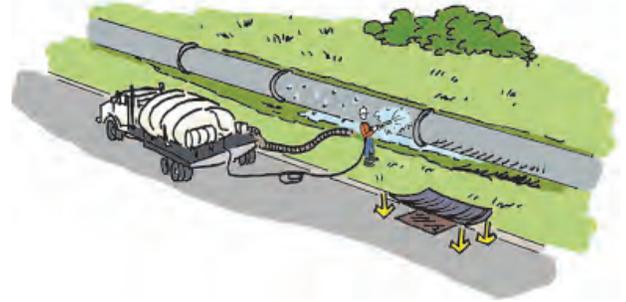
Worksite Preparation

Technologist/Contract Administrator:

- Prior to starting work, in consultation with Regional Environmental Coordinator or Environment and Social Issues Manager, (1) review applicable fisheries and other environmental risks, and (2) determine whether site-specific procedures are required.
- If a pre-existing coating is to be removed:
 - arrange for qualified personnel to sample and analyze the coating for metals (use Powertech Labs or other qualified lab)
 - in consultation with Environmental Technical Specialist, use test results to anticipate waste water classification and possible disposal requirements.

Crew:

- Install containment to trap and collect all wash water.
- Protect waterways from wash water runoff e.g. cover storm drains with neoprene mats.
- As required, create a wash water storage and treatment facility (e.g. evaporation pond and filter exchange).



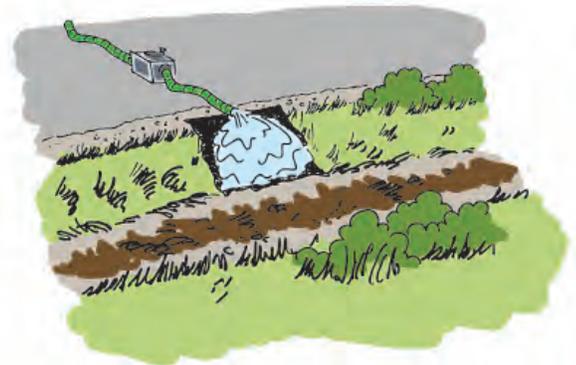
Water Treatment, Testing, Discharge and Disposal

Technologist/Contract Administrator:

- In consultation with Environmental Technical Specialist, determine a sampling regime to test treated wash water for metals and other appropriate parameters. Send samples to Powertech Labs or other lab.
- In consultation with Environmental Technical Specialist, review lab test results against applicable Ministry of Environment water standards and municipal requirements. Determine an appropriate discharge location or off-site disposal option.

Crew:

- Do not release any wash water prior to treatment and testing.
- Discharge treated water only when authorized by Technologist/Contract Administrator at an approved location. Discharge under the following conditions: (1) to a well-vegetated area at least 30m from a waterbody or wetland, (2) to land where the water will infiltrate into the ground, and (3) using a diffuser made of a rock pile, sheet of plastic, or plywood to prevent the discharge from causing soil erosion.
- Do not discharge water to a sanitary sewer, storm sewer, creek, ditch, stream or riparian area. Do not discharge water to private property without the owner's prior approval.
- Allow only clear water to be discharged – ensure discharge is not contaminated by odour or sheen. Pump all contaminated water to a vacuum truck for off-site disposal. Consult Contract Administrator for an authorized means of disposal.
- Monitor discharge to ensure infiltration capacity of soil is not exceeded.
- Report any unauthorized discharge to Technologist/Contract Administrator, Regional Environmental Coordinator, or Environment and Social Issues Manager immediately.



RESERVOIR DEBRIS COLLECTION & DISPOSAL

Collection on Water

Crew:

- Prior to boat launch, ensure bilge is clean and dry. Pump any bilge into a drum. Clean any oily surfaces with absorbent pads. Do not discharge bilge water into the reservoir. Dispose of oily bilge water and absorbent pads to Store 12.
- When fuelling boats, have a fully stocked spill kit nearby. Fuel power saws at least 15 m from shoreline. Report the release of any amount of fuel, oil or bilge to a waterway to Technologist/Contract Administrator, Regional Environmental Coordinator, or Environment and Social Issues Manager immediately. For more information on fuel management see Environmental Field Guide #12 Oils & Fuels.
- Pile debris on shore on BC Hydro property above high water line.
- If operating in the Coquitlam watershed ensure all personnel have attended the Metro Vancouver training course and hold a valid Green Card. Notify Metro Vancouver 24 hours in advance of operating in the reservoir. Prior to launching boats, bleach and rinse the boat hull to reduce possibility of introducing invasive species into the waterway. Ensure wash water does not enter the waterway.



Collection on Land

Technologist/Contract Administrator:

- Ensure fisheries sensitive zones, no machine zones, and no work sites are clearly understood by crews.
- Do not work in streams and/or riparian areas. As required, consult the BC Hydro vegetation specialist for site specific requirements.

Crew:

- Observe restrictions on fisheries sensitive zones, no machine zones, and no work sites.
- Do not work in streams, on stream banks, or on unstable slopes. Do not disturb debris in riparian areas.
- Minimize disturbance to existing and newly forming vegetation.
- Minimize ground disturbance and soil compaction. Operate machinery only on the debris line. Do not operate machinery in wetted areas. Do not remove embedded materials.
- Where applicable, broadcast seed disturbed areas with a native seed mix (consult Technologist/Contract Administrator).



Disposal by Salvage, Grinding or Landfill

Technologist/Contract Administrator:

- As appropriate, dispose of debris in one of the following ways:
 - Salvage merchantable timber by selling to a log broker or other buyer
 - Hire a grinding contractor and grind on site
 - Haul debris to landfill.
- In consultation with Environmental Specialist, (1) identify the applicable local land spreading or landfill requirements, and (2) ensure that any required regulatory permits or authorizations for land spreading or landfill at the provincial or municipal levels have been obtained.
- If the options above are not possible, follow instructions in Disposal By Burning.



RESERVOIR DEBRIS COLLECTION & DISPOSAL**Disposal by Burning***Technologist/Contract Administrator:*

- Prior to burning, in consultation with Environmental Specialist or Environment and Social Issues Manager, (1) identify the applicable local burning and ash disposal requirements, and (2) ensure that any required regulatory permits or authorizations for burning and/or ash disposal at the provincial or municipal levels have been obtained by the relevant parties.
- Note: there is a large degree of variability in burning and ash disposal requirements from one region or municipality to another.
- As appropriate, ensure requirements of the Open Burning Smoke Control Regulation are met with regards to duration of burn, timing of burn, and ventilation index.
- If possible, to minimize smoke, arrange for debris to be burned using a box burner/air curtain destructor.

*Crew:*

- If possible, locate the burn pile on exposed aggregates. Do not locate the burn pile near vegetation or inhabited areas.
- As required, obtain a burning permit or authorization from the Ministry of Forests, Ministry of Environment, or the relevant municipality.
- As required, before starting the burn, ensure the ventilation index requirements of the Open Burning Smoke Control Regulation are met.
- Do not burn tires, other rubber, treated wood, fuel or lubricant containers, other plastic, paint, or hazardous waste.
- Supervise fires at all times.
- Have adequate fire-fighting equipment and access to additional manpower as appropriate to the time of year.
- Dispose of ash by land spreading or follow other site specific procedures.

DRILLING

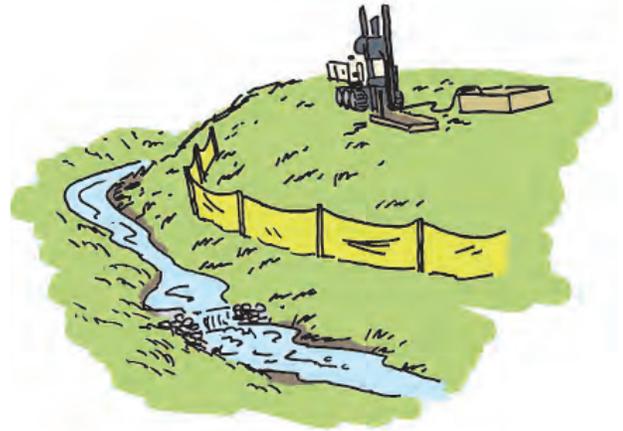
Worksite Preparation

Technologist/Contract Administrator:

- Prior to starting work, in consultation with Regional Environmental Coordinator or Environment and Social Issues Manager, (1) review applicable fisheries and other environmental and archaeological risks, and (2) ensure that all required regulatory permits, notifications and approvals are in place. Keep a copy of any notifications and/or approvals on site during work.
- Stipulate use of environmentally preferable drilling fluids.

Crew:

- When drilling near water, install filter curtains or other means of containment around work site and along shoreline to prevent cuttings from entering watercourse.
- If drilling will produce return water, have the discharge location approved by Technologist/Contract Administrator prior to discharge.
- If drilling will produce cuttings, plan to collect all cuttings.



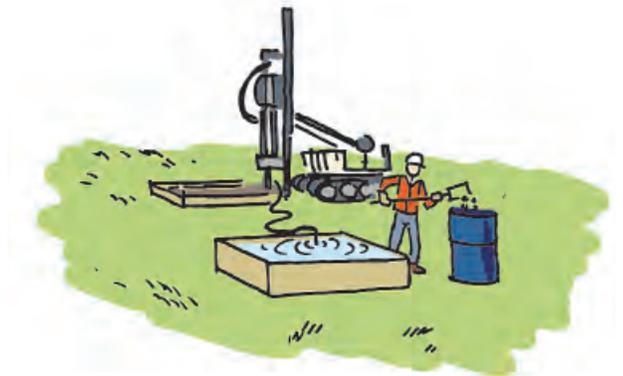
Return Water, Cuttings and Grout

Technologist/Contract Administrator:

- As appropriate, sample cuttings for pH, metals and other applicable parameters (use Powertech Labs or other lab). In consultation with Environmental Technical Specialist determine preferred disposal option.

Crew:

- If required, collect all return water and cuttings. Pump collected return water and cuttings to a holding tank to allow cuttings to settle out – do not allow cuttings or return water to enter watercourses.
- Once cuttings have settled out, discharge return water to a gravel surface or vegetated area approved by Technologist/Contract Administrator under the following conditions: (1) at least 30m from a waterbody or wetland, (2) to land where the water will infiltrate into the ground, and (3) using a diffuser made of a rock pile, sheet of plastic, or plywood to prevent the discharge from causing soil erosion.
- Do not discharge water to a sanitary sewer, storm sewer, creek, ditch, stream or riparian area. Do not discharge water to private property without the owner's prior approval.
- Allow only clear water to be discharged – ensure discharge is not contaminated by odour or sheen. Pump any contaminated water to a vacuum truck for off-site disposal. Consult Technologist/Contract Administrator or Environmental Technical Specialist for an authorized means of disposal.
- Suck cuttings out of holding tank using a vacuum truck or shovel cuttings into a drum or truck.
- Dispose of cuttings at a receiving site approved by Technologist/Contract Administrator.
- When grouting steel anchors, collect all excess grout using a vacuum truck. Dispose of excess grout with cuttings. Do not allow grout to enter watercourses.



Dust

Crew:

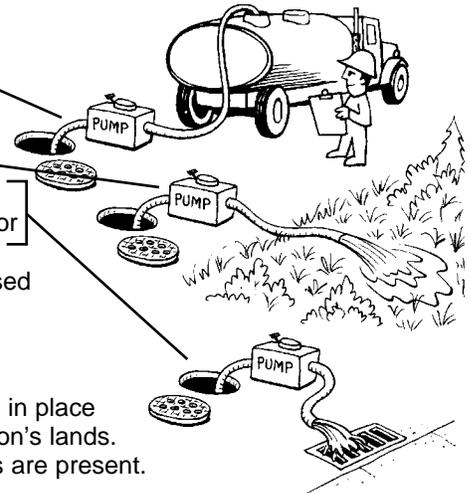
- When drilling with a tricone bit, downhole hammer, or pneumatic equipment, minimize dust using water. Do not use oil as a lubricant.

Environmental Field Guide #9

TRANSMISSION MAINTENANCE – Vaults, Excavations, Concrete Work, Site Restoration, Blasting

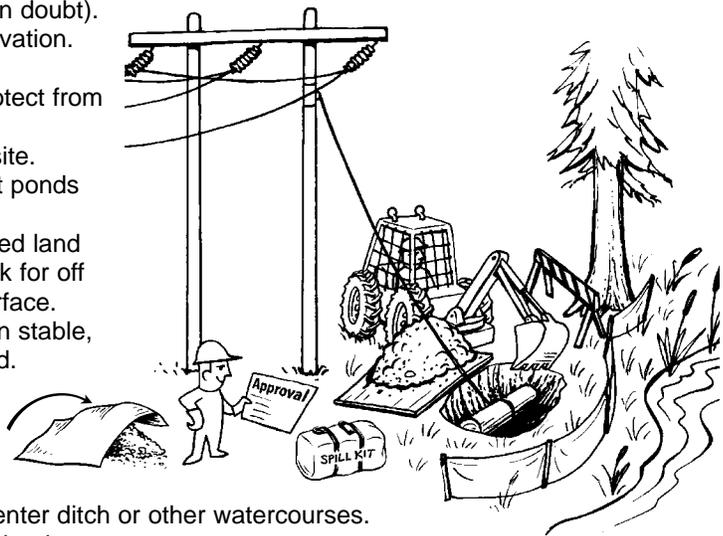
Vaults

- ❑ If vault water is discoloured or contaminated with oil/fuel, pump to a tanker for off site disposal. Check that both tanker and disposal site are licensed.
- ❑ If vault water is clear but is contaminated with silt, it may be pumped to vegetated land well removed from other drainages.
- ❑ If water is clear and not contaminated with oil/fuel or silt, it may be pumped to storm drain or sanitary sewer. If in doubt, check with Contract Administrator (Regional Environmental Coordinator or Fish Biologist).
- ❑ If vault contains freshly poured concrete, pump high pH wastewater to licensed tanker truck or to vegetated land well removed from other drainages.



Excavations

- ❑ Check with the Contract Administrator that notifications and/or approvals are in place for work in/about a stream, in parks, in ecological reserves and on First Nation's lands.
- ❑ BEFORE starting excavation, check to see that no other subsurface facilities are present.
- ❑ Minimize damage to trees or shrubs, particularly the roots of large trees (Consult Contract Administrator, BC Hydro Arborist if in doubt).
- ❑ Protect public and animals from falling into open excavation. Use construction barriers and/or cover.
- ❑ Place excavated soil away from watercourses and protect from eroding. For example, cover with tarp or plastic.
- ❑ Prevent runoff from adjacent land from entering worksite.
- ❑ Control runoff from the site using silt fences, sediment ponds or other containment methods.
- ❑ Pump silt laden water from excavation to well-vegetated land distant from other drainages or to licensed tanker truck for off site disposal. Do not pump to storm sewer or road surface.
- ❑ Ensure that soil not returned to the excavation is left in stable, non-eroding condition consistent with surrounding land. Seed with appropriate reclamation seedmix (consult Contract Administrator, Vegetation Biologist).



Concrete Work

- ❑ Ensure runoff from freshly poured concrete does not enter ditch or other watercourses.
- ❑ Concrete truck or mixer wash water must not be permitted to enter a watercourse. Dispose of it in a pit or an approved off site location.

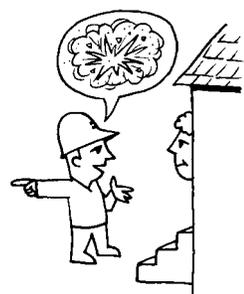
Site Restoration

- ❑ Contour back filled excavations to blend in with adjacent landscape. Seed with suitable reclamation seedmix (consult Contract Administrator, Vegetation Biologist).
- ❑ Site restoration could include revegetation, recontouring, erosion control matting, access deconstruction, water crossing deactivation.



Blasting

- ❑ Protect public, workers, animals and waterbodies from flying rock by suitably covering blast point.
- ❑ Advise local residents of timing and nature of proposed blasting.
- ❑ If blasting within 50m of a waterbody, check with the Contract Administrator. Allowable distances from waterbodies vary depending on soil and substrate type, presence of fish and fish habitat, and the size of the charge.



APPENDIX D

BC Hydro Waste Management Standards

Appendix D

Waste Management Standards

- WM-210: Hazardous Waste – General
- WM-220: Hazardous Waste Disposal
- WM-230: Hazardous Waste Registration
- WM-240: Hazardous Waste Storage
- WM-250: Hazardous Waste Testing
- WM-260: Hazardous Waste Transportation
- WM-460: Waste Rags and Sorbents
- WM-510: Ozone Depleting Substances and Other Halocarbons
- WM-450: Waste Oil
- WM-610: Solid Waste – General

Hazardous Waste – General

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1.0 Introduction

1.1 Scope

This standard provides general information on BC Hydro procedures for hazardous waste storage, registration, transportation and disposal. The requirements outlined in this standard apply to any hazardous wastes.

1.2 Background

Through its daily activities, BC Hydro generates various types of hazardous wastes that are classified and regulated as hazardous wastes in BC. Because of the risks hazardous wastes can pose to the environment and to human health, they must be handled and managed with special care. In BC, detailed requirements for managing and transporting hazardous wastes are prescribed in the BC *Environmental Management Act* and the accompanying *Hazardous Waste Regulation*, as well as in the federal *Transportation of Dangerous Goods Act and Regulations*.

1.3 Related Standards and Instructions

Detailed requirements for hazardous waste disposal, registration, storage, testing, sampling, and transportation can be found in:

- [WM-220 – Hazardous Waste Disposal](#)
- [WM-230 – Hazardous Waste Registration](#)
- [WM-240 – Hazardous Waste Storage](#)
- [WM-250 – Hazardous Waste Testing](#)
- [WM-260 – Hazardous Waste Transportation](#)

For more specific information on certain types of hazardous wastes, see if there is an [Environmental Best Management Practice \(EBMP\)](#).

Note: The *Waste Management Standards* are being replaced by *EBMPs*. *EBMPs* provide more information than *Waste Management Standards*, including information on how to handle materials before they are waste. However, reference to *Waste Management Standards* may be necessary until *EBMPs* are prepared for all materials that were covered by the standards.

See your Line of Business/Business Unit safety procedures for work instructions related to hazardous waste.

2.0 Hazardous Waste Information

2.1 Hazardous Waste Definition

Hazardous wastes are defined in the *Hazardous Waste Regulation* as:

- substances no longer used for their original purpose that meet any of the criteria for inclusion in Class 2, 3, 4, 5, 6, 8 or 9 of the *Transport of Dangerous Goods Regulations* (includes substances that are being or are intended to be recycled, treated or disposed of, or substances that have been abandoned)
- PCB wastes
- biomedical wastes
- wastes containing more than 100 ppb dioxin measured as dioxin TEQ (toxicity equivalents)
- waste containing more than three percent by weight of oil
- waste asbestos containing more than one percent by weight of friable asbestos fibres or dust
- containers and wastes containing pest control products, including wastes produced in making wood products treated with pest control products
- leachable toxic waste
- waste containing more than 500 ppm of tetrachloroethylene
- [waste from a listed process](#) (*Environmental Management Act, Hazardous Waste Regulations – Schedule 7*)
- waste containing more than 100 ppm polycyclic aromatic hydrocarbon (PAH) measured as PAH TEQ

2.2 Exemptions

Hazardous waste does not include any of the following:

- household garbage that is collected from residential premises
- domestic sewage
- dangerous goods that are defective, surplus, or otherwise not usable for their intended purpose, and that are in the process of being returned directly to the manufacturer or supplier
- asphalt and tar used to manufacture asphaltic concrete and roofing materials
- waste wood products treated with wood preservatives or wood protection products registered under the *Pest Control Products Act* (Canada)
- household hazardous waste that is removed from a return collection facility in accordance with an authorization from the

- owner of the return collection facility for reuse for its originally intended purpose
- wood ash, or pulp mill dregs and grit that would be hazardous waste only because they are in class 8 under the *Transport of Dangerous Goods Regulations*
- waste having a pH between 11.5 and 12.5 that would be hazardous waste only because it is in class 8 under the *Transport of Dangerous Goods Regulations*

2.3 Hazardous Waste Regulation Requirements

In BC under the *Hazardous Waste Regulation* stringent technical and administrative requirements apply to the following aspects of hazardous waste management:

- registration – see [WM-230 – Hazardous Waste Registration](#)
- storage – see [WM-240 – Hazardous Waste Storage](#)
- transport – see [WM-260 – Hazardous Waste Transportation](#)
- disposal – see [WM-220 – Hazardous Waste Disposal](#)
- treatment

The requirements that apply depend on:

- the type of hazardous waste
- the quantities of individual waste types on-site at any time
- the rate of generation (kg or L per 30-day period)

2.4 Prohibited Management Practices

Mixing or diluting hazardous waste with any liquid or solid to avoid the *Hazardous Waste Regulation* is prohibited.

Depositing or discharging hazardous waste in a municipal landfill or sewage treatment facility is prohibited, unless the deposition or discharge is permitted by a permit, approval, order, regulation, or waste management plan approved by the minister.

2.5 Empty Containers

With the exception of unrinsed pesticide containers, empty containers that were used for dangerous goods or hazardous wastes are not regulated under the *Hazardous Waste Regulation*.

However, transporting of empty containers that were used for dangerous goods is still regulated under the *Transportation of Dangerous Goods Regulations* and requires a BC Hydro shipping document. Examples are empty fuel tanks or empty gas cylinders.

Empty containers that were used for dangerous goods other than pesticide containers may be handled as regular solid waste and disposed of at a local landfill provided they are no longer hazardous. Use your judgment to determine when a container is no longer hazardous. For example cans containing dry residues of paints that were flammable are not hazardous, but drums containing caustic soda residues are hazardous. If in doubt, contact your [environmental services](#) group for assistance.

Hazardous Waste Disposal

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1.0 Introduction

1.1 Scope

This standard provides general information on BC Hydro procedures for disposing of hazardous wastes. The requirements outlined in this standard apply to any hazardous wastes generated by BC Hydro.

1.2 Background

Through its daily activities, BC Hydro generates various types of hazardous wastes. Hazardous wastes must be disposed of at facilities specially designed to handle hazardous materials. BC Hydro is responsible for ensuring that the hazardous wastes produced are disposed of in a way that meets environmental legislation and ensures the protection of the environment.

1.3 Related Standards and Instructions

For other requirements related to disposal, refer to the following standards:

- [WM-210 – Hazardous Waste General](#)
- [WM-230 – Hazardous Waste Registration](#)
- [WM-250 – Hazardous Waste Testing](#)
- [WM-260 – Hazardous Waste Transportation](#)

For more specific information on certain types of hazardous wastes, see if there is an [Environmental Best Management Practice \(EBMP\)](#).

Note: The *Waste Management Standards* are being replaced by *EBMPs*. *EBMPs* provide more information than *Waste Management Standards*, including information on how to handle materials before they are waste. However, reference to *Waste Management Standards* may be necessary until *EBMPs* are prepared for all materials that were covered by the standards.

See your Line of Business/Business Unit safety procedures for work instructions related to hazardous waste.

2.0 Disposal of Hazardous Waste

The MMBU [Environmental Technical Specialist](#) coordinates disposal of BC Hydro's hazardous wastes using a qualified company under contract.

The MMBU Environmental Technical Specialist maintains a tracking system for hazardous waste generation and disposal throughout BC Hydro. If a facility coordinates disposal of hazardous waste, the MMBU Environmental Technical Specialist should be notified so that the tracking data is kept current. This process ensures that waste is disposed at permitted facilities, and that waste handling meets BC Hydro's specifications (only pre-qualified companies are eligible).

Disposal of hazardous wastes generated through capital projects or clean-up of contaminated sites may be coordinated through the project team. However, hazardous wastes should be disposed of as set out in the *Hazardous Waste Contract* administered by the MMBU Environmental Technical Specialist.

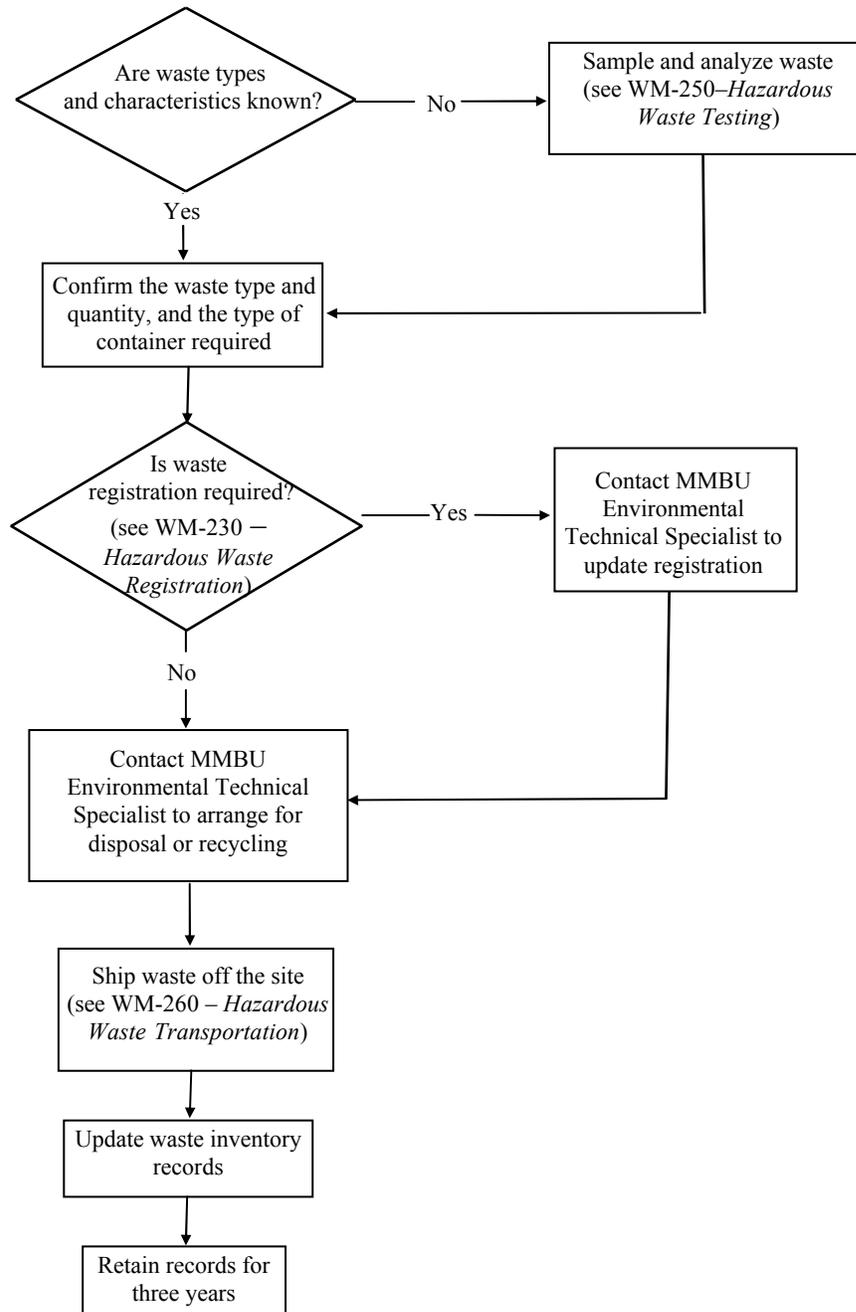
The MMBU Environmental Technical Specialist must be advised of the type and quantity of hazardous wastes generated and the disposal costs to ensure that the data is captured in the BC Hydro waste tracking system.

Except for asbestos, disposing of hazardous waste in regular municipal landfills is prohibited.

2.1 General Procedure

Figure 1 illustrates the procedure for hazardous waste disposal. Contact your [environmental services](#) group for assistance.

Figure 1: Hazardous Waste Disposal Procedure



2.2 Known Wastes

Known wastes means wastes which have properties similar to the material before it was waste (for example waste acetone or waste insulating oil) or wastes which have been characterized by previous testing (for example waste coolant). See the list of [Common Wastes at BC Hydro](#).

See 2.3, [Unknown Wastes](#) for wastes which are not similar to the material before it was waste or for wastes which are mixtures.

To dispose of known hazardous waste:

1. Review the *Material Safety Data Sheet (MSDS)* of the material before it was waste.
2. Confirm the waste type and quantity, and the type of container required.

To confirm the type, use the list of [Common Wastes at BC Hydro](#) to get the:

- shipping name
- UN number, class and packing group if shown

Wastes which have a UN number and class are dangerous goods under the *Transportation of Dangerous Goods Regulations*.

Unless an [exemption](#) allows something else, dangerous goods must be packaged in certified containers. Certified containers are identified by a UN code – see [UN Packaging Specifications](#) to see what the codes look like and mean.

If certified containers are required, contact the MMBU [Environmental Technical Specialist](#) to get these.

If certified containers are not required (for example waste insulating oil containing less than 50 ppm PCBs), use containers in good condition that will not release the waste during normal conditions of transport.

3. See if the waste requires registration or if it has already been registered ([WM-230 – Hazardous Waste Registration](#)). Contact your [environmental services](#) group if a registration update is required.

4. Contact the MMBU [Environmental Technical Specialist](#) to confirm disposal arrangements.
5. Follow the waste generator and consignor instructions outlined in [WM-260 – Hazardous Waste Transportation](#).

2.3 Unknown Wastes

Characterize all unknown wastes before they are transported and disposed of. This will ensure that they are shipped safely under the proper shipping name, with the appropriate documentation and in accordance with the requirements of the *Transportation of Dangerous Goods Regulations*.

Do not attempt to sample the material yourself unless reasonable assumptions can be made about the nature of the waste. Seek advice from your [environmental services](#) group. In some cases, assistance from specialized hazardous waste companies will be required to ensure that the waste can be characterized properly and safely.

For more information on testing, see [WM-250 – Hazardous Waste Testing](#).

3.0 Records

Retain and file copies of the manifest, certificate of disposal, and invoices for future reference.

Update waste inventory records to show that the waste has been shipped. Include the date the container of waste was shipped and the manifest number. See the [Hazardous Waste Inventory Form: Completed Example](#) to show how to keep a hazardous waste inventory if you do not already have one.

4.0 Disposal Hierarchy

Consider re-use or recycling opportunities. Contact your [environmental services](#) group for more information. Note that the BC Hydro corporate policy statement identifies the following hierarchy for managing wastes (the 5Rs):

1. Reduction
2. Re-use
3. Recycling
4. Recovery of energy
5. Residuals management (for example, disposal)

Hazardous Waste Registration

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1.0 Introduction

1.1 Scope

This standard provides information on registering hazardous wastes with the Ministry of Environment. The requirements outlined in this standard apply to any hazardous wastes.

1.2 Related Standards and Instructions

For more specific information on individual hazardous wastes, see if there is an [Environmental Best Management Practice \(EBMP\)](#) for the material.

Note: The *Waste Management Standards* are being replaced by *EBMPs*. *EBMPs* provide more information than *Waste Management Standards*, including information on how to handle materials before they are waste. However, reference to *Waste Management Standards* may be necessary until *EBMPs* are prepared for all materials that were covered by the standards.

2.0 Hazardous Waste Generator Registration

2.1 Criteria for Registration

Unless already registered for a specific type and quantity of hazardous waste, any facility that:

- generates within 30 days
- stores, treats, recycles, disposes of, or
- transports from the facility

more than the [Registration Quantity](#) of a hazardous waste must register with the Ministry of Environment.

If registration is required, it must be within:

- 30 days of generating or storing the waste, or
- before transporting the waste

Many BC Hydro facilities have already been registered for various types and quantities of hazardous waste. See 2.2, [Checking Facility Registration](#) to find out for what types and quantities of hazardous waste your facility is registered.

2.2 Checking Facility Registration

To check the registration of your facility for a specific type of hazardous waste:

1. Look up the [Registration Quantity](#) for the specific type of hazardous waste being handled at your facility (generated in 30 days, stored, treated, recycled, disposed of or transported from your facility). If the quantity of waste being handled is less than the registration quantity for that waste, registration is not required – do not proceed to step 2.
2. If registration is required, go to the [BC Hydro Hazardous Waste Generator Registration Summary](#) and check that:
 - your facility is on the list
 - the type of waste you are dealing with is listed for your facility
 - the quantity registered is more than the quantity of waste being handled at your facility

If any of the above is not the case, a registration update must be submitted for your facility – see 2.4, [Registration Updates](#).

2.3 Registration Number

Use BCG00122 as the Registration Number for BC Hydro facilities when a registration or consignor identification number is required.

2.4 Registration Updates

Contact your [environmental services](#) group to request a registration update if your facility is not registered as required.

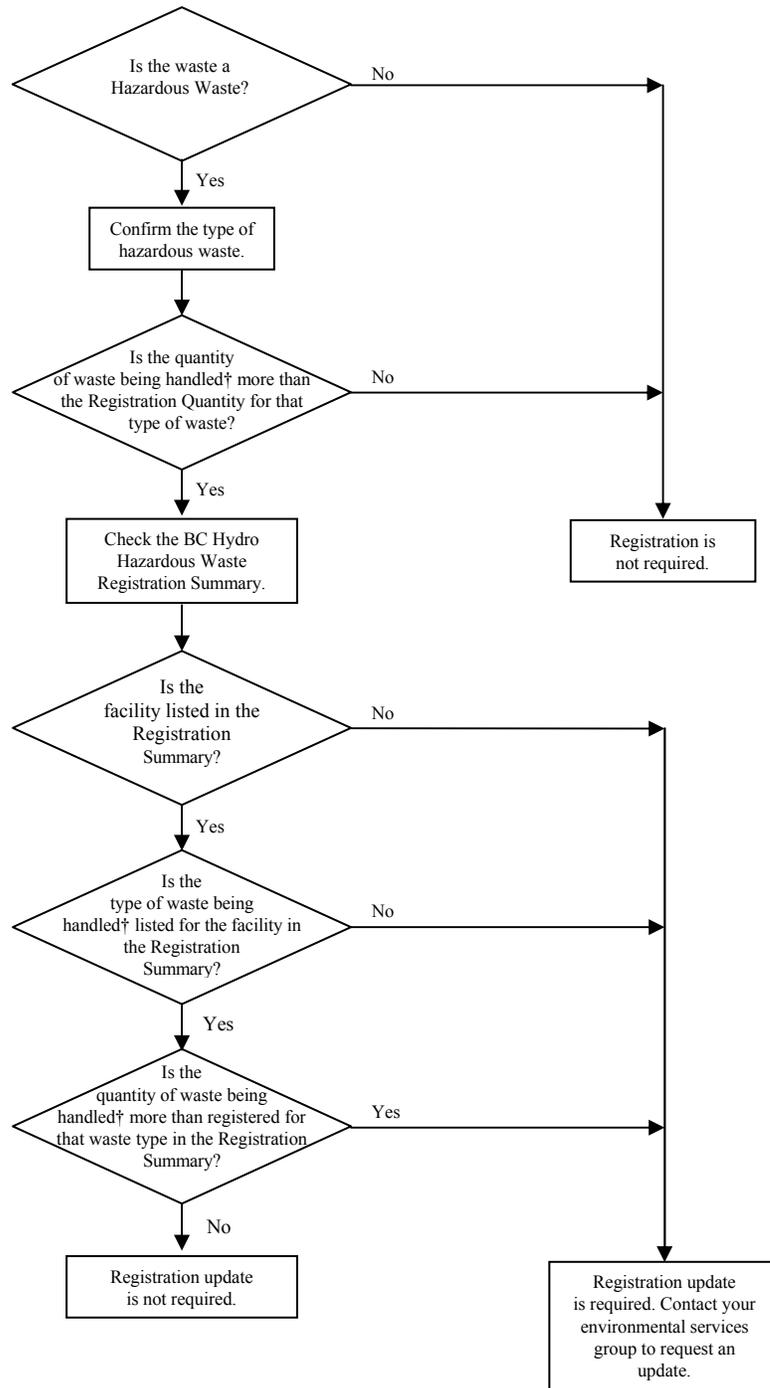
The Ministry of Environment will not assign a new number to the facility, but will simply update their records.

Note: Registration updates must be done by your environmental services group so that the BC Hydro Hazardous Waste Generator Registration Summary is kept up to date.

2.5 Annual Review of Registered Waste

The quantities and types of waste registered at each site must be reviewed at least annually and updated as required. The business group responsible for the site must complete and record the review annually.

Figure 1: Hazardous Waste Registration Requirements



† “Handled” means generated in 30 days, stored, treated, recycled, disposed of or transported from a facility.

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1.0 Introduction

1.1 Scope

This standard outlines BC Hydro's procedures for safe storage of hazardous waste. The requirements outlined in this standard apply to any hazardous wastes.

1.2 Background

Hazardous wastes must be handled and managed with care because of the risks they can pose to the environment and to human health. Improper storage of hazardous wastes may result in harm to the environment or to a worker's health.

1.3 Related Standards and Instructions

For more specific information on certain types of hazardous wastes, see if there is an [Environmental Best Management Practice \(EBMP\)](#) for the material.

Note: The *Waste Management Standards* are being replaced by *EBMPs*. *EBMPs* provide more information than *Waste Management Standards*, including information on how to handle materials before they are waste. However, reference to *Waste Management Standards* may be necessary until *EBMPs* are prepared for all materials that were covered by the standards.

See your Line of Business/Business Unit safety procedures for work instructions related to hazardous waste.

1.4 Definitions

Storage of hazardous waste means any situation where hazardous waste is located with the intention to move it later for management.

Management of hazardous waste means handling, transport, storage, treatment, destruction or disposal of hazardous waste.

2.0 Hazardous Waste Storage Requirements

Figure 1 summarizes which requirements apply for hazardous waste storage. See [Hazardous Waste Registration Quantities](#) for registration quantities for applicable waste types.

Figure 1: Hazardous Waste Storage

<i>Quantity</i>	<i>< Registration Quantity</i>	<i>≥ Registration Quantity</i>
<i>Requirements</i>		
Follow minimum storage requirements ²	✓	✓
Be registered as a hazardous waste generator ³	N/A ¹	✓
Comply with <i>HWR</i> requirements for storage	N/A ¹	✓

¹N/A – not applicable.

²See 2.1, Minimum Storage Requirements, below.

³See [WM-230 – Hazardous Waste Registration](#) for information on checking registration.

2.1 Minimum Storage Requirements

To minimize risks and liabilities associated with releasing hazardous wastes into the environment, store hazardous waste in a dedicated storage area using the guidelines described in 2.1.1 through 2.1.10.

Arrange for regular disposal or recycling to avoid accumulating large quantities of hazardous waste.

If the quantity of waste in storage is more than the [Registration Quantity](#), all requirements of the *Hazardous Waste Regulation* must be complied with – see 2.2, [Hazardous Waste Regulation Requirements](#).

2.1.1 Containers

Containers used to store hazardous waste must be:

- made of or lined with materials that are compatible with the waste
- closed at all times during storage
- handled, stored, or transported to avoid causing leaks or ruptures

Note: When filling containers with hazardous waste, use certified containers if these will be required for transport. Unless an [exemption](#) allows something else, certified containers are required for transporting hazardous wastes which are regulated dangerous goods. Certified containers are identified by a UN code. See [WM-260 – Hazardous Waste Transportation](#) for details.

2.1.2
Location

Store hazardous waste:

- in a designated area which is identified with signs
- away from traffic
- away from drains and watercourses

If storage near drains and watercourses cannot be avoided, make sure the drains or watercourses to which spilled hazardous waste might leak are protected—for example, seal floor drains or use a cover over storm drains.

2.1.3
Containment

If possible, use containment trays, curbed rooms, or transportable storage containers (TSCs) with spill trays for storage facilities. Facilities with non-absorbent floors are preferred.

Note: Consider chemical compatibilities when storing different types of hazardous waste. Contact your [environmental services](#) group for guidance as to what types of hazardous waste may be stored in the same TSC or store room.

2.1.4
Storage Arrangement

Store drums of hazardous waste in an upright, vertical position. Do not stack drums more than two high. Place pallets between layers.

Store hazardous waste so that all containers can be easily inspected for leaks (for example, put containers on pallets with aisle space between the pallets).

2.1.5
Weather Protection

Protect hazardous waste from extreme temperatures, wet weather and humid conditions. If you cannot store the waste under roof, keep a UV-resistant nylon or polypropylene tarp over the waste, or use drum covers to prevent water accumulation. Cover containers in trays with a tarp to prevent rain or snow accumulating in the tray.

2.1.6
Access

Restrict site access during non-working hours.

2.1.7 Label each container on one of its sides with:
Labelling

- an ID number to keep track of the container
- contents of the container (especially if this is not well described by the shipping name)
- shipping name with the word ‘waste’ in front, if this is not already part of the shipping name
- location where the waste was generated
- date the waste was generated (use the start date if the container is filled over time)

and for wastes which are dangerous goods:

- UN number
- a diamond-shaped hazard/class label

BC Hydro waste labels are available from the Main Distribution Centre (previously known as Store 12) in packs of ten—stock number 222-0357. To order these labels, enter a catalogue Material Request (MR) in Passport (will require assistance from a Passport Super User).

Note: Containers of unknown types of waste must not be stored at any BC Hydro location for indefinite periods of time. If unknown wastes are found, contact your [environmental services](#) group for direction on potential characterization procedures and disposal options. Keep unknown wastes separate from known wastes and restrict access to them.

2.1.8 For hazardous waste other than PCB waste, keep an inventory on-site at all times and for two years following its removal from the site. For PCB waste see [WM-310 – Management of Material Containing PCB](#).
Inventory

For each container received or generated, record:

- date received or placed in storage
- ID number
- type of container (for example, bin, drum or crate)
- if received on a shipping document or waste manifest, the number of that document
- shipping name
- UN number
- physical state (solid, liquid, gaseous, or combination)
- quantity of waste in kilograms or litres (if waste is added to a partly filled container, record the total quantity on the container after addition, not the quantity added)
- location of the container within the facility

For each container shipped or re-packaged, record:

- date shipped or re-packaged
- if shipped on a shipping document or waste manifest, the number of that document

See the [Hazardous Waste Inventory Form: Completed Example](#) to see how to keep a hazardous waste inventory if you do not already have one.

2.1.9
Emergency Planning

To plan for emergencies within the storage facility, ensure that key employees are trained in spill response, maintain an updated *Facility Spill Response Plan*, and maintain spill clean-up kits near the stored hazardous waste.

2.1.10
Inspections

Inspect storage facilities monthly or as per the site's scheduled inspection plan. At minimum:

- inspect pallets for damage
- check containers for leaks, damages, or patches
- put leaking or damaged containers in an overbarrel or transfer them to a sound container
- check the integrity of the containment structure
- document the inspection and report the findings

2.2 ***Hazardous Waste Regulation Requirements***

All requirements of the *Hazardous Waste Regulation* apply to storage of more than the [Registration Quantity](#) of a hazardous waste.

Contact your [environmental services](#) group to get help in determining which requirements apply and how they should be implemented.

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1.0 Introduction

1.1 Scope

This standard provides general information on how to collect samples and to arrange for tests to characterize hazardous waste materials. This standard can also be used as general guidance for sampling other waste streams such as sewage, oil-water separator sludge, and contaminated soil.

1.2 Background

Known or unknown materials are characterized to determine if they qualify as hazardous waste, to formulate adequate disposal options, and to ensure that they are shipped in compliance with the federal *Transportation of Dangerous Goods Regulations*.

1.3 Related Standards and Instructions

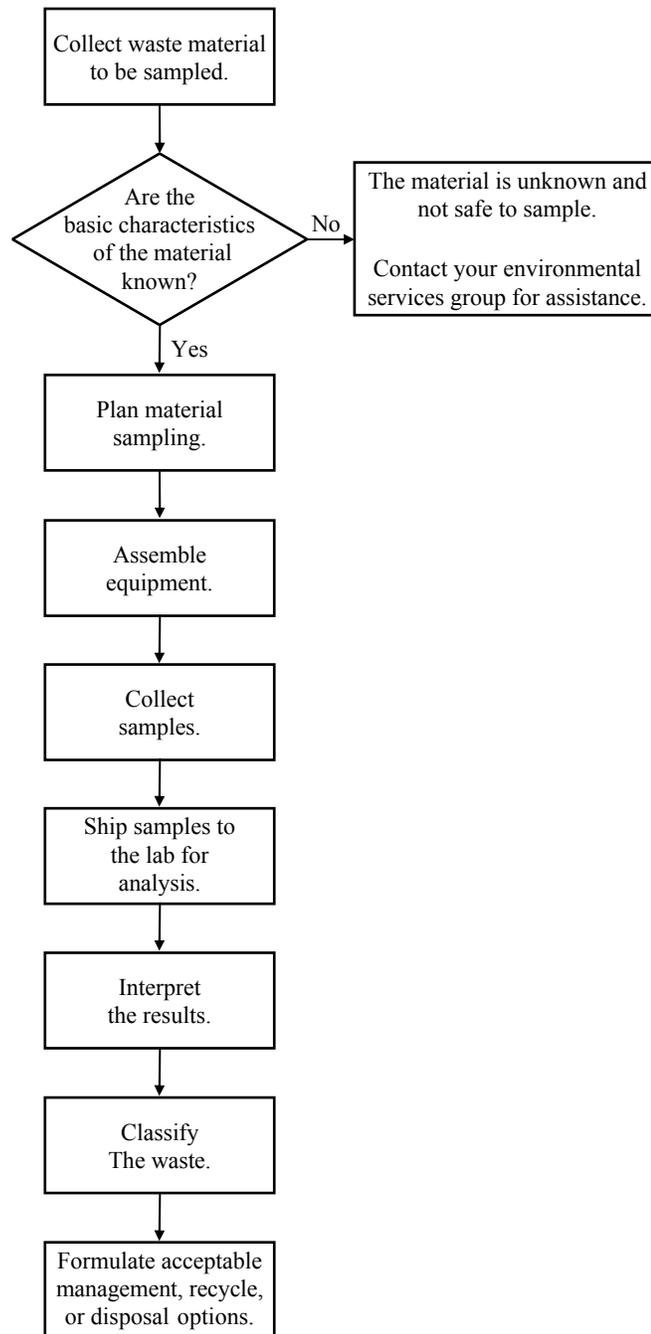
For more specific information on testing certain types of hazardous wastes, see if there is an [Environmental Best Management Practice \(EBMP\)](#) for the material. Information on testing, if any, will be on a *Testing* heading in the *EBMP* for the specific material.

Note: The *Waste Management Standards* are being replaced by *EBMPs*. *EBMPs* provide more information than *Waste Management Standards*, including information on how to handle materials before they are waste.

See your Line of Business/Business Unit safety procedures for work instructions related to hazardous waste.

2.0 Sampling and Testing Procedure

Figure 1: Hazardous Waste Sampling and Testing Procedure



2.1 Planning Sampling

Before sampling a waste stream, planning is required to ensure that the sample can be collected safely and properly. To help determine what the material may contain, which tests to perform, and how much sample to collect, refer to any of the following resources:

- *Material Safety Data Sheet (MSDS)*
- manufacturer of product
- container labels or markings

If the material is still unknown, samples must be obtained by or under the supervision of environmental specialists or safety coordinators because of the risks involved in handling the material.

For known or unknown wastes, consult your [environmental services](#) group to determine the following:

- how many samples are required
- what parameters to test for
- how to take a representative sample

If using Powertech Lab, call 604 590-7500 for instructions on handling the sample and to get sample bottles, labels, and chain of custody forms.

2.2 Assembling Equipment

Assemble the following equipment before collecting a sample:

- personal protective equipment such as gloves or goggles
- a label for the drum or container from which the sample was taken
- bottles with labels and lids, provided by the analyzing laboratory
- indelible pen for completing labels
- box or cooler to ship the samples (use the original sampling bottle box if possible)
- packing material such as newspaper or bubble wrap
- packing tape for binding and sealing the shipping box
- clean equipment for sample collection such as a trowel, jar, or pipette
- plastic sheeting
- detergent (such asalconox) and clean water to clean the sampling equipment

2.3 Collecting Samples

Use the following guidelines to collect samples:

- lay out plastic sheeting beside the sampling location and place the sampling equipment (such as bottles) on the sheeting
- wear your personal protective equipment
- use the type of bottle specified for the test being done
- do not touch the inside of the bottle or lid
- fill the sample container completely and tighten the lid
- clean the sampling equipment using detergent and water and rinse thoroughly before collecting the next sample

Note: The sample should be representative of the waste. For waste that settles, you may want to stir the contents, if it is safe to stir them, or use plastic tubing or ABS pipe with a bottom rubber plug attached to a chain that can be pulled through the pipe. This method allows you to collect a “cross-section” of the container.

2.4 Labelling the Sample

Information required on the sample label includes:

- client name
- sample ID
- site location
- date and time the sample was collected
- chemical parameters to be analyzed
- name and phone number of the person doing the sampling

Portions of the labels can be filled out ahead of time.

If you use one of the labels commonly used for maintenance tests, (such as labels for lube oils or coolants), specify under the comments or remarks section that the sample is being shipped for environmental testing or characterization so that the lab does not perform routine maintenance tests instead.

2.5 Labelling the Source Container

Label the container or drum from which the sample was taken with the ID on the sample label. When the lab results come back, it will be easier to cross-reference them with the exact source of the sample.

2.6 Preparing the Samples for Shipment

If the samples cannot be shipped immediately, keep them refrigerated at 4°C using chill packs.

If you are using Powertech Labs, get a *Powertech Chain of Custody Form* by calling (604) 590-7453. Figure 2 shows what the form looks like.

Figure 2: Powertech Chain of Custody Form

Complete the laboratory chain of custody form. Write the words “Test Samples” and the name and address of the shipper if they are not already on the form. Put the form in a zip-lock bag.

Package the samples securely to prevent leakage and so that:

- gross mass of the samples is less than 10 kg (samples and packaging)
- net mass of the samples is less than 5 kg (samples alone)
- each sample container is tightly closed
- sample containers are protected with packing material such as bubble wrap taped round them
- chain of custody form in the zip-lock bag is on top of samples

Mark the outside of the package clearly with the words “Test Samples” and with the name and telephone number of the shipper.

Note: Samples that are not thought to be explosive, infectious or radioactive and that are packaged as described above and shipped by road, rail or domestic ship are exempt from:

- UN performance packaging requirements (containers do not have a UN packaging code on them)
- all other requirements of the *Transportation of Dangerous Goods Regulations*
- *Hazardous Waste Regulation* requirements

Samples which may be explosive, infectious or radioactive must comply with the full requirements of the *TDG*—contact your [environmental services](#) group for assistance.

2.7 Transporting the Samples

If you are using Powertech Labs send to:

Powertech Labs Inc.
Environmental Laboratory
12388 - 88th Ave
Surrey BC V3W 7R7

Do not send the package by Canada Post.

3.0 Interpretation of Sampling Results

Contact your [environmental services](#) group for assistance interpreting analytical results and formulating the appropriate management options for the waste.

Hazardous Waste Transportation

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1.0 Introduction

1.1 Scope

This standard outlines the requirements for transporting hazardous waste.

1.2 Background

Through its daily activities, BC Hydro generates various types of wastes that are classified and regulated as hazardous wastes in BC. To make sure these wastes are safely transported to their intended destination, the steps set out in this standard must be followed.

Responsibilities for transport are shared between the consignor (shipper), carrier, and consignee (receiver). The transport process starts with correctly identifying, packing and documenting the wastes, and ends with confirmation that all waste sent has been received.

An overview of the process and how the responsibilities are shared is shown in Figure 1.

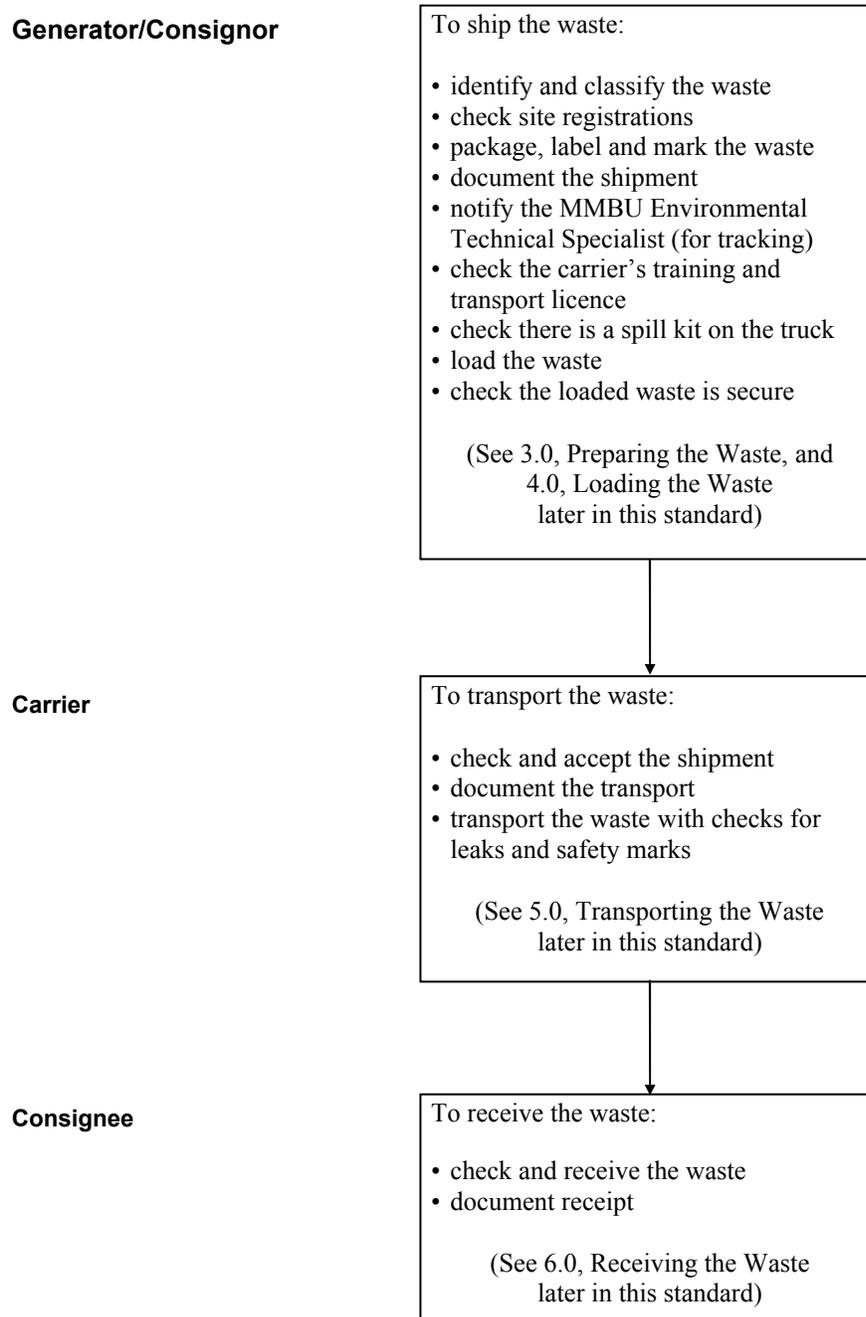
1.3 Related Standards and Instructions

For more specific information on transporting certain types of hazardous wastes, see if there is an [Environmental Best Management Practice \(EBMP\)](#) for the material.

Note: The *Waste Management Standards* are being replaced by *EBMPs*. *EBMPs* provide more information than *Waste Management Standards*, including information on how to handle materials before they are waste. However, reference to *Waste Management Standards* may be necessary until *EBMPs* are prepared for all materials that were covered by the standards.

See your Line of Business/Business Unit safety procedures for work instructions related to hazardous waste.

Figure 1: Overview of Hazardous Waste Transportation Procedures



1.4 Legislation

Section 46 of the provincial *Hazardous Waste Regulation (HWR)* specifies when a movement document/manifest is required to transport hazardous waste – see [Hazardous Waste Manifest Quantities](#). The federal *Interprovincial Movement of Hazardous Waste Regulations* also require a movement document/manifest if transport is out of Province.

Movement documents/manifests are not required for:

- transport of dangerous goods within the boundaries of property owned, leased, or controlled by BC Hydro
- for travel on a public road for a distance less than 3 km
- untested distribution equipment containing oil possibly contaminated with PCBs. For details on this exemption, see [WM-340 – PCB Transportation](#)

Section 45 of the *HWR* specifies when a transport licence is required to transport hazardous waste by road – see [Hazardous Waste Transport Licence Quantities](#).

1.5 Definition of Terms

Consignor – a person who offers a consignment for transport (shipper).

Carrier – any person transporting goods or passengers, whether or not for hire or reward (transporter).

Consignee – a person to whom a consignment is being offered or is intended to be transported (receiver).

2.0 Training

All BC Hydro employees who handle or transport dangerous goods or who offer them for transport must receive suitable training. The training must meet the requirements of the *Transportation of Dangerous Goods Regulations*. For modes of transport other than air, a certificate of training is valid for 36 months within Canada. Make arrangements for training through your Co-ordinator of Occupational Safety and Health

3.0 Preparing the Waste

3.1 Waste Generator Responsibilities

To prepare the waste for transport, the waste generator must:

Waste Identification Identify the waste and confirm that it is a hazardous waste (see [WM-210 – Hazardous Waste – General](#)).

For known wastes such as waste acetone or insulating oil which are similar to the material before it was waste or for wastes which have been previously characterized such as waste antifreeze, use the list of [Common Wastes at BC Hydro](#) or the material *MSDS* to get the:

- shipping name
- UN number, class and packing group if shown

For unknown wastes such as mixtures or wastes which are not similar to a material before it was waste, contact your [environmental services](#) group for help in identifying the waste type.

Site Registrations Verify that the shipping and receiving sites are properly registered.

Look up the [Registration Quantity](#) for the specific type of waste being transported. If the quantity of waste being transported is less than the registration quantity, registration is not required – see the next section, *Waste Tracking*.

If registration is required, go to the [BC Hydro Hazardous Waste Generator Registration Summary](#) and check that:

- shipping site is on the list
- receiving site is on the list, if it is a BC Hydro site
- the type of waste you are transporting is listed for your facility
- the quantity registered is more than the quantity of waste being transported from the facility

If any of the above is not the case, contact your [environmental services](#) group to request a registration update.

If the receiving site is not a BC Hydro site, contact the site operator to get their registration or permit number.

Waste Tracking Coordinate the shipment with the MMBU [Environmental Technical Specialist](#).

3.2 Consignor (Shipper) Responsibilities

The person shipping hazardous waste or waste dangerous goods is responsible for preparing the waste for shipment, documenting the shipment, and shipping the waste.

To prepare the waste for shipment:

Confirmation of Waste Identification

Get the shipping name, UN number, class and packing group from the waste generator and confirm this information using the list of [Common Wastes at BC Hydro](#), the material MSDS or information provided by your [environmental services](#) group.

Wastes which have a UN number and class are dangerous goods under the *Transportation of Dangerous Goods Regulations*. The sections below indicate where additional requirements apply to wastes that are dangerous goods.

Packaging

Make sure containers and packaging for hazardous waste are:

- in good condition for transport
- properly closed
- not leaking, and
- certified, if required

Unless an [exemption](#) allows something else, wastes that are dangerous goods must be packaged in certified containers. Certified containers are identified by a UN code – see [UN Packaging Specifications](#) to see what the codes look like and what they mean. If certified containers are required, contact the MMBU [Environmental Technical Specialist](#) to get these.

Labels and Marks

Make sure containers and packages are labelled and marked in weather-resistant form on one of their sides with:

- an ID number to keep track of the container
- contents of the container (especially if this is not well described by the shipping name)
- shipping name with the word ‘waste’ in front, if this is not already part of the shipping name
- location where the waste was generated
- date the waste was generated (use the start date if the container is filled over time)

and for wastes which are dangerous goods:

- UN number
- a diamond-shaped hazard/class label

- a UN certification code unless an [exemption](#) allows something else

BC Hydro waste labels are available from the Main Distribution Centre (previously known as Store 12) in packs of ten—stock number 227-0357.

To document the shipment:***Manifest Completion***

If the quantity of hazardous waste requires a movement document/manifest and no [exemption](#) applies, complete Part A of a movement document/manifest to document the shipment – see [Hazardous Waste Manifest Quantities](#).

See [How to Complete Part A of a Movement Document/Manifest](#) for instructions. Use a ballpoint pen and **press hard**.

Movement documents/manifests are available from BC Hydro Construction Business Unit or through your [environmental services](#) group.

Note: Unless an [exemption](#) allows something else, wastes that are dangerous goods require a shipping document even if a movement document/manifest is not required. See [How to Complete a Shipping Document](#)

Have the carrier complete Part B of the manifest. See [How to Complete Part B of a Movement Document/Manifest](#) for instructions.

4.0 Loading the Waste

4.1 Consignor (Shipper) Responsibilities

Preparing to load the waste:

Carrier Training and Transport Licence

Check that the carrier has a valid *TDG Certificate* and a *Hazardous Waste Transport License* if one is required – see [Hazardous Waste Transport Licence Quantities](#).

Placards

Provide placards to the carrier if required.

Spill Kits and Spill Prevention

Have a spill kit available and follow a spill prevention plan (for example, block drains in the loading area).

Check that the carrier has a spill kit and a copy of the Spill Response Card.

To load the waste:

Safety

Use proper personal protective equipment and safe work procedures when loading the wastes.

Movement Document/Manifest Check

Make sure the movement document/manifest is correct by checking off the types and amounts of wastes as they are loaded.

Load Check

Check that carrier has secured loaded wastes properly.

After Loading the Waste:

Movement Document/Manifest Distribution

[Distribution of the Movement Document/Manifest](#) summarizes how to distribute and retain the movement document/manifest copies if a movement document/manifest is required.

- Within two working days mail the original of copy 1 (white) to:

Hazardous Waste Program
 Ministry of Environment
 PO Box 9342
 Stn Provincial Government
 Victoria BC V8W 9M1

Note: The Ministry does not accept fax copies.

- If the waste is being disposed of without being shipped through Salvage Warehouse M (previously known as Store 12), take a photocopy of copy 1 and mail to:

MMBU Environmental Technical Specialist
12345 - 88th Ave
Surrey BC V3W 5Z9

- If the waste is being shipped out of BC, take a photocopy of copy 1 and send to the regulatory authority for the receiving jurisdiction. Addresses for Canadian jurisdictions are listed on the back of the movement document/manifest
- Give copies 3 to 6 of the manifest to the carrier
- Keep copy 2 (green) of the movement document/manifest and match it up with copy 6 (gold or brown) when it is returned by the consignee. Keep copies 2 and 6 for at least two years.

Exemption Permit

If the waste is being transported without a movement document/manifest under the terms of an Exemption Permit, make sure the carrier has a copy of the permit.

Inventory Update

Update the waste inventory records to show:

- date shipped
- number of the movement document/manifest or shipping document

See the [Hazardous Waste Inventory Form: Completed Example](#) to show how to keep a hazardous waste inventory if you do not already have one.

5.0 Transporting the Waste

5.1 Carrier Responsibilities

The carrier is responsible for accepting, documenting and transporting the waste.

To accept the shipment:

<i>Spill Response</i>	Have a spill kit and a copy of the Spill Response Card.
<i>Training and Transport Licence</i>	Carry a valid <i>TDG Certificate</i> and a <i>Hazardous Waste Transport Licence</i> if one is required – see Hazardous Waste Transport Licence Quantities .
<i>Movement Document/Manifest Check</i>	Check the shipment against the movement document/manifest.
<i>Packaging</i>	<p>Check that the containers are:</p> <ul style="list-style-type: none"> • in good condition for transport • properly closed • not leaking, and • certified, if required <p>Unless an exemption allows something else, wastes that are dangerous goods (wastes having a UN number and class) must be packaged in certified containers. Certified containers are identified by a UN code – see UN Packaging Specifications to see what the codes look like and what they mean.</p>
<i>Labels and Marks</i>	Check that the wastes are properly labelled and marked.
<i>Acceptance</i>	Based on the above criteria, accept or reject the shipment.
<i>Placards</i>	If required, attach placards prior to loading the vehicle.
To document the shipment:	
<i>Movement Document/Manifest Completion</i>	Complete Part B of the manifest if one is required – see Hazardous Waste Manifest Quantities . See How to Complete Part B of a Movement Document/Manifest for instructions.
<i>Movement Document/Manifest Distribution</i>	<p>Distribution of the Movement Document/Manifest summarizes how to distribute and retain the manifest copies.</p> <p>Return copy 1 (white) and copy 2 (green) of the movement document/manifest to the shipper. Take copies 3 to 6 with the load.</p>

Keep copy 4 (pink) of the movement document/manifest for at least two years after it is signed by the receiver when devliering the load.

Exemption Permit

If the waste is being transported without a movement document/manifest under the terms of an Exemption Permit, take a copy of the permit with the load.

To transport the waste:***Checks for Leaks and Safety Marks***

Maintain or replace safety marks. Inspect the load to ensure that no leakage has occurred and that the load is secure at intervals not exceeding 2 hours or 200 km, whichever is more frequent.

Location of Documentation

Keep the shipping documentation in the location required by the regulations – see [Required Locations for Documents When Transporting Dangerous Goods or Hazardous Waste](#)

Reporting

Report spills or dangerous occurrences during transport to the appropriate authorities.

6.0 Receiving the Waste

6.1 Consignee (Receiver) Responsibilities

The consignee is responsible for receiving and documenting the receipt of waste.

To receive the waste:

Movement Document/Manifest Check

Ensure that the shipment is accompanied by a movement document/manifest if one is required and that the shipment matches the description on the movement document/manifest – see [Hazardous Waste Manifest Quantities](#).

Spill Kit and Spill Prevention

Have a spill kit available and follow a spill prevention plan (for example, block drains in the unloading area).

Discrepancies

Verify the quantity of waste received. Notify your supervisor immediately if there is a discrepancy of more than 5% between the quantity shown on the movement document/manifest and the quantity received.

Waste Check

Note any peculiarities about the waste received (for example, damaged or leaking containers).

To document the receipt of the waste:

Movement Document/Manifest Completion

Complete Part C of the manifest if one is required – see [Hazardous Waste Manifest Quantities](#). See [How to Complete Part C of a Movement Document/Manifest](#) for instructions.

Movement Document/Manifest Distribution

[Distribution of the Movement Document/Manifest](#) summarizes how to distribute and retain the movement document/manifest copies.

Send the copy 6 (gold or brown) of the movement document/manifest to the shipper (consignor).

Send copy 3 (yellow), or a photocopy, to the appropriate jurisdiction of origin and receiving jurisdiction within two working days. For example, for shipments within BC, a copy must be sent to:

Hazardous Waste Program
 Ministry of Environment
 PO Box 9342
 Stn Provincial Government
 Victoria BC V8W 9M1

Note: The Ministry does not accept fax copies.

Return copy 4 (pink) to the carrier.

Retain copy 5 (blue) for at least two years.

Inventory Update

Update the waste inventory records to show that the waste has been received. Include the following:

- volume (litres) or mass (kilograms) of the hazardous waste
- date the container was received
- location where the waste originated
- movement document/manifest number
- description of the contents of the container

Waste Rags and Sorbents

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1.0 Introduction

1.1 Scope

This standard outlines requirements for classifying, handling and disposing of waste rags and sorbents.

1.2 Background

Rags and sorbents are used at BC Hydro for routine maintenance activities or spill clean-up and can become contaminated with various materials, including:

- lubricating oils and greases
- insulating oil
- hydraulic oil
- fuels
- solvents
- PCBs
- corrosive liquids such as battery fluid

1.3 Related Standards and Instructions

For more information on managing waste rags and sorbents that are hazardous wastes, see also the following standards:

- [WM-220 – Hazardous Waste Disposal](#)
- [WM-240 – Hazardous Waste Storage](#)
- [WM-260 – Hazardous Waste Transportation](#)

For information on managing waste rags and sorbents considered PCB wastes, see also:

- [WM-310 – Management of Materials Containing PCB](#)

See your Line of Business/Business Unit safety procedures for work instructions related to waste rags and sorbents.

1.4 Definitions

Dangerous goods means a substance or waste that is in any class according to the *Transportation of Dangerous Goods (TDG) Regulations*.

Hazardous waste means a waste that is hazardous waste according to the *Hazardous Waste Regulation*.

Rags means pieces of cloth or other material made of cotton or other natural fibres.

Sorbents means materials, other than rags, used for absorbing or soaking up liquids, and includes pads, booms, socks or similar items made of polypropylene, as well as floor-dry type pellets or granules.

2.0 Classification of Waste Rags and Sorbents

Classify waste rags and sorbents as shown in Figure 1 according to what they are and what they contain. Refer to the MSDS of the absorbed liquid for information on whether it is flammable (flash point less than or equal to 60 °C) or corrosive. Refer to laboratory reports for PCB content.

Most waste rags and sorbents at BC Hydro are one of the following:

Dangerous Goods and Hazardous Waste

Waste Polychlorinated Biphenyls (PCB) – Waste rags or sorbents containing 50 ppm or more PCB.

Note: If the wastes are oily rags, they could be spontaneously combustible and must be handled accordingly.

Waste Solids Containing Flammable Liquid, N.O.S. – Waste rags or sorbents containing solvents, paint thinners, flammable liquids or oil where the liquid has a flash point less than 60 °C.

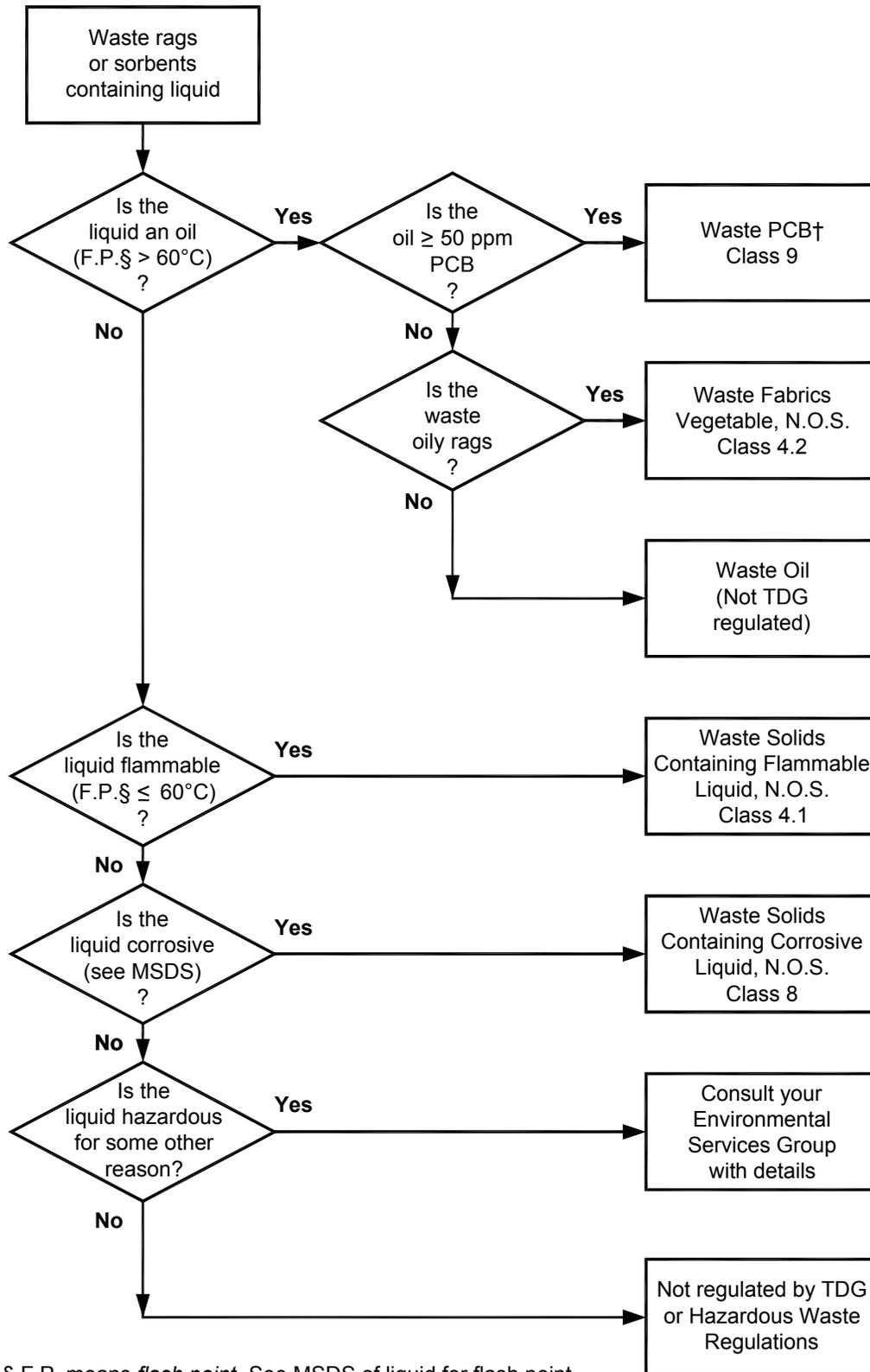
Waste Fabrics, Vegetable, N.O.S. – Waste oily rags, even if the oil they contain has a flash point greater than 60 °C.

Waste Solids Containing Corrosive Liquid, N.O.S. – Waste rags or sorbents containing corrosive liquids such as battery fluid.

Hazardous Waste Only

Waste Oil – Sorbents, containing waste lube, insulating or hydraulic oil, where the oil has a flash point greater than 60 °C and the waste contains less than 50 ppm PCB.

Figure 1: Classification of Waste Rags and Sorbents



§ F.P. means *flash point*. See MSDS of liquid for flash point.

† Oily rags containing PCBs may be spontaneously combustible and must be handled accordingly

3.0 Hazardous Waste Regulation Requirements

Figure 2 summarizes the applicable requirements under the *Hazardous Waste Regulation (HWR)* for waste rags and sorbents based on the classification in Figure 1.

Figure 2: Hazardous Waste Regulation Requirements for Waste Rags and Sorbents

Shipping Name	Class	Waste Manifest Required to Transport	Registration Required	Store in Compliance with Regulation	Transport Licence Required for Transport by Road	
					BC Hydro	Contractor
Waste Oil	None	≥210 L	≥5,000 L	≥5,000 L	≥5,000 L	≥210 L
Waste Solids Containing Flammable Liquid, N.O.S. ¹	4.1	≥5 kg	≥1,000 kg	≥1,000 kg	≥1,000 kg	≥5 kg
Waste Fabrics, Vegetable, N.O.S.	4.2	≥5 kg	≥100 kg	≥100 kg	≥100 kg	≥5 kg
Waste Solids Containing Corrosive Liquid N.O.S. ²	8	≥5 kg	≥100 kg	≥100 kg	≥100 kg	≥5 kg
Waste Polychlorinated Biphenyls	9	≥500 g PCB or 5 kg of waste ³	≥5 kg	≥5 kg	≥5 kg	≥500 g PCB or 5 kg of waste ³

¹ Add the technical name of the flammable liquid in brackets after N.O.S.—for example, Waste Solids Containing Flammable Liquid, N.O.S. (Toluene).

² Add the technical name of the corrosive liquid in brackets after N.O.S.—for example, Waste Solids Containing Corrosive Liquid, N.O.S. (Sulphuric Acid).

³ Any quantity of waste that contains 500 or more grams of pure PCBs, or 5 or more kilograms of waste that contain 50 or more ppm PCB.

See [WM-230 – Hazardous Waste Registration](#) for information on completing a Generator Registration Form.

4.0 Management of Waste Rags and Sorbents

4.1 Segregation

Keep different types of wastes separate. If practical, do not mix wastes contaminated with flammable liquid with wastes contaminated with oil, as this will change the classification of the entire container to waste flammable solid.

4.2 Collection

Waste rags contaminated with oil and sorbents containing flammable liquids are hazardous because they may catch fire spontaneously. Environmental controls must be in place and strictly adhered to.

Collect potentially flammable rags or sorbents in containers fitted with a self-closing lid. Make sure the bottom of the container is raised and vented to prevent any heat transfer to the floor. The design of the self-closing lid and raised bottom must be approved by the BC Hydro Fire Marshall.

Use UN certified drums if the waste rags and sorbents:

- will be transported in the collection container, and
- are dangerous goods unless an [exemption](#) allows something else

Certified containers are identified by a [UN code](#).

Containers must be closed securely and labelled before transport.

4.3 Laundering Waste Rags

On-site washing of waste rags is discouraged for the following reasons:

- BC Hydro sewage treatment plants are designed to handle typical sewage. They are not designed or sized to handle large volumes of laundry water. The large amounts of detergents used in washing and the oil generated from washing the rags can compromise the operation of the sewage treatment system.
- Some of BC Hydro's sewage disposal systems are connected to the tail race, where the oil and detergent will end up. These are considered deleterious substances.
- For BC Hydro systems that are connected to a sewage disposal field, the extra loads of detergent and oil will decrease the absorption capacity of the soil and may lead to eventual failure of the tile field.

5.0 Transportation

Figure 3 summarizes the requirements for transporting waste rags and sorbents, based on the classification in Figure 1.

See [WM-260 – Hazardous Waste Transportation](#) for detailed information on transport.

Use UN certified containers for waste rags and sorbents that are dangerous goods unless an [exemption](#) allows something else.

Certified containers are identified by a [UN code](#).

Figure 3: Requirements for Transporting Waste Rags and Sorbents

Shipping Name	Class	UN Number	Packing Group	TDG Hazard Label	Placard Quantity ¹	Manifest Quantity ²	Transport Licence Quantity ³	
							BC Hydro	Contractor
Waste Oil	None	Not applicable	Not applicable	Not applicable	Not applicable	≥ 210 L	≥ 5,000 L	≥ 210 L
Waste Solids Containing Flammable Liquid, N.O.S. ⁴	4.1	UN 3175	II		≥ 500 kg	≥ 5 kg	≥ 1,000 kg	≥ 5 kg
Waste Fabrics, Vegetable, N.O.S.	4.2	UN 1373	III		≥ 500 kg	≥ 5 kg	≥ 100 kg	≥ 5 kg
Waste Solids Containing Corrosive Liquid N.O.S. ⁵	8	UN 3244	II		≥ 500 kg	5≥ kg	≥ 100 kg	≥ 5 kg
Waste Polychlorinated Biphenyls	9	UN 2315	II		≥ 500 kg	≥ 500 g PCB or 5 kg of waste ⁶	≥ 500 kg	5≥ 00 g PCB or 5 kg of waste ⁶

¹ Quantity that requires placards to be displayed when transported. The placards look like the hazard label shown in the column to the left unless a Danger placard is used for a mixed load.

² Quantity that requires a manifest when transported.

³ Quantity that requires a transport licence when transported by road.

⁴ Add the technical name of the flammable liquid in brackets after N.O.S.—for example, Waste Solids Containing Flammable Liquid, N.O.S. (Toluene).

⁵ Add the technical name of the corrosive liquid in brackets after N.O.S.—for example, Waste Solids Containing Corrosive Liquid, N.O.S. (Sulphuric Acid).

⁶ Any quantity of waste that contains 500 or more grams of pure PCBs, or 5 or more kilograms of waste that contain 50 or more ppm PCB.

6.0 Storage

Arrange for regular disposal or recycling to avoid accumulating large quantities of waste rags and sorbents. All requirements of the *Hazardous Waste Regulation* apply to storage of more than the *registration quantity* of waste rags and sorbents.

The registration quantities for different types of waste rags and sorbents are shown in Figure 2 based on the classification in Figure 1.

Store full drums of waste rags and sorbents:

- with lids closed securely
- on pallets protected from the weather
- in a cool location away from combustible materials

Containers Containers must be:

- compatible with the waste rags and sorbents
- closed at all times during storage
- handled, stored, or transported to avoid damage
- UN certified if the waste rags and sorbents are dangerous goods unless an [exemption](#) allows something else

Certified containers are identified by a [UN code](#).

Labelling Label each container on the side facing outwards with a BC Hydro waste label. BC Hydro waste labels are available from the Main Distribution Centre in packs of ten by filling out a Material Request on Passport—stock number 227-0357.

Figure 4 shows examples of properly completed waste labels. Enter the following on the waste label:

- ID number to keep track of the waste container for inventory purposes. If this box is not on the label, write the container ID on the top right of the label
- TDG shipping name, TDG PIN, Class and Packing Group as applicable for the type of waste – see Figure 3
- location from where the waste is being shipped. Complete at time of shipping
- container number. Complete at time of shipping
- name of the person who is completing the label/filling the waste container

Figure 4: Example Completed Waste Labels

BChydro 		CONTAINER ID: WO 125	
<h1 style="color: red;">WASTE LABEL</h1>			
Shipping Information (TDG)			
TDG Shipping Name: <u>WASTE OIL</u>			
TDG PIN: UN <u>N/A</u>		TDG CLASS: <u>N/A</u>	
Packing Group: <u>N/A</u>		Shipped From: <u>470 WEST KENT ST, VANCOUVER, BC</u>	
Container <u>1</u> of <u>1</u>			
Waste Origin Information			
Produced By: <u>JOE SMITH</u>		Date Produced: <u>10</u> - <u>16</u> 20 <u>0</u> <u>9</u>	
Produced From: <u>KIDD #1 SUBSTATION</u>		Phone: (<u>604</u>) ^(mm) <u>308</u> - ^(dd) <u>8116</u>	
Waste Information (Refer to MSDS if applicable)			
Waste Description: <u>PADS FROM CIRCUIT BREAKER MAINTENANCE</u>		WASTE OIL (required information)	
SOLID <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> GAS <input type="checkbox"/> SLUDGE <input type="checkbox"/>		Insulating <input checked="" type="checkbox"/> Lubricating _____ Hydraulic _____	
Comments: _____		PCB levels: <u>12</u> (ppm) Lab Report # <u>PCB-12-0345-06</u> FACILITY SOURCE: Station ID: <u>KI2</u> Equip ID: <u>12CB34</u> Spill Location: <u>N/A</u> (if applicable)	
CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 604-590-7535 / 604-590-7571 <small>to order: BCH Stock #222-0357</small>			

BChydro 		CONTAINER ID: SORB 117	
<h1 style="color: red;">WASTE LABEL</h1>			
Shipping Information (TDG)			
TDG Shipping Name: <u>WASTE SOLIDS CONTAINING CORROSIVE LIQUID N.O.S. (SULPHURIC ACID)</u>			
TDG PIN: UN <u>3244</u>		TDG CLASS: <u>8</u>	
Packing Group: <u>II</u>		Shipped From: <u>4051 LOUGHEED HIGHWAY, BURNABY, BC</u>	
Container <u>1</u> of <u>1</u>			
Waste Origin Information			
Produced By: <u>KEVIN JONES</u>		Date Produced: <u>10</u> - <u>16</u> 20 <u>0</u> <u>9</u>	
Produced From: <u>HORNE PAYNE HEADQUARTERS</u>		Phone: (<u>604</u>) ^(mm) <u>308</u> - ^(dd) <u>8116</u>	
Waste Information (Refer to MSDS if applicable)			
Waste Description: <u>SORBENT FROM CLEANUP OF BATTERY ACID SPILL</u>		WASTE OIL (required information)	
SOLID <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> GAS <input type="checkbox"/> SLUDGE <input type="checkbox"/>		Insulating _____ Lubricating _____ Hydraulic _____	
Comments: _____		PCB levels: _____ (ppm) Lab Report # _____ FACILITY SOURCE: Station ID: _____ Equip ID: _____ Spill Location: _____ (if applicable)	
CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 604-590-7535 / 604-590-7571 <small>to order: BCH Stock #222-0357</small>			

- where the waste was generated (can be equipment or station)
- actual date the waste container was filled and the label was completed (use the start date if the container is filled over time)
- phone number of person completing the label and filling the waste container
- contents of the container (especially if this is not well described by the shipping name), with check mark to indicate solid as the physical state

For waste oil:

- check mark as applicable to indicate type of waste oil
- PCB levels and Lab Report # if waste contains insulating oil
- station ID, equipment ID code, spill address or Environmental Incident Report (EIR) number

For waste rags and sorbents that are not waste oil, cross out the waste oil information section.

In addition, on containers of waste rags and sorbents that are dangerous goods, put a TDG hazard label as applicable for the type of waste – see Figure 3.

Fire Protection

There are many Fire Code requirements for storing flammable or combustible materials, especially inside buildings. The details are beyond the scope of this standard. Make sure that any storage area is approved by the BC Hydro Fire Marshall.

Inventory

For waste rags and sorbents other than PCB waste, keep an inventory on-site at all times and for two years following its removal from the site. For PCB waste see [WM-310 – Management of Materials Containing PCB](#).

For each container received or generated, record:

- date received or placed in storage
- ID number
- type of container (for example, bin, drum or pail)
- if received on a shipping document or waste manifest, the number of that document
- contents of the container (especially if this is not well described by the shipping name)
- shipping name
- UN number (previously referred to as the PIN)
- physical state (solid, liquid, or combination)
- quantity of waste in kilograms or litres (if waste is added to a partly filled container, record the total quantity on the container after addition, not the quantity added)

- location of the container within the facility

For each container shipped or re-packaged, record:

- date shipped or re-packaged
- if shipped on a shipping document or waste manifest, the number of that document

See the [Hazardous Waste Inventory Form: Completed Example](#) to see how to keep a hazardous waste inventory if you do not already have one.

7.0 Disposal or Recycling

Disposal of waste rags and sorbents may be arranged through the MMBU Environmental Technical Specialist. For more specific information, see [WM-220 – Hazardous Waste Disposal](#).

Recycling of rags can also be arranged through companies that specialize in supplying clean rags and picking up waste rags. The rags are recycled through a special process that extracts and recovers the oil contained in the rag.

Ozone Depleting Substances and Other Halocarbons

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1.0 Introduction

1.1 Scope

This standard applies to ozone-depleting substances and other halocarbons used:

- in air conditioning or refrigeration equipment, and
- as solvents

1.2 Definition of Terms

Ozone-depleting substances (ODS) are substances listed in [Class I or II of Schedule A](#) of the *BC Ozone Depleting Substances and Other Halocarbons Regulation*.

All ODS listed in Class I or II of Schedule A are carbon compounds containing chlorine or bromine.

Other halocarbons (HC) are substances listed in [Class III of Schedule A](#) of the *BC Ozone Depleting Substances and Other Halocarbons Regulation*.

All other HC listed in Class III of Schedule A are carbon compounds containing fluorine but no chlorine or bromine.

ODS/HC means ozone-depleting substances and/or other halocarbons as defined above.

1.3 Background

ODS have been found to destroy the earth's stratospheric ozone layer. ODS, and materials that contained them in the past, include chlorofluorocarbons (CFCs), halons, foams, solvents, and substitute refrigerants, or hydrochlorofluorocarbons (HCFCs).

Other HC are not considered to deplete ozone. However, like SF₆, they last a long time in the atmosphere and are significant greenhouse gases.

Examples of applications at BC Hydro that use ODS/HC include:

- fire extinguishers and fire suppression systems
- refrigeration and cooling systems, including building and vehicle air conditioners, and
- in the past, some solvents such as Chlorethene VG or Dowclene CS

BC Hydro is committed to avoiding the release of ODS/HC to the atmosphere while maintaining responsible use of existing systems using these materials where no reasonable alternative exists.

1.4 Related Standards and Instructions

The use of halon in fire suppression systems is covered in:

- [WM-520 – Halon](#)

For information on the use of alternative solvents, refer to the [Solvent EBMP](#) and work instructions for your Line of Business/Business Unit.

1.5 Legislation

ODS/HC are regulated by the following provincial acts and regulations:

- *Environment Management Act*
- *Ozone Depleting Substances and Other Halocarbons Regulation*, and
- *Spill Reporting Regulation*

ODS/HC are regulated by the following federal acts and regulations:

- *Canadian Environmental Protection Act*
- *Ozone Depleting Substances Regulation*, and
- when transported, the *Transportation of Dangerous Goods Regulations*

2.0 Ban on Use of Chlorinated Solvents

On January 1, 1994, BC Hydro stopped using solvents containing:

- trichloroethane, such as Chlorethene VG or Dowclene CS, and
- tetrachloromethane, also known as carbon tetrachloride

The use of these solvents is now banned under the BC *Ozone Depleting Substances and Other Halocarbons Regulation*. Waste solvents must be disposed of as hazardous waste. Contact the [MMBU Environmental Technical Specialist](#) to arrange for disposal.

3.0 General Compliance

BC Hydro will comply with all federal and provincial regulations and guidelines on the use, maintenance, and disposal of all ODS/HC, and all materials and equipment containing ODS/HC.

BC Hydro will not release ODS/HC into the environment, unless permitted by the governing regulations or required by other government enactment. Potential sources of ODS/HC include:

- air conditioning or refrigeration equipment
- motor vehicle air conditioners
- fire extinguishing equipment
- equipment used to re-use, recycle, reclaim, or store ODS/HC, or
- solvents containing ODS/HC

In addition, BC Hydro will:

- not add ODS/HC to leaking equipment or containers
- not store ODS/HC or destroy ODS/HC equipment or containers in a way that releases ODS/HC into the environment, and
- ship any ODS/HC that can no longer be used to a permitted hazardous waste storage facility (such as Salvage Warehouse M, previously known as Store 12) where disposal can be arranged

4.0 Prevention of ODS/HC Releases

4.1 System Design and Installation

All BC Hydro chiller and refrigeration systems should be designed to minimize losses of ODS/HC. The main design and installation requirements of the [Code of Practice for the Reduction of Chlorofluorocarbon Emissions from Refrigeration and Air Conditioning Systems](#) are summarized below.

<i>Avoidance of Vibration</i>	Minimize vibration in compressors, condensers, evaporators, and piping by secure anchoring and/or damping. Where vibration cannot be avoided, make sure there is flexibility in piping design to allow for movement without resulting in pipe failure.
<i>Piping Joints</i>	Minimize joints in piping. Wherever possible, use welded or brazed connections. If other types of connections are necessary, use compression fittings or flanges with gaskets specifically selected for the refrigerant in the system. Do not use flare fittings. Eliminate threaded fittings wherever possible (for example, back-weld threaded flanges).
<i>Filters</i>	To avoid damage to mechanical seals in compressors, use filters to keep compressor oil and refrigerant clean.
<i>Isolation Valves</i>	Make sure equipment is installed with back-seating isolation valves to minimize losses when individual items are serviced.

Note: Back-seating valves are designed so that the back-side of the valve plug seals against the underside of the valve bonnet when the valve is fully open. This allows tightening or replacement of the stem packing while the system is in service.

Note: Any system section that can be shut in must be equipped with pressure relief devices according to applicable codes.

<i>Pressure Relief Devices</i>	Use pressure devices that reseal automatically to prevent the loss of the entire charge after pressure is relieved. The valve must be set to relieve at the pressure required by applicable codes, but should be well above any pressure to be expected during normal operation, including start-up and shutdown.
<i>Recovery of ODS/HC from Compressor Oil</i>	Provide facilities to allow for removal of ODS/HC from compressor oil where oil changes are required.

Air Purgers Use high-efficiency, near-zero-emission purgers on systems that require a purge to remove air or other non-condensable gases.

System Charging Make sure that the system is properly cleaned, dried, leak-tested and evacuated before any ODS/HC are charged.

4.2 System Operation

Inspections and Leak-Testing Carry out regular inspection and leak-testing on chiller and refrigeration systems at intervals according to manufacturers' specifications. Unless specified otherwise, inspect compressors at least twice per year. Inspections should include checks for excessive vibration.

Detection of Emissions Use permanently installed monitors and alarms to detect emissions of ODS/HC in mechanical rooms for chiller or refrigeration systems.

Water Treatment To avoid corrosion that might lead to piping failure, make sure that water is properly treated in chiller and refrigeration systems.

4.3 Equipment Maintenance

Recovery Equipment When performing maintenance, use recovery equipment that at least meets the performance standards in Schedule B of the *BC Ozone Depleting Substances and Other Halocarbons Regulation*.

ODS/HC Additions Make sure that any serviced part of a system is properly cleaned, dried, leak-tested, and evacuated before any ODS/HC are charged.

Test for and fix any leaks before making up for lost ODS/HC. Do not use ODS/HC for leak-testing.

Use short charging hoses equipped with valves or self-closing quick connects at either end.

Replacement of Valve Caps Replace caps on services valves after carrying out maintenance.

Vehicle Air Conditioners Vehicle air conditioners must be serviced as set out in:

- the [*Code of Practice for the Reduction of Chlorofluorocarbon Emissions from Refrigeration and Air Conditioning Systems*](#), and
- SAE Standard J-1989 (for air conditioners containing R-12) or SAE Standard J-2211 (for air conditioners containing R-134a)

The equipment used to perform the servicing must meet the requirements of

- SAE Standards *J-1990* and *J-2209* (for handling R-12), or
- SAE Standard *J-2210* (for handling R-134a)

4.4 Training

All BC Hydro employees or hired contractors who purchase or possess ODS/HC for servicing air conditioners, refrigeration equipment, or motor vehicle air conditioners must have successfully completed an approved course in handling ODS/HC.

Training courses endorsed by Environment Canada and the BC Ministry of Environment are available through the Heating Refrigeration and Air-conditioning Institute, and local community colleges.

Records of all approved persons must be maintained and made available to regulatory agencies, including the persons' registration number, and the name and date the course was completed.

Only BC Hydro employees or hired contractors who have successfully completed an approved course may service air conditioners, refrigeration equipment, and auto air conditioners.

4.5 Labelling and Service Log

All new BC Hydro equipment containing ODS/HC, and existing equipment that is being serviced, must be properly labelled. The labels must indicate the type and amount of ODS/HC in the equipment.

Any person servicing the equipment, whether a BC Hydro employee or a contractor, must record on the equipment label and in a service log:

- the results of any leak tests
- the type, amount, and date of any ODS/HC addition or removal
- that the equipment or vehicle does not contain ODS/HC if it has been evacuated
- the name and registration number of the service person who performed the work, and
- the name of the business employing the service person

The service log must show service details over at least the preceding 36 months and must be made available to regulatory agencies on request.

5.0 Disposal

Air conditioning or refrigeration equipment must not be disposed of unless:

- the ODS/HC have been recovered from the equipment using recovery equipment that meets or exceeds the performance standards set out in Schedule B of the *BC Ozone Depleting Substances and Other Halocarbons Regulation*, or
- the equipment containing the ODS/HC is delivered to a site or facility approved for removal of ODS/HC

All ODS/HC purchased in containers (not part of or contained in equipment) can be returned to the seller for disposal, as long as the product is unused and proof of purchase can be supplied.

Since ODS/HC can be a hazardous waste either as a compressed gas or a hazardous substance, contact your [environmental services](#) group or the MMBU [Environmental Technical Specialist](#) for assistance in classifying the waste ODS/HC.

6.0 ODS/HC Release or Spill

The quantities of ODS/HC or mixtures of ODS/HC released or spilled that must be reported to the Provincial Emergency Program at 1-800-663-3456 (24-hour telephone number) are:

- more than 1 kg of tetrachloromethane (also known as carbon tetrachloride or R-10)
- more than 5 kg of trichloroethane, or
- more than 10 kg of any other ODS/HC

Reporting is required, regardless of the reason for the release.

Waste Oil

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1.0 Introduction

1.1 Scope

This standard outlines procedures for classifying, handling, and disposing of waste oil other than:

- waste insulating oil
- waste oil that is in any class under the *Transportation of Dangerous Goods (TDG) Regulations*, or
- oily rags and sorbents

Management of waste insulating oil is covered in the [Insulating Oil EBMP](#).

Contact your [environmental services](#) group for help in managing waste oil that is TDG regulated or see the appropriate hazardous waste management standard.

See [WM-460 – Waste Rags and Sorbents](#) for management of oily rags and sorbents.

1.2 Definition

Waste oil means a waste that is, or that contains more than, three percent by weight (30,000 ppm) of oil, where the oil has become unsuitable for its original purpose owing to the presence of impurities or loss of original properties as a result of use, storage, or handling.

Under the *Hazardous Waste Regulation* waste oil is *hazardous waste*.

Types of oil the definition applies to are:

- automotive lubricating oil
- cutting oil
- fuel oil
- gear oil
- hydraulic oil, or
- any other refined petroleum-based oil or synthetic oil

Some examples of waste oil covered by this standard include:

- waste vehicle/lube oil and oil filters
- waste diesel with flash point over 60 °C
- waste power generation lube oil
- soil containing more than three percent oil by weight, or
- oily water containing more than three percent oil by weight

2.0 Testing

2.1 Characterization

Characterize waste oil from time to time or if contamination with solvent or other flammable liquid is suspected. Characterization involves sampling the waste oil and having it analyzed to verify its makeup or properties.

An important reason for characterization is to check that waste oil is properly classified. This is necessary to make sure that it is handled, documented and disposed of in accordance with the regulations. Characterization might also be used to see if a specific waste oil could be used as a fuel in industrial applications.

Possible analyses to properly characterize waste oil include:

- total metals
- PCBs
- total organic halogens
- flash point

Contact your [environmental services](#) group for guidance on which analyses are appropriate for a specific waste oil.

2.2 Sampling

Collect samples in an appropriate container of sufficient size for the analyses required. For example, for a total metals test, use a clean 100 mL sample bottle. Before collecting a sample, get information on sample size and a supply of sample containers from the laboratory.

The following information is usually required on each sample label:

- sample date
- name of sampler
- phone number
- sample identification
- analysis requested

Complete a chain of custody form and send the sample to the laboratory. Do not send the package by Canada Post.

If you are using Powertech Labs, call 604-590-7448 to get sample containers and a chain of custody form. Send the samples to:

Powertech Labs Inc.
 Environmental Laboratory
 12388 88th Ave
 Surrey BC V3W 7R7

See [WM-250 – Hazardous Waste Testing](#) for more information, including information on packing and shipping samples.

2.3 Classification

Classification of hazardous wastes is the process of assigning a waste to its correct type according to the definitions in the *Hazardous Waste Regulation* and in some cases, the *Transportation of Dangerous Goods (TDG) Regulations*.

For example, Non-Integrated Areas diesel generating stations use diesel fuel with a flash point less than 60 °C. This diesel is a flammable liquid in Class 3 under the *TDG Regulations*. Waste diesel of this type is therefore a waste flammable liquid in Class 3. Wastes in any TDG Class are not within the scope of this standard.

The classification of waste oil from a particular source must be based on the most recent analytical results from that source.

3.0 Hazardous Waste Regulation Requirements

Figure 1 summarizes the requirements for waste oil under the *Hazardous Waste Regulation*.

Figure 1: Hazardous Waste Regulation Requirements for Waste Oil

Waste	Registration Required	Store in Compliance with Regulation	Waste Manifest Required to Transport	Transport Licence Required to Transport	
				BC Hydro	Contractor
Waste Oil ¹	≥5,000 L	≥5,000 L	≥210 L	≥5,000 L	≥210 L

¹Includes solids containing more than three percent oil. See 1.2, [Definition](#).

See [WM-230 – Hazardous Waste Registration](#) for information on completing a Generator Registration Form.

4.0 Transportation

Figure 2 summarizes the requirements for transporting waste oil by road. See [WM-260 – Hazardous Waste Transportation](#) for detailed information on transport.

Figure 2: Requirements for Transporting Waste Oil by Road

Shipping Name	Class	UN Number	Packing Group	TDG Hazard Label	Placard Quantity ¹	Manifest Quantity ²	Transport Licence Quantity ³	
							BC Hydro	Contractor
Waste Oil ⁴	None	Not applicable	Not applicable	Not applicable	Not applicable	≥ 210 L	≥ 5,000 L	≥ 210 L

¹Quantity that requires placards to be displayed when transported.

²Quantity that requires a manifest when transported.

³Quantity that requires a transport licence when transported by road.

⁴Includes solids containing more than three percent oil. See 1.2, [Definition](#).

5.0 Storage

Arrange for regular disposal or recycling to avoid accumulating large quantities of waste oil. All requirements of the *Hazardous Waste (HW) Regulation* apply to storage of more than the *registration quantity* of waste oil.

The registration quantity for waste oil is 5,000 L.

Note: It is extremely important to keep waste oil separate from other wastes such as solvents and degreasers. Mixing different types of wastes may result in much higher analytical and disposal costs.

5.1 Less than Registration Quantities

Store waste oil in a dedicated storage area separated from new oil storage using the following guidelines:

Containers

Containers must be:

- compatible with the waste oil
- closed at all times during storage
- handled, stored, or transported to avoid causing leaks or ruptures

For liquid waste oil, use leak-tight steel or plastic drums in good condition that have tight-fitting bungs.

Location Store waste oil:

- in a designated area which is identified with signs
- away from traffic
- away from drains and watercourses

If storage near drains or watercourses cannot be avoided, make sure they are protected—for example, seal floor drains or use a cover over storm drains.

Containment If possible, use containment trays, curbed rooms, or transportable storage containers (TSCs) with spill trays for storage facilities. Storage facility floors should have an oil-resistant non-absorbent finish.

Storage Arrangement Place containers of the same type of waste oil together. Store drums in an upright, vertical position. Do not stack drums more than two high. Use pallets between layers.

Arrange all containers so they can be easily inspected for leaks (for example, put containers on pallets with aisle space between the pallets).

Weather Protection Protect waste oil storage drums from extreme temperatures, wet weather and humid conditions. If you cannot store the waste oil under roof, keep a UV-resistant nylon or polypropylene tarp over the waste, or use drum covers to prevent water accumulation. Cover containers in trays with a tarp to prevent rain or snow accumulating in the tray.

Protect waste oil that is oily water from freezing.

Access Restrict site access during non-working hours.

Labelling Label each container on the side facing outwards with a BC Hydro waste label. BC Hydro waste labels are available from the Main Distribution Centre (previously known as Store 12) in packs of ten—stock number 227-0357.

Enter the following on the waste label:

- ID number to keep track of the waste container for inventory purposes. If this box is not on the label, write the container ID on the top right of the label
- Waste Oil as the TDG shipping name
- N/A or Not applicable for TDG PIN, Class and Packing Group
- location from where the waste oil is being shipped. Complete at time of shipping
- container number (e.g. Container 1 of 3). Complete at time of shipping

- name of the person who is completing the label/filling the waste container
- where the waste was generated (can be equipment or station)
- actual date the waste container was filled and the label was completed (use the start date if the container is filled over time)
- phone number of person completing the label and filling the waste container
- contents of the container (especially if this is not well described by the shipping name, for example waste lube oil or waste governor oil), with check mark as applicable to indicate physical state (solid or liquid)
- check mark as applicable to indicate type of waste oil (lubricating or hydraulic)
- PCB levels and Lab Report # - usually N/A or not applicable for lubricating or hydraulic oil
- station ID code for the facility (station, plant or district office)
- equipment ID code - usually N/A or not applicable for lubricating or hydraulic oil
- spill address or EIR - Environmental Incident Report number if the waste oil is related to a spill

Figure 3: Example Waste Oil Label

BChydro 		WASTE LABEL		CONTAINER ID: WO 113
Shipping Information (TDG)				
TDG Shipping Name: <u>WASTE OIL</u>				
TDG PIN: UN <u>N/A</u>		TDG CLASS: <u>N/A</u>		Packing Group: <u>N/A</u>
Shipped From: <u>1155 MCGILL RD, KAMLOOPS, BC</u>			Container <u>1</u> of <u>1</u>	
Waste Origin Information				
Produced By: <u>JOE SMITH</u>		Date Produced: <u>10</u> - <u>16</u> 20 <u>09</u>		
Produced From: <u>KAMLOOPS DISTRICT OFFICE</u>		Phone: (<u>250</u>) <u>308</u> - <u>8116</u>		
Waste Information (Refer to MSDS if applicable)				
Waste Description: <u>WASTE CLEAN UP IN YARD</u>		WASTE OIL (required information)		
SOLID <input type="checkbox"/>		LIQUID <input checked="" type="checkbox"/>		GAS <input type="checkbox"/>
SLUDGE <input type="checkbox"/>		Insulating _____ Lubricating <input checked="" type="checkbox"/> Hydraulic _____		
Comments: _____		PCB levels: <u>N/A</u> (ppm)		
		Lab Report # <u>N/A</u>		
		FACILITY SOURCE:		
		Station ID: <u>KAM</u> Equip ID: <u>N/A</u>		
		Spill Location: <u>N/A</u> (if applicable)		
CONTACT ENVIRONMENTAL SPECIALIST FOR ASSISTANCE: 804-590-7535 / 804-590-7571 to order: BCH Stock #222-0357				

Inventory Keep an inventory of waste oil on-site at all times and for two years following its removal from the site.

For each container received or generated, record:

- date received or placed in storage
- ID number
- type of container (for example, bin, drum or pail)
- if received on a shipping document or waste manifest, the number of that document
- contents of the container (especially if this is not well described by the shipping name)
- shipping name (waste oil)
- UN number (not applicable)
- physical state (solid, liquid, or combination)
- quantity of waste in kilograms or litres (if waste is added to a partly filled container, record the total quantity on the container after addition, not the quantity added)
- location of the container within the facility

For each container shipped or re-packaged, record:

- date shipped or re-packaged
- if shipped on a shipping document or waste manifest, the number of that document

See the [Hazardous Waste Inventory Form: Completed Example](#) to see how to keep a hazardous waste inventory if you do not already have one.

Fire Protection

There are many Fire Code requirements for storing flammable or combustible materials, especially inside buildings. The details are beyond the scope of this standard. Make sure that any storage area is approved by the BC Hydro Fire Marshall.

Emergency Planning

Make sure that key employees are trained in spill response, maintain an updated *Product Spill Response Plan*, and keep spill clean-up kits near the stored waste oil.

Inspections

Inspect storage facilities monthly or as per the site's scheduled inspection plan. At minimum:

- inspect pallets for damage
- check containers for leaks, damages, or patches
- put leaking or damaged containers in an overbarrel or transfer them to a sound container
- check the integrity of the containment structure
- document the inspection and report the findings

5.2 **More than Registration Quantities**

All requirements of the *HW Regulation* apply to storage of more than 5,000 L of waste oil.

Contact your [environmental services](#) group to get help in determining how they should be implemented.

6.0 **Recycling and Disposal**

6.1 **Prohibited Practices**

Mixing or blending waste oil with any liquid or solid to avoid the *Hazardous Waste (HW) Regulation* is prohibited.

Discharging oil to land or water may constitute an offence under the *Environmental Management Act* and *Fisheries Act*. Possible sources include:

- oily blowdown (such as compressors or driers)
- service pit drains
- leaking equipment or containers
- oil-contaminated runoff
- vehicle wash facilities
- improperly maintained sumps and oil water separators, including the use of detergents or cleaners in areas draining to a separator
- leaking oil in storage

6.2 **Hierarchy for Managing Waste Oil**

Managing waste oil must be consistent with BC Hydro's corporate policy and comprehensive waste strategy. The preferred hierarchy for managing waste oil is as follows:

- reduce
- re-refine (reuse)
- recycle
- use as a fuel
- dispose of in an environmentally safe manner

Disposal or recycling of waste oil (and any other hazardous waste) should be coordinated through the MMBU Environmental Technical Specialist. Disposal information must be sent to the MMBU Environmental Technical Specialist for tracking purposes.

Reduce Where possible, evaluate the feasibility of using alternative products to reduce potential environmental impacts from mineral or petroleum based oils. Contact your [environmental services](#) group for information on these alternatives.

Re-Refine Newalta Corp (previously known as Mohawk Lubricants) re-refines waste oil, provided that the oil does not contain any contaminant above the level listed in Figure 3.

Figure 3: Newalta Acceptance Criteria for Re-Refining Waste Oil

Parameter	Acceptance Criteria	Typical Sources
Water	<10 % by volume	Emulsified cutting oils
Fuel	<10 % by volume	Gasoline, diesel, aviation fuel
PCBs	<1 ppm	
Animal or vegetable fats	Pass in-house test	
Phosphorus	<0.3 % by weight	Phosphate ester synthetic fluids, fire-resistant hydraulic fluids
Silicon	< 200 ppm	Silicon anti-foam
Chromium	< 40 ppm	
Lead	< 200 ppm	Gear oils containing lead, leadolene
Vanadium	< 2 ppm	Bunker oils
Titanium + nickel	< 4 ppm	

If the waste oil is suspected of containing any of these products, arrange for alternative recycling and disposal options.

Recycle One method of recycling waste oil is to use it for making pavement. The *HW Regulation* allows waste oil to be used for this purpose if it meets the specifications in Figure 4.

Figure 4: BC Specifications for Waste Oil Used to Make Pavement

<i>Parameter</i>	<i>Allowable Level</i>
Flash point	60 °C minimum
Arsenic (total)	20 mg/L maximum
Cadmium (total)	3.0 mg/L maximum
Total organic halogens (as Cl)	2,000 mg/L maximum
Chromium (total)	10 mg/L maximum
Lead (total)	1,000 mg/L maximum
PCBs (total)	5.0 mg/L maximum
Zinc (total)	1,000 mg/L maximum

Use as a Fuel

The *HW Regulation* allows waste oil to be used as a fuel (for example, in heaters at DGS facilities) if it meets the specifications in Figure 5. Waste oil used for this purpose may not be mixed, blended, or sold for use as a fuel unless it has been analyzed and meets the specifications.

Figure 5: BC Specifications for Waste Oil Combustion as a Fuel

<i>Parameter</i>	<i>Cement Kiln Allowable Level (maximum)</i>	<i>Other Allowable Level (maximum)</i>
Arsenic (total)	20 mg/L	5.0 mg/L
Cadmium (total)	3.0 mg/L	2.0 mg/L
Total organic halogens (as Cl)	3,000 mg/L	1,500 mg/L
Chromium (total)	10 mg/L	10 mg/L
Lead (total)	1,000 mg/L	50 mg/L
PCBs (total)	500 mg/L	3.0 mg/L

Disposal in an Environmentally Safe Manner

Waste oil can be disposed of through a licensed hazardous waste disposal company. As noted previously, disposal of waste oil and any other hazardous waste must be coordinated and tracked by the MMBU Environmental Technical Specialist.

7.0 Spills

7.1 Prevention

Oil spills can result in considerable contamination and cost. By making spill prevention, containment, and contingency planning part of regular operations, the amount of oil-contaminated soil produced from spills can be minimized.

7.2 Response

In event of a spill, follow the steps in [Spill Response for Oil Based Materials](#).

Notify the Provincial Emergency Program (PEP) by calling 1-800-663-3456 (24-hour) for:

- more than 100 L of waste oil spilled to land
- any quantity of waste oil spilled into water or into something directly connected to water such as a storm drain or ditch
- any quantity of waste oil spilled to land where there is potential for the spill to reach water

If reporting a spill to water or land where there is potential for the spill to reach water, confirm that PEP will notify Environment Canada.

Land where there is potential for the spill to reach water means land from which a spill could enter water or fish habitat, where:

- water means all water in the fishing zones of Canada, all waters in the territorial sea of Canada and all internal waters of Canada, and
- fish habitat means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes [*Fisheries Act* section 34]

Fish habitat can include areas that never contain fish (for example dry ditches) but that, at some time of year, have a direct connection by surface flow or by storm drain, with water that does or may contain fish.

As a guideline, fish habitat includes the area extending 15 metres inland from the top of bank of any watercourse that contains or supports fish including swamps, wetlands, tributaries, side channels or intermittently wetted areas.

Solid Waste – General

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1.0 Introduction

1.1 Scope

This standard provides general information on management of non-hazardous solid waste.

1.2 Background

Through its daily activities, BC Hydro generates recyclable and non-recyclable wastes such as those listed in Figure 1.

Figure 1: Examples of Wastes Generated Daily by BC Hydro

<i>In the office...</i>	<i>In the field...</i>
Paper	Wood pallets
Cardboard	Ceramics
Toner cartridges	Scrap metals
Cafeteria organics	Tree trimmings, vegetation waste, and reservoir debris
Fluorescent tubes	Woodpoles, cross-arms, and treated wood
Cans and bottles	Tires
E-waste (computer CPUs, monitors, etc.)	Construction and demolition materials

1.3 Legislation

In British Columbia, the management of all wastes is regulated under the *Environmental Management Act (EMA)* and associated regulations. Discharge of waste that causes pollution or that comes from *prescribed* industries or activities is prohibited unless the discharge is authorized or exempted by the *EMA* or regulations under the *EMA*.

The *Waste Discharge Regulation* defines prescribed industries and activities.

1.4 Definition

In this standard, *authorized* means authorized under the *EMA* by a valid permit, approval, or order, or by a waste management plan approved by the Minister of the Environment.

2.0 Solid Waste Disposal

2.1 Authorized Landfills

Non-hazardous waste may be disposed of at authorized landfills. Landfills may be operated by municipalities, regional districts, or private operators.

Landfills typically have acceptance criteria defining which types of waste they can accept. Some municipal landfills will not accept metals, appliances, tires, or demolition waste such as drywall or woodwaste. To encourage recycling, some jurisdictions may impose bans on materials such as cardboard or pallets.

Note: For non-routine solid waste disposal, contact the landfill operator to find out if the waste can be accepted.

2.2 Locations without Authorization

Disposal without authorization of wastes other than vegetation waste is prohibited on lands under provincial jurisdiction. This includes inert demolition wastes such as concrete, woodwaste, asphalt, equipment, and vehicle parts.

Written permission for on-site burial may be obtained from the Ministry of Environment if shipping waste to a local landfill is not feasible. The Ministry may authorize on-site burial by issuing a formal approval or permit under the *EMA*. Specific conditions may apply. For assistance in applying for a waste disposal authorization, contact your [environmental services](#) group.

2.3 Refuse Burning

The burning of solid waste is prohibited unless:

- it is conducted in accordance with the *Open Burning Smoke Control Regulation* issued under the *EMA*, or
- specifically authorized by the Ministry of Environment

Note: Burning may also require approval from other non-environmental authorities such as the Ministry of Forests.

The *Open Burning Smoke Control Regulation* is directed at the burning of wood debris from land clearing and forest harvesting.

Burning of reservoir debris may require authorization, depending on the policy of the regional office of the Ministry of Environment.

The regulation prohibits burning of the following materials:

- tires
- plastics
- drywall
- demolition waste
- domestic waste
- paint
- hazardous waste
- tar paper
- treated lumber
- railway ties
- manure
- rubber
- asphalt
- asphalt products
- fuel and lubricant containers
- biomedical waste

2.4 Vegetation Wastes

The *Waste Discharge Regulation* allows disposal of vegetation wastes such as chips from tree pruning, brushing and felling operations, and tree stems and rounds, without obtaining an authorization, providing they are used as:

- plant mulch, foundation material for animal bedding or in sports areas
- soil conditioner or ground cover in non-agricultural operations, applied in accordance with good agronomic practices and at a rate of less than 100 m³ per year on a single property, or
- foundation material at construction sites, applied under the direction of a professional engineer

2.5 Scrap Materials

Disposal of scrap materials generated by capital projects or operations must be coordinated through the [MMBU](#) to make sure that proper hazard assessment and tender procedures are followed. Examples of scrap materials are: treated wood, construction or demolition waste, obsolete hardware, electrical equipment, scrap metal, or ceramics.

Note: Using the MMBU does not necessarily require shipping to the Lower Mainland.

2.6 Out-of-Service Woodpoles

See the [Woodpoles](#) EBMP for information on woodpoles.

3.0 Waste Management Hierarchy

In order of preference, the options for managing waste materials are:

- reduction
- re-use
- recycling
- recovery of energy, or
- residual management

Contact the Investment Recovery Hazardous Waste Coordinator to find out whether recycling programs are available for all waste types. If you have ideas for re-using or recycling materials, bring them to the attention of your [environmental services](#) group.

3.1 *Reduction*

Avoid creating the waste where possible. Reduce waste volumes by choosing products and packaging that minimize waste such as:

- sending e-mail versus hard copy
- using double-sided photocopies, and
- purchasing durable goods

3.2 *Re-Use*

Re-use materials such as re-furbished line hardware and re-manufactured toner cartridges.

3.3 *Recycling*

Re-furbish or re-process material so that the product can be re-used. The following are some examples:

- woodpoles cut into lumber
- insulators crushed for road aggregate
- tree trimmings mulched and used as a soil conditioner
- cafeteria organics sent to compost, and
- metals shipped to smelting operations

Note: Before obtaining the services of an external waste recycling or waste recovery contractor, ensure the recycler has obtained all necessary licenses or permits to conduct its operations, and that the services provided are consistent with sound environmental practices.

Contact your [environmental services](#) group for assistance in evaluating a particular operation.

3.4 Recovery of Energy

Use waste as fuel. For example, burn hog fuel at co-generation plants.

3.5 Residual Management

Ensure proper disposal of residue in accordance with provincial and federal legislation, and regional and local bylaws.