

4W BMPs for Vehicle Service Facilities

Vehicle Service Facilities

Focus of Document

This guidance presents BMPs to address the discharge of pollutants to the storm drainage system from vehicle service facilities. These facilities include:

- ✓ Vehicle Repair Shops, Body Shops, Car Washes (SIC Major Group 75)
- ✓ Gasoline stations (SIC 5541)

Sources of Pollutants

There are several activities that could potentially cause the discharge of pollutants to the storm drainage system from these facilities. These activities of concern include:

- ✓ Facility maintenance and management (Keeping a clean shop, storage, spill control, outdoor waste receptacle areas, education and training)
- ✓ Changing oil and other fluids
- ✓ Cleaning engines and parts, and flushing radiators
- ✓ Washing cars and other vehicles
- ✓ Body repair and painting
- ✓ Fuel dispensing

Pollutants of Concern

Some of the pollutants of concern from these facilities are:

- ✓ Metals (copper, zinc, chromium, nickel, and lead)
- ✓ Oil and grease
- ✓ Gasoline (e.g. Polycyclic Aromatic Hydrocarbons (PAHs) and Methyl Tertiary-Butyl Ether (MTBE))
- ✓ Solvents

Best Management Practices

Best management practices for the most part are common sense, good housekeeping measures that can be implemented without resulting in excessive effort and cost to the facility owner/operator. BMPs listed below apply mainly to the operations of such facilities. Structural controls or physical improvements are generally not recommended for existing facilities although opportunities for structural controls should be utilized when new vehicle service facilities are constructed or existing ones are remodeled.

To assist the City in selecting BMPs for implementation by the vehicle service facility operator/owner, BMPs that are considered high priority are marked “•••”; medium priority are marked “••” and low priority are marked “•”. Rationale used in this prioritization is presented at the end of the section.

Facility Maintenance and Management Practices

Keeping a Clean Shop

- Use drip pans under leaking vehicles to capture fluids.
- Regularly sweep or vacuum the shop floor and other paved surfaces at your facility. Use mopping as an alternative to hosing down or washing work areas. If mopping is used to clean shop floors:
 - 1) Spot clean any spilled oil or fluids using absorbents or rags.
 - 2) Use dry cleanup methods: Sweep the floor using absorbents.
 - 3) After steps 1 and 2 above (if mopping is still needed), mop and dispose of mop water to the sanitary sewer.
 - 4) Do not pour mop water into the paved areas, street, gutter, or storm drain.

(See Rationale 1 at the end of section)

- Remove unnecessary hoses to discourage washing down floors and outside paved areas.
- Collect all metal filings, dust, and paint chips from grinding, shaving, and sanding, and dispose of the waste properly. Never discharge these wastes to the storm drain or sanitary sewer.

- Collect all dust from other activities (e.g. brake pad dust) and dispose of the waste in compliance with local requirements. Never discharge these wastes to the storm drain or sanitary sewer.
- • Recycle cleaning rags through an industrial laundry.
- • • Inspect and clean if necessary, storm drain inlets and catch basins within the facility boundary before October 1 each year (see Rationale 2 at the end of section).
- • • Label storm drains with “No Dumping – Discharges to Ocean” (see Rationale 3 at the end of section).

Storage

- • • Store hazardous materials and wastes in secondary containment where they are protected from rain and in a way that prevents spills from reaching the sanitary sewer or storm drain (see Rationale 4 at the end of section).
- • • Keep lids on waste barrels and containers, and store them indoors or under cover to reduce exposure to rain (see Rationale 4 at the end of section).
- • All hazardous wastes must be labeled according to hazardous waste regulations. Consult the Fire Department or your local hazardous waste agency for details.
- • Keep wastes separate to increase your waste recycling/ disposal options and to reduce your costs.
- • Never mix waste oil with fuel, antifreeze, or chlorinated solvents. Consult your hazardous waste hauler for details.
- • Double-contain all bulk fluids and wastes to prevent accidental discharges to the sewer and storm drain. Consult the Fire Department for details.
- • • Keep storage areas clean and dry. Conduct regular inspections so that leaks and spills are detected as soon as possible (see Rationale 4 at the end of section). Document all inspections.
- • • When receiving vehicles to be parted or scavenged, park them on a paved surface and immediately drain and collect gasoline and other fluids properly. Place drip pans to catch leaking fluids (see Rationale 4 at the end of section).

- • Drain all fluids from components, such as engine blocks, which you may store for reuse or reclamation. Keep these components under cover and on a drop pan or sealed floor.
- • Store new batteries securely to avoid breakage and acid spills during earthquakes. Shelving should be secured to the wall. Store used batteries indoors and in plastic trays to contain potential leaks. Recycle old batteries.

Spill Control

The Best Spill Control is Prevention

- • • Maintain and keep current, as required by other regulations, a spill response plan and ensure that employees are trained on the elements of the plan (see Rationale 5 at the end of section).
- Minimize the distance between waste collection points and storage areas.
- Contain and cover all solid and liquid wastes – especially during transfer.
- • Purchase and maintain absorbent materials in accordance with local regulations and procedures for containment and cleanup of different spills, and make sure they are easily accessible anywhere in the shop. Saturated absorbents generally must be disposed of as hazardous waste.
- • “Spot clean” leaks and drips routinely. Leaks are not cleaned up until the absorbent is picked up and disposed of properly.
- • • Check floor drains to ensure that they are not connected to or discharge to the storm drain system (see Rationale 6 at the end of section).

Outdoor Waste Receptacle Areas

- Spot clean leaks and drips routinely to prevent runoff of spillage.
- Minimize the possibility of pollution from outside waste receptacles by doing at least one of the following:
 - use only watertight waste receptacle(s) and keep the lid(s) closed, or
 - grade and pave the waste receptacle area to prevent run-on of storm water, and install a low containment berm around the waste receptacle area, or
 - install a roof over the waste receptacle area.

Education and Training

- • • Train all employees upon hiring - and annually thereafter - on personal safety, chemical management, and proper methods for handling and disposing of waste. Make sure that all employees understand storm water discharge prohibitions, wastewater discharge requirements, and these best management practices. Use a training log or similar method to document training (see Rationale 1 and 5 at the end of section).
- • Post instructional/informational signs around your shop for customers and employees. Put signs above all sinks prohibiting discharges of vehicle fluids and wastes. Put signs on faucets (hose bibbs) reminding employees and customers to conserve water and not to use water to clean up spills.
- • • Label drains within the facility boundary, by paint/stencil (or equivalent), to indicate whether they flow to an on-site treatment device, directly to the sanitary sewer, or to a storm drain. Labels are not necessary for plumbing fixtures directly connected to the sanitary sewer (see Rationale 3 at the end of section).
- • • Post emergency telephone numbers of the wastewater treatment plant and the fire department.

Changing Oil and Other Fluids

- • Whenever possible, change vehicle fluids indoors and only on floors constructed of non-porous materials. Avoid working over asphalt and dirt floors – surfaces that absorb vehicle fluids.
- • If vehicle fluids must be removed outdoors, always use a drip pan. Prevent spills from reaching the street or storm drain by working over an absorbent mat and covering nearby storm drains, or working in a bermed area. If necessary, you can use absorbent socks to create a bermed area.
- When draining fluids into a drain pan, place a larger drip pan (e.g., 3' x 4') under the primary drain pan to catch any spilled fluids.
- • Transfer fluids drained from vehicles to a designated waste storage area as soon as possible. Drain pans and other open containers of fluids should not be left unattended unless they are covered and within secondary containment.
- • Store waste containers of antifreeze and oil within secondary containment. Antifreeze and waste oil should be stored separately and recycled, or disposed of as hazardous waste.

APPENDIX 4W BEST MANAGEMENT PRACTICES

- • • Never pour vehicle fluids or other hazardous wastes into sinks, toilets, floor drains, outside storm drains, or in the garbage. These substances should be kept in designated storage areas until recycled or safely disposed of (see Rationale 4 at the end of section).
- • Drain fluids from leaking or wrecked vehicles as soon as possible, to avoid leaks and spills.

Cleaning Engines and Parts, and Flushing Radiators

- • • Eliminate discharges from engine cleaning and flushing of radiators to the sanitary sewer and storm drains. Use a licensed service to haul and recycle or dispose of wastes (see Rationale 4 at the end of section).
- • Steam cleaning of engines must be done in a closed-loop water recycling system. No steam cleaning water may be discharged to the sanitary sewer or the storm drain.
- • Designate specific areas or service bays for engine, parts, or radiator cleaning. Do not wash or rinse parts outdoors.
- • Use self-contained sinks and tanks when working with solvents. Keep sinks and tanks covered when not in use.
- • Inspect degreasing solvent sinks regularly for leaks, and make necessary repairs immediately.
- Avoiding soldering over drip tanks. Sweep up drippings and recycle or dispose as hazardous waste.
- • Rinse and drain parts over the solvent sink or tank, so that solvents will not drip or spill onto the floor. Use drip boards or pans to catch excess solvent solutions and divert them back to a sink or tank.
- • Allow parts to dry over the hot tank. If rinsing is required, rinse over the tank as well.
- Collect and reuse parts cleaning solvent solutions and water used in flushing and testing radiators. When reuse is no longer possible, these solutions are hazardous wastes unless otherwise determined, and must be disposed of properly.
- • Never discharge cleaning solutions used for engines or parts into the sewer sanitary system without adequate treatment. Most facilities have these so-

lutions hauled off-site as hazardous waste because of the permits necessary for on-site treatment.

- • Rinsewater may only be discharged to the sanitary sewer after adequate treatment and approval by the sewage treatment plant.
- • • Never discharge wastewater from steam cleaning, or engine/parts cleaning to a street, gutter, storm drain, or sanitary sewer.

Washing Cars and Other Vehicles

Regular Activity

- • If car washing is a central activity of your business, the most desirable option is to treat and recycle the wash water.
- • • Designate a vehicle washing area and wash cars and trucks only in that area. This “wash pad” should be bermed to prevent discharges to storm drains and should discharge to the sanitary sewer after adequate treatment and approval of the sewage treatment plant.
- • Cover an outside wash pad or minimize the area of an uncovered pad to reduce the amount of rainwater reaching the sanitary sewer. Consult your local sewage treatment plant for guidance.
- • • Acid-based wheel cleaners and other specialized cleaners may be prohibited or require additional treatment before discharge to the sewer.

Occasional Activity

- • Even biodegradable soap is toxic to fish and wildlife. Whenever possible, take vehicles to a commercial car wash that recycles.
- • • If soap is used in washing, the wash water must be collected and discharged, preferably with treatment, to the sanitary sewer. This water cannot be discharged to a storm drain (see Rationale 7 at the end of section).
- • • Never rinse off spray-on acid-based wheel cleaners where rinsewater may flow to a street, gutter, or storm drain.

Washing New Vehicles

- If cleaning the exterior of new vehicles with water only, the discharged water may go to the storm drain directly unless the vehicle has been coated.

- Always protect the storm drains from solvents used to remove protective coatings from new cars. Discharges of these solvents to the sanitary sewer must receive adequate treatment and approval of the sewage treatment plant.

Body Repair and Painting

- • Whenever possible, conduct all body repair and painting work indoors or under cover.
- When receiving damaged vehicles, inspect for leaks. Use drip pans if necessary.
- When cleaning auto body parts before painting, do not use hose-off degreasers. Brush off loose debris and use rags to wipe down parts.
- Use dry cleanup methods such as vacuuming or sweeping to clean up dust from sanding metal or body filler. Debris from wet sanding can be allowed to dry overnight on the shop floor, then swept and vacuumed. Liquid from wet sanding should not be discharged to the storm drain.
- Minimize waste paint and thinner by carefully calculating paint needs based on surface area and using the proper sprayer cup size.
- Do not use water to control overspray or dust in the paint booth unless you collect this wastewater. This water should be treated before discharge into the sanitary sewer system.
- Clean spray guns in a self-contained cleaner. Recycle the cleaning solution when it becomes too dirty to use. Never discharge cleaning waste to the sanitary sewer or storm drain.

Fuel Dispensing

- • • Maintain fuel dispensing areas using dry cleanup methods such as sweeping for removal of litter and debris, or use of rags and absorbents for leaks and spills. Fueling areas should never be washed down unless dry cleanup has been done and the wash water is collected and disposed of in the sanitary sewer system (see Rationale 1, 4, and 5 at the end of section.)
- Fit underground storage tanks with spill containment and overfill prevention systems meeting the requirements of Section 2635(b) of Title 23 of the California Code of Regulations.
- Fit fuel dispensing nozzles with “hold-open latches” (automatic shutoffs) except where prohibited by local fire departments.

- Post signs at the fuel dispenser or fuel island warning vehicle owners/operators against “topping off” of vehicle fuel tanks.

New or Substantially Remodeled Vehicle Service Facilities

The elements listed below should be included in the design and construction of new or substantially remodeled fuel dispensing facilities.

- • Fuel dispensing areas must be paved with portland cement concrete (or, equivalent smooth impervious surface), with a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water. The fuel dispensing area is defined as extending 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus 1 foot, whichever is less. The paving around the fuel dispensing area may exceed the minimum dimensions of the “fuel dispensing area” stated above.
- • The fuel dispensing area must be covered and the cover’s minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area.

Note: Substantially Remodeled Facilities – One of the following criteria must be met before a facility is deemed to be substantially remodeled and’ the design elements described above are required to be included in the new design and construction:

- ✓ the canopy cover over the fuel dispensing area is being substantially replaced (not including cosmetic/facial appearance changes only) and the footing is structurally sufficient to support a cover of the minimum dimensions described above, or
- ✓ one or more fuel dispensers are relocated or added in such a way that the portland cement concrete (or, equivalent) paving and grade break or the canopy cover over the fuel dispensing area do not meet the minimum dimensions as defined above. Replacement of existing dispensers does not, by itself, constitute a substantial remodel.

The following element should be included in the design and construction of new or substantially remodeled vehicle service facilities.

- ✓ Grade and pave the outdoor waste receptacle area to prevent run-on of storm water.

Rationale for assigning high priority to selected BMPs

BMPs that are assigned high priority (●●●) are mostly preventative practices that are inexpensive to implement versus collection, treatment and disposal of water that has picked up pollutants. The rationale used in this report is listed below:

- 1) Rationale: Prevention practices are cost effective and relatively inexpensive to implement vs. collection, treatment and disposal of wastewater. Materials to achieve dry cleaning are readily available and material can be disposed of through existing practices.
- 2) Rationale: Pollutants from incidental spills and leaks and trash will collect in storm drain facilities during dry weather period and will be a significant source of pollutants during the first significant storm. Cleaning will remove this potential source.
- 3) Rationale: The public in general do not realize that storm drains flow directly through to the ocean without treatment. Labeling of storm drains is an effective method of public education.
- 4) Rationale: HAZMAT and HAZWASTE are toxic to aquatic life and waterfowl in streams and ocean and prevention of spills is more cost effective than cleanup.
- 5) Rationale: Spills are cheaper to clean up when quickly contained. A spill response plan will prepare employees to use equipment and material available for contaminated and cleanup and to ensure their safety while doing the cleanup.
- 6) Rationale: Improperly plumbed floor drains can become a direct point of discharge of spills that occur indoor and outdoors, to streams and other surface waters.
- 7) Rationale: Car washing compounds including soaps and wheel cleaners are toxic to aquatic life and wildlife and must be prevented from entering the storm drainage system.

Note: This guidance is based primarily on Best Management Practice Guide – Retail Gasoline Outlets, prepared by California Retail Gasoline Outlet Work Group of SWQTF 1997.

Sources of Additional Information

Additional information on BMPs for vehicle service facilities is available in the following publications:

Alameda County Urban Runoff Clean Water Program, 1994. *Auto Radiator Service And Fishing*. Alameda County, California.

- Alameda County Urban Runoff Clean Water Program, 1994. *Auto Body Repair and Refinishing and Fishing*. Alameda County, California.
- Alameda County Urban Runoff Clean Water Program, 1994. *Auto Wrecking And Fishing*. Alameda County, California.
- Alaska Health Project, 1987. *Waste Reduction Makes Good Business Sen\$e for Vehicle Repairers*.
- BADA/BASMAA, 1995. *Your Shop Can Make a Difference! What vehicle service shops can do to protect water quality in the Bay and Delta*. Bay Area Dischargers Association and Bay Area Stormwater Management Agencies Association. Prepared by the Bay Area Pollution Prevention Group. Oakland, California.
- California DTSC, 1992. *Hazardous Waste Minimization Fact Sheet for Auto Paint Shops*. Doc. No. 202. California Department of Toxic Substances Control. Sacramento, California.
- California DTSC, 1992. *Hazardous Waste Minimization Checklist s Assessment Manual for Auto Paint Shops*. Doc. No. 406. California Department of Toxic Substances Control. Sacramento, California.
- California DTSC, 1993. *Fact Sheet, Handling and Transport of Spent Lead-Acid Storage Batteries for Recycling*. Doc. No. 102. California Department of Toxic Substances Control, Office of Pollution Prevention and Technology Development. Sacramento, California.
- California DTSC, 1993. *Fact Sheet, Used Oil: Handling, Storage, and Transport for Recycling*. Doc. No. 103. California Department of Toxic Substances Control, Office of Pollution Prevention and Technology Development. Sacramento, California.
- California DTSC, 1993. *Fact Sheet, Used Oil Filters: Handling, Storage, and Transport for Recycling*. Doc. No. 104. California Department of Toxic Substances Control, Office of Pollution Prevention and Technology Development. Sacramento, California.
- California SWQTF, 1993. *California Storm Water Best Management Practices Handbooks - Industrial*. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe & Associates, and Resource Planning Associates.
- California SWQTF, 1997. *Best Management Practice Guide – Retail Gasoline Outlets*. Prepared by Retail Gasoline Outlet Work Group.
- City and County of San Francisco, 1991. *Service Station Hazardous Waste Reduction and Management Checklist*. San Francisco Hazardous Waste Program.

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- City and County of San Francisco, 1994. *The Green Wrench Guide, Pollution Prevention Tips for Auto Repair and Body Shops*. San Francisco Water Pollution Prevention Program, Bureau of Environmental Regulation and Management.
- City and County of San Francisco, 1994. *Shop Information Package, Automotive Repair Facilities*. San Francisco Water Pollution Prevention Program, Bureau of Environmental Regulation and Management.
- County Sanitation Districts of Los Angeles County, 1990. *Radiator Repair Industry, Pollution Prevention Opportunities Checklist.*, California.
- City of Los Angeles, 1991. *Fact Sheet: The Automotive maintenance Industry - Basic Environmental and Business Requirements*. Hazardous & Toxic Materials Office, Board of Public Works.
- City of Los Angeles, 1992. *Fact Sheet: The Radiator Repair Industry - Basic Environmental and Business Requirements*. Hazardous & Toxic Materials Office, Board of Public Works.
- City of Manhattan Beach, 1994. *Ocean Safe Practices for the Auto-Industry and How to Become an Ocean Safe Enterprise, A Guide for the Automotive Industry*. Manhattan Beach, California.
- City of San Jose, 1992. *The Pollution Solution For The Automotive Industry*. San Jose, California.
- City of Santa Monica. *Hazardous Waste Reduction Facts: Automotive Painting*. Department of General Services. Santa Monica, California.
- City of Santa Monica. *Hazardous Waste Reduction Facts: Vehicle S Equipment Repair and Maintenance Shops*. Department of General Services. Santa Monica, California.
- City of Sunnyvale, 1994. *Automotive Best Management Practices Handbook*. City of Sunnyvale Industrial Waste Pretreatment Program. Sunnyvale, California.
- Connecticut Technical Assistance Program. *Waste Reduction Checklist, Automotive Repair*. Hartford, Connecticut.
- MnTAP, 1991. *Auto Body Repair: Hazardous waste management and reduction*. #28. Minnesota Technical Assistance Program Minneapolis, Minnesota.
- MnTAP, 1993. *Autobody Repair Shop Waste Reduction Measures*. #91. Minnesota Technical Assistance Program Minneapolis, Minnesota.
- MnTAP, 1994. *Waste Management Guidance for Oil Cleanup*. #65. Minnesota Technical Assistance Program. Minneapolis, Minnesota.

- MnTAP, 1994. *Vehicle Maintenance and Repair Self-Assessment*. #47. Minnesota Technical Assistance Program. Minneapolis, Minnesota.
- MnTAP, 1994. *Managing Used Oil Sorbents*. #52. Minnesota Technical Assistance Program. Minneapolis, Minnesota.
- MnTAP, 1994. *Waste Reduction Alternatives for Spray Painting and Coating*. #85. Minnesota Technical Assistance Program. Minneapolis, Minnesota. ,
- NEIWPC, 1994. *The Tuned-Up Shop, Best Management Tips For A Smooth-Running Environmentally Friendly Auto Repair Operation*. New England Interstate Water Pollution Control Commission. Wilmington, Massachusetts.
- New Jersey Department of Environmental Protection. *Vehicle Maintenance, Technical Information Publication (TIP)*. Division of Hazardous Waste Management. Hazardous Waste Minimization Program. Trenton, New Jersey.
- North Carolina Department of Natural Resources and Community Development, 1986. *Pollution Prevention Tips, Waste Reduction Options: Radiator Service Firms*. Pollution Prevention Pays Program. Raleigh, North Carolina.
- North Carolina Department of Environment, Health, and Natural Resources, 1990. *Pollution Prevention Tips, Waste Reduction Options: Automobile Salvage Yards*. Pollution Prevention Program. Raleigh, North Carolina.
- Regional Water Quality Control Plant-Palo Alto, 1992. *Best Management Practices for Automotive-Related Industries, Sewer Use Ordinance for Vehicle Service Repair*. Palo Alto, California.
- Regional Water Quality Control Plant-Palo Alto, 1993. *Shop Information Package, Vehicle Service Facility Waste Minimization Program*. Palo Alto, California.
- San Mateo Countywide STOPPP, 1995. *Pollution Prevention Practices for Automotive Service and Repair Shops*. San Mateo Countywide Stormwater Pollution Prevention Program. San Mateo County, California.
- USEPA, 1990. *Vehicle Maintenance*. EPA/530-SW-90-027a. U.S. Environmental Protection Agency.
- USEPA. *Does your facility generate automotive service wastes ?* U.S. Environmental Protection Agency, Underground Injection Control Program.
- USEPA. *Pit Stops, The Be-Kind-To-The-Environment-In-Your-Shop Game*. U.S. Environmental Protection Agency, Region I. Boston, Massachusetts.

Virginia DEQ. *Pollution Prevention, Stop Driving Up Your Costs*. Virginia Department of Environmental Quality, Office of Pollution Prevention. Richmond, Virginia.

Washington DOE, 1992. *Managing Hazardous Wastes: A Guide for Transmission Shops*. 92-BR-10. Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program. Olympia, Washington.

Washington WE, 1992. *Managing Hazardous Wastes: A Guide for Automotive Repair Shops*. 92BR-1S Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program. Olympia, Washington.

Washington DOE, 1992. *Managing Hazardous Wastes A Guide for Service Stations*. 92-BR-13. Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program. Olympia, Washington.

Washington DOE, 1993. *Auto Body Restoration and Painting A Success Story in Waste Reduction*. #6. Washington State Department of Ecology, Waste Reduction, Recycling, and Litter Control Program. Olympia, Washington.

Washington DOE, 1995. *Best Management Practices Manual for Automobile Dealerships*. 95405A. Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program. Olympia, Washington.