

BEST MANAGEMENT PRACTICES FOR THE AUTOMOTIVE SECTOR

AUTO REPAIR SHOPS



ROCK BAY CONTAMINANT REDUCTION PROJECT



DISCLAIMER

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Introduction

Best Management Practices – What?

Best Management Practices (BMPs) are the procedures and guidelines a business can follow to ensure their operations are efficient, comply with legal requirements and prevent pollution. There are two types of BMPs:

1. Source control BMPs prevent pollution by reducing the potential for contaminants to enter the environment at the source;
2. Treatment BMPs physically remove pollutants from contaminated media such as stormwater (e.g. Oil/water separators.)

**“Streams, lakes,
wetlands,
groundwater – play
an important role in
the quality of life we
enjoy.”**

BMPs are developed for specific business types. As the most appropriate procedures can depend on site-specific situations, BMPs are flexible tools for identifying actions that can be implemented to best suite the individual facilities.

Best Management Practices – Why?

It is necessary to adopt Best Management Practices in order to protect our water bodies – streams, lakes, wetlands, groundwater, aquifers and marine areas– that play an important role in the quality of life we enjoy. These bodies of water provide us with recreation and drinking water in addition to supporting sport and commercial fisheries, tourism and a healthy environment. Unfortunately, these water sources are vulnerable to pollution from a variety of human activities that channel contaminants through a network of storm drains, or directly to groundwater.

One scope of human activity that is of increasing concern lies with the quality of “stormwater” or “urban runoff” from public facilities, commercial and industrial businesses and agricultural lands. As the water flows over the ground and off buildings, it can pick up toxic chemicals, oil and grease, pesticides, metals and other contaminants that contribute to pollution.

Contamination in this manner poses an increasing threat to public health and to the environment.

“Financially and ethically it makes sense to practice pollution prevention.”

A major contributor to water pollution are practices of the automotive industry, as oil and grease – in addition to harsh cleaners, paints and other chemicals – are washed down storm drains. Small businesses in the auto sector often lack the resources necessary to keep up with new technologies and industrial practices in pollution prevention. If new developments are ignored, however, opportunities may be missed to reduce pollutant loading to air, land and water. In addition, many auto businesses may find themselves at a competitive disadvantage. For instance, improper handling and disposal techniques result in site contamination, which is costly to remediate, depreciates the business and is subject to fines through environmental acts.

Success Story

The supervisor at a maintenance shop in Alberta noticed that the valves on three bulk lubricant containers were dripping. The supervisor placed drip trays beneath the valves to measure the amount of fluid being spilled. After two weeks, 20 liters had been collected in the drip trays. By installing three new valves at a cost \$30/valve, the supervisor was able to save over \$600/year. The payback period for installing the valves was less than two months.

Automotive businesses that manage their wastes properly and try to decrease the amount of waste they produce benefit the world around them by lowering the amount of contaminants entering the environment. As well, business competitiveness can often be increased through greater efficiency, better energy use and enhanced public image (the last is of increasing importance). Financially and ethically it makes sense to practice pollution prevention.

Best Management Practices – Benefits!

BMPs can help you to reduce liability. By using BMPs you can reduce the risk and cost of property damage, site contamination, spill clean-ups and fines for violations.

BMPs can be used to improve your public image. Many customers prefer environmentally friendly products and services when the choice is offered – don't be left behind!

BMPs protect the environment. By using BMPs you can prevent contaminants from reaching the environment through groundwater or stormwater runoff.

BMPs can help you save money. For example, replacing leaky valves on containers can reduce the loss of materials. Also, substituting non-hazardous materials for hazardous materials may lead to lowered disposal costs.

Success Story

The manager of a paint and auto body shop in Alberta had been keeping an eye on new advances in spray equipment and decided to purchase new primer guns and paint guns. The new equipment was designed to reduce the volume of paint required by reducing overspray. To verify the effectiveness of the costly new equipment, the shop manager decided to measure the changes in his paint consumption. He tracked all paint materials purchased over a two-month period and found that the new equipment reduced paint consumption by more than 32%. These savings more than justified the cost of the new equipment.

How to Use this Manual

Step 1: You, the owner, read information regarding your sector and get your staff to read it too.

Step 2: You and/or your staff get involved
Everyone in the shop should be aware of the importance of BMPs and should be encouraged to participate. Staff can help to identify potential sources of contamination and provide input to selection of the most appropriate BMPs.

Step 3: Conduct a Self-Assessment to identify potential sources of contamination. This can be as simple as walking through your shop and answering yes/no questions. Refer to the assessment provided at the end of each section in this manual.

“All businesses that handle material that could potentially contaminate the environment should have an emergency spill clean-up plan in place.”

Suggested Spill Clean-up Kit:

- Salvage drums/containers such as high density polyethylene, polypropylene or polyethylene sheet lined steel
- Polyethylene disposal bags or equivalent
- Emergency response guidebook
- Safety gloves/clothes/equipment
- Shovels or other soil remove equipment
- Absorbent pads and oil containment booms, stored in an impervious container
- Granular or powdered materials for neutralizing acids or alkaline liquids.

Step 4: Develop a pollution prevention plan.

Step 5: Put your plan into action.

Step 6: Monitor your progress. Your BMP program is a continuous process. You should evaluate the success of the program at regular intervals. For example, tracking the changes in waste management methods and costs.

Step 7: For assistance call the Burnside Gorge Community Association (BGCA) at 388-5251. Comments and suggestions for improvement to this manual are also welcome through BGCA.

This guide provides:

1. A Resource Guide that contains information about people and businesses that are able to provide assistance with BMPs.
2. Self-Assessment Checklists to evaluate your current waste management and waste minimization practices as well as pinpointing problem areas.
3. BMPs for each sector of the automobile industry including:
 - Automotive repair shops
 - Automotive body shops
 - Automotive detailing shops
 - Automotive dealers
 - Service stations
 - Car washes
 - Auto recyclers
4. Emergency spill clean-up plans.

Best Management Practices For Automotive Maintenance and Repair Shops

BMP #1 - Catch Basin Maintenance

Catch basins located on private property are the responsibility of the landowner. They are most often located below grating and allow sediment in the storm water to settle out. Routine maintenance is necessary to sustain the catch basin's effectiveness. If a catch basin is not cleaned frequently, the contaminants may reach concentrations where the sludge is considered a Controlled or Special Waste and disposal is expensive. If the catch basin becomes full, debris may accumulate in the outlet and the drain will flood. As well, it will be considerably more expensive to have cleaned.

Housekeeping

- Locate any catch basins on your property and be aware that it is your responsibility to maintain them.
- Clean catch basins at least twice a year, in the spring and late fall. They should also be cleaned as required after spills.
- Monitor levels in the catch basin; they should be cleaned out before deposits fill 60% of area below the outlet pipe.
- Don't ignore catch basins on your property - if they get full, the outlet pipe will become plugged and water will not drain from your property.
- Stencil yellow fish beside storm water drains.

BMP #2 - Employee Training

Employee training is vital because they are responsible for handling the materials, operating and monitoring equipment, loading and unloading hazardous materials and purchasing, storing and transporting chemicals.

Training

- Employees need to be trained before they begin handling and disposing of hazardous materials. Ensure all requirements are met.
- Employees need to be trained on the job whenever new procedures or new equipment is implemented.

What Employees Should Be Aware Of

- Know the site layout and the drainage pattern.
- Know potential sources of contamination.
- Employees need to be familiar with the hazards that accompany the materials they are using. (Check Material Safety Data Sheets - MSDS)

- Know the proper use, maintenance and inspection of interceptors and catch basins.

Spill Clean-Up

- Provide a summary of spill clean-up procedures that will be posted at appropriate points throughout the workplace. The summary should identify the spill clean-up coordinators, the location of clean-up kits and important phone numbers.

BMP #3 - Floor Cleaning Waste Water

Wastewater from floor washing can contain heavy metals, oil, grease and other contaminants.

Housekeeping

- Keep the floor clean - catch leaks and place the liquid in appropriate containers.
- If a small spill occurs, clean it up immediately with industrial absorbent material or shop towels. (Never clean spills by hosing them down with water).
- Use dry floor cleaning methods. (This includes sweeping and vacuuming).
- Use non-toxic soaps to clean floors (pH 5.5 to 9.5).
- If you wash the floors with water, ensure wastewater is collected and heavy metals and grease are removed before the water is discharged to the drain.

BMP #4 - Floor Drains

Location

- Perform vehicle maintenance in areas where there are no floor drains.
- If there are floor drains present in work area, seal them off or cover with absorbent pads during work to prevent spills from entering drains.
- Never have floor drains present in areas where hazardous material is stored or ensure that the drains are sealed.
- All floor drains should be sealed unless connected to a holding tank, a sump or an oil/water separator.
- Shop wastes should never be drained into a storm drain, septic tank, surface water or onto the ground.
- Stencil yellow fish beside drains.

BMP #5 - General Housekeeping

A large amount of waste and pollution is generated by shop activities such as floor cleaning and material storage. By practicing good housekeeping shops prevent spills and waste less material.

Waste Management

- Use containers that are in good condition to store waste and replace leaky containers immediately.

- Label all raw material containers and have MSDS sheets readily available so employees know what they are working with.
- Each station should have separate, labeled containers for each waste, or labeled waste sinks, which discharge to appropriate waste holding tanks.
- Never place incompatible wastes in the same containers or in close proximity to each other. They may cause an explosion, fire or corrosion.
- Each service bay should have a waste collection station.
- Always keep container lids or bung holes closed except when filling or emptying containers.
- Carefully transfer vehicle liquid waste directly into the receiving container. Waste fluids include motor oil, power steering fluid, transmission fluid, brake fluid, antifreeze and coolant.
- Put wastes in separate, labeled containers that won't leak or corrode and that are hard to overturn.

Disposal

- Make sure containers are empty before placing them in the waste disposal bin.
- Post a list detailing how to dispose of different wastes.

Regular Maintenance

- Repair and replace all substantially cracked or otherwise damaged paved areas that can be contaminated by fluid leaks and spills.
- Inspect and clean yard storm drain inlets regularly, especially after large storms.
- Perform frequent inspections for structural integrity of items such as piping, valves, controls, joints, welds, tanks, roofs, pavement or other areas of potential leaks and spills.
- Do not leave full drip pans or other open containers lying around.
- Place a drip pan underneath vehicles and equipment when performing maintenance such as removing parts, unscrewing filters and unclipping hoses.
- Place dirty parts in drip pans instead of on the floor.

BMP #6 - Oil/Water Separators

Oil/water separators are designed to provide effective pretreatment of greasy wastewater before it is discharged into the sanitary sewer or storm drain. A separator is designed to allow the lighter oil globules to rise to the surface of the water where they can be skimmed off. The separators should only receive floor wash water. They should not be used to collect spills or concentrated chemicals. Oil/water separators need regular maintenance in order to remain effective.

Housekeeping

- Clean oil/water separators regularly and after any spill.
- Oil needs to be cleaned from the separator any time there is a visible sheen on the water surface.

- Equip the separator with an emergency shut off to prevent spills from entering the sewer or discharging directly into surface waters.

BMP #7 - Shop Towels

Shop towels and clothing that have come in contact with hazardous waste need to be sent to a commercial or non commercial laundry or a dry cleaner to be cleaned. If they are sent to one of the above places they do not need to be disposed of as a Special Waste. Shop towels and clothing that may have come in contact with flammable material must be stored and transported in fireproof containers (e.g. metal).

Reuse

- Never use disposable paper towels or rags.
- Use cloth towels, which can be cleaned and used again.
- Send your shop towels to a laundry or dry cleaning service.
- Never throw dirty towels into the dumpster, they may be considered a Special Waste.
- Do not saturate towels. If you do, wring them out and reuse or properly dispose of the liquid.

Storage

- Store shop towels in labeled metal safety cans to reduce the risk of fires.
- To reduce the risk of spontaneous combustion when storing shop towels in metal cans, keep towels moist with water.
- If your shop towels contain solvents, they should be stored in double bottom drums to allow the solvent to drip where it can be collected.

BMP #8 - Spill Prevention, Clean-Up and Response

Tips

- Keep emergency spill equipment and clean-up kit(s) in areas where there is a potential for spills.
- Keep MSDS forms in an accessible location.
- Designate one person to be in charge in the event of a spill.
- Contain the spilled material to prevent it from reaching drains.
- Immediately apply absorbent to spilled material.
- Provide detailed instructions for employees regarding clean-up procedures, including how to handle fires and explosions.
- Instruct employees to report spills immediately including the material type, approximate volume and drainage system it had entered.
(Provincial Emergency Program 1-800-663-3456)
(City of Victoria Water and Environmental Section 361-0314)
(Saanich Public Works Dept. 744-5300)

BMP #9 - Storage Areas

Vehicle

- Uncovered vehicle storage areas should have a separate stormwater collection system with an oil/water separator that discharges to the sewer or to a holding tank.
- Areas where vehicles are stored and repaired must have impermeable surfaces and have provisions for containment of vehicle leaks.
- Surround vehicle storage areas with a dike to prevent leaking fluids from being carried by rainwater or snowmelt runoff.

Storage Containers

- Materials and wastes should be stored indoors whenever possible to prevent moisture from seeping into the containers.
- The storage area should be covered and may need to be fenced and locked if vandalism is a problem.
- If a shed is not available for storage, use tarps. Inspect regularly for tears.
- Drums need to be raised off the ground to prevent corrosion through sweating.
- Rows of drums need to be spaced out to allow easy access, good ventilation and inspection capability.
- Distances between different chemicals should be maintained to prevent cross contamination and chemical reactions.
- Never lean equipment or tools against containers.
- Flammable and combustible materials must be stored in fireproof cabinets.
- Use a board to angle drums to minimize rainwater from collecting around the bung hole.

BMP #10 - Waste

By minimizing waste you can reduce disposal costs, purchasing costs and the amount of time spent on preparing wastes for disposal. The use of less toxic products can minimize your waste treatment and disposal costs.

Purchasing

- Purchase products in amounts that can be used completely - BUY ONLY WHAT YOU NEED.
- Buy products that will last longer.
- When buying new equipment, look for equipment that will minimize both the amount of toxic materials used and the amount of waste generated.

Recycle

- Collect and recycle all petroleum-based fluids from vehicles (oil, transmission fluid, brake fluid). (Recycling Hotline 1-800-667-4321)
(CRD Hotline 360-3030)
- Collect and recycle all antifreeze.

Reduce

- Place drip pans under dispensing valves and reuse or recycle collected material.
- Fix leaking valves and pipes to reduce the loss of materials.

Alternative Materials

- Look for labels that state "non toxic".
- Rather than using detergents use hot water/steaming methods to remove oil from engines, tools and equipment (treat wastewater before it is released to the drain).
- Use non-solvent cleaners.
- Use non-chlorinated compounds rather than chlorinated (as they are less toxic, disposal costs are less expensive).
- Use waterless hand cleaners.
- Try using safe cleaning alternatives such as baking soda and vinegar.

BMP #11 - Antifreeze

Antifreeze usually contains toxic substances such as ethylene glycol or propylene glycol, corrosion inhibitors and foam controllers and is usually diluted to 50% concentration with water in motor vehicles. Antifreeze may also contain heavy metals, fuel, and solvents that are picked up while circulating through the engine and cooling system in the automobile.

Storage

- Never mix waste antifreeze with any other waste.
- Never dispose of antifreeze down a storm drain, sewer, septic tank, or dry well and never pour antifreeze on the ground.
- Make sure that your antifreeze storage tanks or drums have proper containment in case of spills or leaks.

Recycling

- Recycle your antifreeze or use a recycling service.
(Recycling Hotline 1-800-667-4321)
(CRD Hotline 360-3030)
- Consider the use of propylene glycol-based antifreeze as an alternative to the more toxic ethylene glycol types.
- Consider purchasing an on-site antifreeze recycler.
- Do not use antifreeze as a de-icing agent.

BMP #12 - Batteries

All lead-acid batteries should be recycled. The reclaimer recycles the batteries by removing the lead for reuse.

Storage

- Store batteries upright in a covered place and check routinely for leaks and cracks, especially when exposed to freezing temperatures.
- Treat a dropped battery as if it were cracked. Take necessary precautions and store in an acid resistant tub.
- Batteries stored outside should be suspended above impermeable surfaces (e.g. concrete) and covered to prevent acid runoff. Never put batteries into the garbage.
- Keep a neutralizing agent (e.g. baking soda) near storage area in case of spills or leaks.
- When stacking batteries, make sure that any fluid leaking from a battery will not be washed away as runoff.
- Never drain batteries into a drain or onto the ground.
- Small quantities of lead acid batteries should be stored in acid resistant tubs.
- Large quantities of batteries should be stored in an isolated area with no floor drains.
- Avoid long term storage of batteries by sending them to a reclaimer every six months.

BMP #13 - Brake Fluid and Carburetor Emulsifier

Brake fluid is not crude based so it should never be added to used oil. Brake fluid by itself is hazardous because of its toxicity and should be treated as a Special Waste.

Storage

- Collect brake fluid in a separate, marked, closed container and dispose of it with assistance from a waste disposal company.
- Never put brake fluid into your used oil container.

Reduce and Reuse

- Bleed fluids from brake lines only as required for servicing.
- Use devices such as aspirated bleeders to drain brake lines, and collect the fluid for reuse.
- Reuse carburetor and brake cleaners to their full capacity.

BMP #14 - Engine Cleaning

Engine cleaning procedures utilize toxic solvents to remove oil and dirt, all of which are subsequently released into the wastewater.

Location and Disposal

- Wash engines in a contained area with no access to the sewer or storm drains.
- Collect the wastewater and recycle, reuse or discharge it to a holding tank for treatment and disposal.

Alternatives

- Consider steam cleaning which may eliminate the use of solvents.
- Steam cleaning should not be conducted outside, where wastewater can be discharged onto the ground.
- Use only small amounts of soaps and non-foaming detergents.

BMP #15 - Oil and Oil Filters

In BC, waste oil and oil filters containing greater than 3% of oil (by weight) are Special Wastes. Allowable disposal options in BC include recycling, pavement manufacture and export.

Used oil includes:

Crankcase oil	Metal working oil
Gear oil	Transmission fluid
Brake fluid	Hydraulic fluid

Storage

- Keep used oil in a separate, marked, watertight, rodent-proof container in a secure place.
- Never mix used oil with other wastes such as solvents, brake fluid, power steering fluid and antifreeze.
- Make sure your used oil storage tanks or drums have proper containment in case of a spill or leak.
- Inspect your storage tanks and drums regularly for leaks and spills.
- Keep collection drums covered and labeled, in good condition, secure from vandals and in compliance with local fire codes.

Housekeeping

- Routinely inspect vehicles and equipment for leaks and inspect incoming vehicles for leaking oil and other fluids.
- Place drip pans underneath leaking vehicles to collect dripping oil. Don't forget to pour the oil from the drip pan into a used oil drum.
- Try to prevent spills when servicing vehicles. If a spill occurs clean it up immediately with rags. Wring out the oil into the used oil drum.
- Place a drain rack over a waste oil sink to drain and collect the residual oil from parts/containers prior to disposal.

Disposal

- Puncture oil filters with a nail, drain the filter for at least 24 hours then crush and recycle the filters. (Recycling Hotline 1-800-667-4321)
- Keep drained filters in a separate container marked "used oil filters only".
- Never dispose of used oil down a storm drain, septic tank, dry well, sewer or in a dumpster.
- Never pour oil on the ground, even for dust suppression.

BMP #16 - Parts Cleaning and Degreasing

Spent solvents are one of the largest hazardous wastes, by volume, produced by the automotive industry. Spent solvents are dangerous to workers because they are toxic and they emit harmful fumes. If your shop is using hazardous solvents in your parts washing system consider replacing your solvents or degreaser with a non-hazardous substitute.

Cleaning

- Pre-clean parts in a container, with a squeegee, rag or wire brush before soaking them in a parts washer.
- Do not clean parts unnecessarily.
- Be sure that the solvent is too dirty to use before it is exchanged for new solvent.
- Use a solvent test kit to determine when the solvent is too dirty for future use.
- Consider having two tanks - one with old solvent to pre-soak and remove most of the dirt and grease and one with new solvent. This will extend the life of the solvent bath.
- Avoid the use of spray cleaners (much of the cleaner ends up in the air, not on the part). Spray cleaner should only be used when parts cannot be removed from a vehicle and the placement of a cleaning sink or a pan under the part to catch drips is not possible.
- Chlorinated solvents and other solvents with a specific gravity greater than 1.0 (water) should be avoided (check MSDS sheets).

Alternatives

- Use less hazardous solvents or switch to a spray cabinet parts washer that does not use solvent.
- Aqueous or alkaline cleaners may be substituted for solvent-based cleaners in some applications, particularly for non-aluminum parts.
- Substitute non-chlorinated solvents (such as citrus-based solvents) for chlorinated compounds wherever possible.

Storage

- Never mix solvents with other wastes.
- Always keep different solvents in separate, tightly closed and labeled containers away from heat and drafts to minimize product loss and to keep air emissions at a minimum.

Cleaning Areas

- Parts cleaning and degreasing areas should be isolated from other operations, preferably located within a containment area with no direct access to outside the facility and the floor must be sealed with an impermeable material.
- Place the solvent sink in a convenient location to minimize dripping.

Disposal and Recycling

- Never dispose of solvents by pouring them down drains, on the ground or by evaporation.
- High-pressure water washing may be an effective method of parts cleaning; wastewater is treated with an oil/water separator and recycled.
- Decanting solvent sludge from the tanks can extend the life of the solvent bath.
- The used solvent decanted from the separation of the solvent sludge can be reused for pre-cleaning parts.
- Consider purchasing an on site-solvent recycler.
- Wring out solvent rags, soaked absorbent pads and booms for reuse, being careful to minimize human contact. Collect and recycle (if possible) material wrung from rags and pads.

Housekeeping

- Solvents should never be used to clean shop floors.
- Solvents should only be used in a well-maintained self-contained cleaning system.
- Turn off the solvent stream and cover the unit when not in use. If your unit is equipped with a heating unit, turn it off at the end of the day.
- Install a filter on your solvent sink to increase the life of the solvent. Dispose of the filters as Special Waste.
- Use a solvent sink with a re-circulating base tank as opposed to a rinse tank or open bucket.
- Minimize the amount of solvent lost during drainage. Install drip trays near the bath and drainage area, remove the parts slowly and return the drainage to the solvent tank.
- Turn off the solvent stream and cover or plug the sink when not in use.
- Maintain equipment in good working order - free from cracks, rust, and corrosion, which can flake off and contaminate the bath.
- Spray nozzles should be regularly inspected to prevent clogging.

Buying a Parts Washer

- \$ Purchase a parts washer with a lid rather than an open bucket or pan. This will reduce evaporation or spillage of the solvent.
- \$ Purchase a parts washer with a drain shelf that fits inside the basin. This allows the solvent to drain from parts prior to removing them from the washer.
- \$ Purchase a parts washer with a filtering unit that will extend the life of the solvent by filtering out contaminants.

BMP #17 - Radiator Repair

Radiators are generally drained of coolant and cleaned with an alkaline solution, (which may contain zinc chloride) then rinsed with water in either a boil tank or by flushing it out with a hose.

Location

- Boil tanks should be placed in a secure area, with secondary containment.

Disposal

- The solutions from these boil tanks should be used as long as possible.
- Drainage from boil tanks should be collected in holding tanks, and disposed of as Special Waste.

Notes

- Aromatic and chlorinated hydrocarbon solvents should not be used.
- Eliminate the use of lead solder whenever possible, or use a solder with the lowest lead content.
- Test and adjust coolant additives rather than replacing coolant.
- Flush cooling systems only when required.

BMP #18 - Refrigerants

It is illegal to vent freon into the environment. To deal with freon, certification is required.

Handling

- Recycle waste freon using "ozone depleting substances" (ODS) recovery and recycling equipment as per requirements of the ODS Regulation.
- Don't evaporate or vent freon. This is illegal.
- Treat filters from freon recovery equipment as Special Waste and dispose of accordingly.

BMP #19 - Tires

Piles of waste tires can cause a threat to public health and the environment. Waste tires provide a breeding ground for mosquitoes and rats (which carry disease) and pose a fire hazard.

Storage

- Store as few tires as possible and have them taken away frequently.
- Keep tires stored indoors or cover waste piles to prevent entrapment of water.

Customer Education

- Encourage customers to select tires with the highest mileage rating.
- Encourage customers to use retread tires, especially for large trucks.

BMP #20 - Vehicle and Equipment Washing

Washing vehicles and equipment where the wastewater enters the storm drain system can pollute stormwater with oil, grease and other vehicle residues. An oil/water separator is the best way to prevent oil from reaching the storm drain. Do not use soap unless it is phosphate free.

Location

- Make sure that there are no drains in the washing area.
- Alternatively, place a temporary plug over the storm drain and direct the wastewater to an oil/water separator.
- Use a designated area with a covered concrete spill containment pad for all vehicle washing.

Housekeeping

- Place signage in the wash area indicating that it is a wash area and other maintenance activities are prohibited (e.g. oil changes).
- Aromatic and chlorinated hydrocarbon solvents should be eliminated from washing operations (check MSDS sheets).

Environmental Self-Assessment

Reducing the amount and/or the toxicity of the waste you generate can help you:

- Reduce time and effort on hazardous waste management
- Minimize long-term liability concerns
- Promote a healthier, safer work environment
- Protect the environment
- Project a positive public image
- Save money

It is not difficult to start. Walk through your shop and answer the following questions to evaluate your current practices. A "no" answer or a "don't know" answer indicates areas where you may wish to modify your procedures. You are encouraged to consult with the organizations listed in the Resource Guide.

Material Handling and Storage

1. Do you have a policy of purchasing alternative, less toxic products?
YES NO Don't Know
2. Do you date all materials and use the first-in, first-out method of inventory control?
YES NO Don't Know
3. Do you inspect all shipments of materials at the time of delivery and return unacceptable and damaged materials to the supplier?
YES NO Don't Know
4. Do you purchase no more liquid products (oil, antifreeze, glass cleaner, windshield fluid) than you need?
YES NO Don't Know
5. If not stored within the building, does your shop store all materials and wastes in a covered storage facility?
YES NO Don't Know
6. Does your shop store all solvents and automobile fluids according to the manufacturer's recommendations?
YES NO Don't Know
7. Does your shop store each of its waste materials (oil, antifreeze, etc.) in separate, marked containers to enable recycling?
YES NO Don't Know
8. Do you use tight fitting lids and leak-proof spigots, funnels or pumps to transfer materials?

YES NO Don't Know

9. Do you require that containers of solvents, paint thinners and other volatile liquids are kept closed to reduce evaporation?

YES NO Don't Know

10. Is your spill procedure posted for all employees to follow?

YES NO Don't Know

11. Are all containers clearly labeled with their contents?

YES NO Don't Know

12. Are MSDS sheets for dangerous products readily available in the case of an emergency?

YES NO Don't Know

Spill Prevention/Management

1. Do material storage areas have a berm and a sump drain to contain spills and leaks?

YES NO Don't Know

2. If your storage area does not have a berm, do you use self-contained spill management methods such as pallets that have built-in spill containment?

YES NO Don't Know

3. Are all drains sealed in areas that are used for the storage of hazardous materials?

YES NO Don't Know

4. Do you prevent materials from dripping on the floor by using drip pans under cars and spigots?

YES NO Don't Know

5. Do you promptly wipe up small spills?

YES NO Don't Know

6. Do you use dry methods for clean-up of small spills?

YES NO Don't Know

7. Do you pick up absorbent material as soon as possible after the spill?

YES NO Don't Know

8. Do you determine whether used absorbents are considered hazardous and dispose of them accordingly?

YES NO Don't Know

9. Have your employees been trained to report and safely handle spills?

YES NO Don't Know

10. Do you keep a spill clean-up kit on hand?

YES NO Don't Know

Shop Clean-Up

1. Is all vehicle maintenance/dismantling done in areas where there are no drains or the drains have been sealed?
YES NO Don't Know
2. Are the concrete floors of the service bays sealed with an impervious material to help clean-up without using solvents?
YES NO Don't Know
3. Do you use brooms or other dry methods as the main way of cleaning the shop floors?
YES NO Don't Know
4. If you use water to clean the floors, does it meet discharge regulations?
YES NO Don't Know
5. Do you store shop towels in a closed container?
YES NO Don't Know
6. Do you send dirty shop towels and coveralls to a commercial laundry?
YES NO Don't Know
7. Do you have a catch basin and/or an oil/water separator on your property?
YES NO Don't Know
8. Do you inspect your catch basin and/or oil/water separator and have them cleaned out regularly?
YES NO Don't Know

Parts Cleaning and Degreasing

1. Do you use citrus-based, detergent-based or a hot soap parts cleaning system?
YES NO Don't Know
2. Does your shop have guidelines as to when parts should be cleaned using solvents?
YES NO Don't Know
3. Are dirty parts brushed into a container to remove caked-on solids and to improve cleaning efficiency?
YES NO Don't Know
4. Do you pre-rinse parts before using the hot tank or jet spray washer?
YES NO Don't Know
5. Are there drip trays or racks on your parts washer?
YES NO Don't Know

6. Are solvent tanks covered and solvent stream turned off when not in use?
 YES NO Don't Know
7. Does your parts washer have a solvent filtering feature to extend solvent life?
 YES NO Don't Know
8. Does your shop collect and recycle waste cleaning solvents?
 YES NO Don't Know
9. Do you allow proper drainage of parts to minimize solvent dripping on the floor?
 YES NO Don't Know
10. Do you use one multi-purpose solvent rather than several different solvents?
 YES NO Don't Know
11. Do you use dirty solvent first when cleaning parts?
 YES NO Don't Know

Maintenance and Repair Activities

OIL

1. Do you place dirty parts in drip trays instead of on the shop floor?
 YES NO Don't Know
2. Do you hot drain oil filters for a minimum of 12 hours?
 YES NO Don't Know
3. Do you crush the oil filters and recycle them as scrap metal?
 YES NO Don't Know
4. Does your shop store used oil in closed, clearly marked containers?
 YES NO Don't Know
5. Does your used oil get recycled?
 YES NO Don't Know
6. Do you regularly check waste oil tanks for leaks and spills?
 YES NO Don't Know
7. Do you keep waste oil separate from other waste materials such as solvents and antifreeze so it can be recycled?
 YES NO Don't Know

ANTIFREEZE

1. Does your shop save antifreeze that is suitable for reuse?
 YES NO Don't Know
2. Do you store waste antifreeze in a separate, marked container for recycling?
 YES NO Don't Know
3. Does your shop recycle antifreeze (on-site or contract)?
 YES NO Don't Know
4. Does your shop use propylene glycol antifreeze as a substitute for ethylene glycol antifreeze?
 YES NO Don't Know

BATTERIES

1. Do you store waste lead-acid batteries on pallets in a well ventilated area?
 YES NO Don't Know
2. Are the pallets placed on an impermeable floor with a berm?
 YES NO Don't Know
3. Do the pallets already have built-in spill containment?
 YES NO Don't Know
4. Do you store waste lead-acid batteries in acid resistant containers?
 YES NO Don't Know
5. Does your shop recycle its lead-acid batteries?
 YES NO Don't Know
6. Do you keep a neutralizing agent such as baking soda near the battery storage area in case of leaks or spills?
 YES NO Don't Know

REFRIGERANTS

1. Does your shop use CFC refrigerant recycling or recovery equipment operated by certified technicians when servicing air conditioning systems?
 YES NO Don't Know
2. Does your shop evacuate/recover refrigerant before servicing any system?
 YES NO Don't Know
3. Is your shop aware that it is illegal to vent refrigerants to the atmosphere?
 YES NO Don't Know

4. Do you encourage your customers to repair leaks, rather than just topping off a system that is not cooling properly?
YES NO Don't Know

RADIATORS

1. Has your shop stopped using aromatic and chlorinated hydrocarbon solvents in the repair of radiators?
YES NO Don't Know
2. Is the boil tank in a secure area with secondary containment?
YES NO Don't Know
3. Has your shop eliminated the use of lead solder or switched to solder with a lower lead content?
YES NO Don't Know

MISCELLANEOUS

1. Does your shop use an aqueous brake wash as an alternative to solvent wash and aerosol solvents?
YES NO Don't Know

Employee Training

1. Do you train your employees in waste segregation, waste minimization, hazardous materials handling and emergency response?
YES NO Don't Know

SPILL MANAGEMENT

Emergency Spill Clean-up Plans

All businesses that handle material that could potentially contaminate the environment should have an emergency spill clean-up plan in place. General guidelines for developing an emergency spill clean-up plan are given below.

- The plan should contain a site plan showing the location of storage areas for chemicals, storm drains (and the direction of slopes towards those drains), and the location and description of any devices to stop spills from leaving the site, such as positive control valves.
- The plan should describe notification procedures to be used in the event of a spill, such as the Provincial Emergency Program (1-800-663-3456) and key business personnel.
- The plan should give explicit instructions regarding clean-up procedures and include MSDS sheets.
- A summary of the plan should be posted at appropriate points in the business identifying the location of clean-up kits and phone numbers of regulatory agencies to be contacted.

Suggested Spill Clean-up Kit:

1. Salvage drums/containers such as high density polyethylene or polypropylene sheet lined steel
2. Polyethylene disposal bags or equivalent
3. Emergency response guidebook
4. Safety gloves/clothes/equipment
5. Shovels or other soil removal equipment
6. Absorbent pads and oil containment booms, stored in an impervious container
7. Granular or powdered materials for neutralizing acids or alkaline liquids

Phone the Ministry of Water Land Air Protection for additional information at:
1-250-751-3100.

SPILL PROCEDURES

FOR OILS, BRAKE FLUID & ANTIFREEZE

- CONTAIN SPILLS WITH ABSORBENT SOCKS AND PILLOWS AS NECESSARY
- USE ABSORB-ALL TO SOAK UP SPILL
- COLLECT USED ABSORBENTS AND STORE IN A SECURE LOCATION IN A CLOSED, LABELLED BARREL (USED OIL)
- WHEN THE BARREL IS FULL, CONTACT A LICENCED SPECIAL WASTE CONTRACTOR TO REMOVE THE WASTE

Note:

Transporting more than one barrel of used oil (205 kg) requires a manifest under the B.C Special Waste Regulation; therefore it is in the best interest of the business to have a full barrel removed immediately.

Storage of more than 5,000 kg of used oil requires registration

FOR GASOLINE

- CONTAIN SPILL WITH ABSORBENT SOCKS AND PILLOWS AS NECESSARY
- USE ABSORB-ALL TO SOAK UP SPILL
- COLLECT USED ABSORBENTS AND STORE IN A WELL VENTILATED SECURE LOCATION IN A LABELLED BARREL (USED GASOLINE)
- CONTACT A LICENCED SPECIAL WASTE CONTRACTOR TO ARRANGE IMMEDIATE REMOVAL OF THE WASTE, BEWARE OF POTENTIAL FIRE HAZARD

Resource Guide

Spill Reporting

Provincial Emergency Program	1-800-663-3456
City of Victoria Pollution Abatement Office	361-0314

Waste Management

Ministry of Water Land and Air Protection - Special Waste	(250) 387-3648
BC Recycling Hotline	1-800-667-4321
CRD Hotline	360-3030
Municipal Garbage Collection:	
Victoria	361-0400
Saanich	744-5309
BC Product Care (handling and disposal of paint)	1-800-667-4321

Regulations and Bylaw Information

Federal	
Department of Fisheries - Fisheries Officer	363-3252
Provincial	
Ministry of Water Land and Air Protection (MWLAP)	
Duncan McLaren, Pollution Prevention Officer	(250) 751-3196
Municipal	
City of Victoria	
Gary Pleven, Pollution Abatement Officer	361-0314

Additional Information

CRD Environmental Services Department	
Discharges to Sanitary Sewers- Henry Lee	360-3216
MWLAP Spill Clean-up Information	
General Information - Bob Davis	(250)-751-3191
Bernie Mackay	(250)-751-3175
Burnside Gorge Community Association	
General Information	388-5251

Glossary

Absorbent - Material used to soak up spills.

Aquatic Habitat - A place in, on or near water where organisms are normally found.

Best Management Practices (BMPs) – procedures and guidelines a business can follow to ensure its operations are efficient, comply with legal requirements and prevent pollution.

Catch basin - Storm grates are visible on the surface and collect runoff for catch basins located beneath them. A catch basin provides a few feet of storage below the outflow pipe. This permanent storage area is intended to trap sediments, debris and other particles that settle out of stormwater to prevent clogging of downstream pipes and washing of these solids into receiving waters.

Contaminant - A substance that is not naturally present in the environment or is present in amounts that can, in sufficient concentration, affect the environment.

Culvert - A covered channel or a large diameter pipe that directs water flow below ground level.

Decanting - Drawing off liquids from the settled sludge. Alternatively the bottom sludge may be drained out.

Dike/berm - A protective physical barrier, usually concrete. Usually used to contain and direct liquids.

Erosion - The wearing away of land surface by running water, wind, ice, or other geological activities.

Eutrophication - Refers to the process where nutrient over-enrichment of water leads to excessive growth of aquatic plants, especially algae.

Fecal Coliform Bacteria - Bacteria common to the intestinal tract of mammals. Fecal coliforms are used as an indicator for the presence of sewage.

Groundwater - Water in a saturated zone or stratum beneath the land surface or water body.

Heavy metals - Metals of high specific gravity, such as lead, zinc and copper that may pose long-term environmental hazards.

Impermeable- A surface which cannot be easily penetrated by substances such as liquids.

Interceptor – A stormwater quality treatment device that efficiently removes oil and suspended solids.

Leachate - Liquid that has percolated through the soil and contains substances in solution or suspension.

Material Safety Data Sheets (MSDS) – Information supplied by the manufacturer on the chemical properties, hazards, and special handling of a product.

Non-point Source Pollution - Pollution that comes from dispersed or poorly defined sources rather than a single point such as an industrial pipe.

Nutrients - Elements or substances, such as nitrogen or phosphorous, that are necessary for plant growth. Large amounts of these substances reaching water bodies can lead to reduced water quality and eutrophication by promoting excessive aquatic algal growth. Some nutrients can be toxic at high concentrations.

Oil - Materials including, but not limited to, petroleum, fuel oil, sludge, oil refuse and oil mixed with waste other than dredged spoil.

Oil/Water Separator - A device designed to remove oil, grease and similar floatable pollutants from stormwater runoff.

Outfall - The point where a storm drain discharges from a pipe, channel, ditch, or other conveyance to a waterway.

Permeability - The quality that enables the soil to transmit water or air, measured as the number of inches per hour that water moves downward through the saturated soil.

Pervious - A surface that can be easily penetrated by substances such as liquids.

pH - A measure of the alkalinity or acidity of a substance.

Pollutant - Any substance that can render the environment (e.g. water, land) harmful to people, wildlife or fish, or impair recreation or other beneficial uses of the resource.

Precipitation - Any form of rain or snow.

Runoff - Water originating from rainfall or other precipitation.

Sanitary Sewer System - A network of pipes for carrying sewage to a treatment facility.

Solvents - An organic chemical such as ammonia, acetone, benzene, methylene chloride, toluene, trichlorethane, and tetrachloroethylene. Solvents are used in the following products: strippers, cleaners, spot removers, degreasers, thinners and oil-based paints.

Source Control BMPs - Operational practices that prevent pollutants from entering the environment at the source.

Special Waste - PCB wastes, wastes containing dioxin, waste oil, waste asbestos, leachable toxic waste or waste containing polycyclic aromatic hydrocarbon - defined in the Special Waste Regulation/Waste Management Act.

Storm drain - Above or below ground structures for transporting stormwater to streams or outfalls for flood control purposes.

Stormwater - Stormwater runoff, snow melt runoff, surface runoff and drainage.

Sump – An impervious pit for the collection of spilled or leaked fluids.

Toxic - Substances that are poisonous, carcinogenic or otherwise harmful to life.

Treatment - the handling or processing of Special Waste in such a manner as to change the physical, chemical, or biological character or composition of the Special Waste in order to eliminate or reduce the volume, or one or more hazardous properties of the Special Waste.

Treatment Control BMPs - Constructed equipment that stores, infiltrates and/or treats runoff to remove pollutants.

Waste Oil – Automotive lubricating oil, cutting oil, fuel oil, gear oil, hydraulic oil, or any other refined petroleum based oil or synthetic oil that is no longer suitable for its original purpose.

Watershed - A geographic area, bounded by elevation of land, within which all runoff drains to a common point, such as a river mouth.