

BG-23 Automotive Services Facilities— Auto Recycling



Photo Credit: Geoff Brosseau

Description

This category includes facilities that impound, store, dismantle, and sell vehicles and vehicle parts. These facilities are required to obtain permit coverage under the General Permit. This guide sheet is intended to assist these facilities with permit compliance but does not supersede permit requirements. Activities include draining fluids from vehicles, crushing and scrapping vehicle bodies, and recovering and recycling parts and vehicle fluids. Information specific to body repair, maintenance, and service stations is provided in other guide sheets.

Approach

Minimize exposure of impound, dismantling, crushing, and storage areas rain and runoff to by using cover and containment. In and around these areas, use good housekeeping measures to minimize the generation of pollutants. Make stormwater pollution prevention best management practices (BMPs) a part of standard operating procedures and the employee training program. Provide employee education materials in the first language of employees, as necessary.

Pollutant Sources

- Draining fluids from vehicles
- Crushing and scrapping vehicle bodies
- Recovering and recycling parts and vehicle fluids
- Unpaved or non-vegetated areas

Relevant Pollutants

- Mercury
- Other heavy metals (aluminum, cadmium, chromium, copper, iron, lead, and zinc)
- Oils and greases
- polycyclic aromatic hydrocarbons PAHs
- Toxic chemicals (e.g., antifreeze)
- Sediment
- Trash



BG-23 Automotive Services Facilities— Auto Recycling

Source Control BMPs

The BMPs are listed in this table by activity or area.

Good Housekeeping	General Practices <ul style="list-style-type: none"> □ The inspection of an incoming vehicle should include a check for fluid leaks and for unwanted material that could have been left in the vehicle. Reinspect work and storage areas for signs of leaking vehicles, parts, and equipment. □ Construct fences or other physical barriers to act as visual and noise barriers, help to control dust, help prevent theft, and control the direction of runoff. □ Maintain an organized inventory of materials used at the facility. □ Consider indoor storage of vehicles, parts, and equipment and the use of berms and/or dikes to control stormwater runoff. Employee and Customer Education <ul style="list-style-type: none"> □ Develop a stormwater management policy statement for your employees. Management can provide direction and support for pollution prevention by reviewing this policy with employees and keeping it posted. □ Ensure that employees are trained to follow your pollution prevention practices and to monitor customers to help ensure they prevent pollution as well. Train employees when they are hired and annually after that. Emphasize that, by following these practices, they are helping to protect the local waterways.
	<ul style="list-style-type: none"> □ Ensure that non-English-speaking employees are also trained in these practices (e.g., use a bilingual instructor, post signs, and provide written information in their own language). □ Have customers sign a form that makes them responsible for preventing spills. Provide them with drip pans when needed. □ Label storm drain inlets with a stormwater pollution prevention message. Vehicle Dismantling/Fluid Management Site Configuration <ul style="list-style-type: none"> □ Confine the dismantling and storage of vehicles, parts, and equipment to designated areas that are paved, covered and bermed. Paving should be concrete or other less porous surface. Consider using an epoxy type of sealant. Berms can be rounded like speed bumps so that vehicles and forklifts can move over them.

BG-23 Automotive Services Facilities— Auto Recycling

- Consider constructing an impound/inventory area with a nonporous surface for leaking vehicles prior to dismantling.
- Remove fluids as soon as possible from vehicles brought into the facility for processing or dismantling. Use a funnel adapter to a “quarter barrel” whenever possible. Transfer the contents of drip pans or quarter barrels to the designated waste storage area as soon as possible.

Fluid Removal

- If fluids must be drained or oily parts removed in an unpaved area, use extra-large drip pans.
- To prevent accidental spills, do not leave drip pans outside, exposed to rainfall, or left unattended.
- Drain fluids from all parts of a vehicle prior to disposal.
- Drain fluids and remove parts as follows before customers can spill or disperse them:
 - ✓ **Engine oil**—Should be drained and stored in labeled, doubled-walled aboveground tanks. Used oil can be either recycled for on-site use in a waste oil heater or sent off-site for re-refining or fuel blending.
 - ✓ **Oil filters**—Drain fluids and crush the filters prior to disposal. A bearing press can be used for this purpose by placing a container under the press to collect the oil.
 - ✓ **Antifreeze**—Should be reclaimed and reused or properly disposed of.
 - ✓ **Window washer fluid**—Drain for reuse.
 - ✓ **Freon**—Recover first.
 - ✓ **Fuel**—Recover first.

Other Vehicle Parts

- **Batteries**—Remove as soon as possible after vehicle enters the yard. Store good batteries inside for resale. Store dead batteries inside on pallets (if your floor is gravel or dirt, put a layer of absorbent material underneath the pallet) or in storage containers, or outside in leakproof, covered containers.
- **Mercury-containing switches**—Protect from shredding or crushing by removing from hood and trunk light assemblies and antilock brakes. Store in a covered container in a secure, dry area. Dispose of legally by having them processed at a recycling facility that recovers mercury.
- **Mufflers, tailpipes, and catalytic converters**—Recover and protect from shredding.

BG-23 Automotive Services Facilities— Auto Recycling

	<ul style="list-style-type: none"> □ Gas tanks—Remove and drain. □ Jacks—Remove and prevent customers from using. □ Tires—Remove, store, recycle, and prevent water accumulation inside tires. Do not bury or discard in a landfill. □ Air bags—Deploy or recover per manufacturer’s guidelines. □ Burnt autos—Cover and remove as soon as possible. <p>Storage of Vehicles and Parts</p> <ul style="list-style-type: none"> □ Store wastes in covered, bermed (contained) areas that have no drains. Waste containers should be constructed of materials that are impermeable to the liquids in the first container. □ Double-contain fluids to prevent accidental spills to the sewer system. Keep double containment clean and dry. □ Store under cover and on an impermeable surface parts that might leak fluids such as engines, transmissions, radiators, and batteries. □ Keep vehicle hoods down when not in use. For vehicles without hoods, use covers such as tarps or sheet metal to keep rainfall out. □ Place absorbent in bottom of core bins to absorb fluids leaking from core parts. □ Keep used oil separate from part-cleaning solvents, antifreeze, and fuel. Engine oil, transmission fluid, brake fluid, and power steering fluid can be combined and stored together. □ Label storage containers of all fluids and waste materials. □ Use canvas or sheets of plastic to temporarily cover storage areas.
	<ul style="list-style-type: none"> □ Transmission and engine cores can be stored in plastic storage boxes with one of the following: <ul style="list-style-type: none"> ✓ Leak proof tops; ✓ Lugger boxes without solid bottoms and covered by a permanent roof; ✓ Lugger boxes without solid bottoms stored under a permanent roof on a concrete pad with curbing; or ✓ An enclosed trailer with a steel floor to contain fluid runoff and a drain in the floor to properly remove waste fluids. <p>Parts Cleaning</p>

BG-23 Automotive Services Facilities— Auto Recycling

	<ul style="list-style-type: none"> ❑ Perform all part-cleaning operations indoors or cover and berm outside cleaning areas. ❑ Clean parts by using minimal amounts of solvents or detergents. ❑ Recycle and reuse cleaning fluids where practicable. ❑ Have spent cleaning solutions removed by a waste hauler or recycler. ❑ Use phosphate-free biodegradable detergents. Consider using detergent- or water-based cleaning systems in place of organic solvent degreasers. <p>Vehicle Crushing Activities</p> <ul style="list-style-type: none"> ❑ Provide a containment system—such as a concrete pad with berms—for vehicle crushers. Fluids and stormwater runoff from the bermed areas could be discharged into a sump, oil/water separator, sanitary sewer, or other appropriate drainage system that prevents stormwater pollution. ❑ Consider placing crushing and scrapping areas under cover. ❑ If a gravel/geotextile fabric foundation is provided under a crusher, install a fluid collection system to capture fluids that are released during the crushing operation. ❑ Capture crusher fluids to prevent spillage. Collect this mixture of fluids in a spill proof covered container, test the fluid, and dispose of it properly. It should not be allowed to drain onto the ground. Keep the drain within the crusher clear so that the fluids do not collect and overflow from the crusher onto the ground.
Preventive Maintenance	<ul style="list-style-type: none"> ❑ Develop a preventive maintenance program that involves timely inspections and/or maintenance of the crusher and facility equipment and vehicles. The program might include the following: <ul style="list-style-type: none"> ✓ Service checklists and maintenance logs for each piece of equipment ✓ Employee education and instruction material ✓ Review of manufacturer-recommended parts replacement and maintenance activities and frequencies ❑ Keep the crusher and other equipment clean by frequently wiping off accumulated oil and grease that might be exposed to stormwater (except if needed for proper operation of the equipment) or that might hide equipment trouble spots.

BG-23 Automotive Services Facilities— Auto Recycling

	<ul style="list-style-type: none"> ❑ Conduct scheduled maintenance of facility equipment and vehicles in a covered or bermed area, where practicable. ❑ Schedule periodic inspections of equipment for leaks, spills, and malfunctioning, worn, or corroded parts. Regularly inspect tanks, valves, hoses, and containers. Look for signs of wear or weakness. ❑ On secondary containment structures, regularly inspect the valves, seals around the outlet pipes, the outlet pipes themselves, and the dikes for cracks, damage, or leaks. ❑ When secondary containment reservoirs require pumping or release, visually inspect or test a sample of collected water for pollutants. If pollutant levels are significant or there is contamination, pump the accumulated water into barrels or into a tanker truck and haul to a wastewater treatment facility. ❑ Repair or replace parts before they wear out. ❑ Repair malfunctioning equipment that is responsible for any leak or spill as soon as possible. ❑ Secure and lock aboveground tank storage areas. Inspect tanks, pumps, fittings, pipes, and containers routinely for integrity and leaks. ❑ Perform maintenance activities indoors. ❑ Keep valves on secondary containment structures in the “off” position at all times, except when removing collected water.
Spill Prevention and Response	<p>Prevention</p> <ul style="list-style-type: none"> ❑ Install safeguards (such as diking or berming) against accidental releases at dismantling and storage areas. ❑ Place waste fluid storage containers in a convenient and safe place to avoid having to move waste fluids long distances.
	<ul style="list-style-type: none"> ❑ Store containers and tanks on a concrete or impermeable surface, and if feasible, under cover. Label all containers according to content and hazard characteristics. Keep drums containing chemicals away from sumps and drains. Maintain good integrity of all storage containers. ❑ Provide spill cleanup equipment at locations where spills are most likely to occur. ❑ Make available safety data sheets and other safety materials that identify types of fluids with the potential to spill, indicate whether these fluids are hazardous or toxic, list appropriate safety equipment to be worn, and specify correct materials and procedures to use to clean up the spill.

BG-23 Automotive Services Facilities— Auto Recycling

	<ul style="list-style-type: none"> ❑ Establish cleanup procedures, including the use of dry absorbent materials and other cleanup methods to collect, dispose of, or recycle spilled or leaked fluids. Maintain an adequate supply of dry absorbent material on-site. Properly dispose of used absorbent materials. ❑ Never pour liquids or dry materials down a storm drain. ❑ Place drip pans, plastic sheets, or canvas tarps beneath vehicles, parts, and equipment during maintenance and dismantling activities. If any parts are removed, they should be placed in a drip pan. Drip pans should not be left unattended. ❑ When refueling vehicles and equipment, park as close to the pump as possible. Keep fuel nozzle upright when not in use, and replace nozzle securely in the pump. ❑ Pave refueling area to prevent contamination of the soil if a spill occurs. ❑ Equip fuel pumps and tanks with overflow prevention and automatic shut-off devices. <p>Response</p> <ul style="list-style-type: none"> ❑ Contain oil or other fluids spilled during parts removal. ❑ Control any spills that occur around fueling areas. ❑ Capture and clean up observed spills and leaks as soon as possible using dry absorbents, drip pan, towel, mops, pads, and booms. ❑ Keep spilled fluids from entering drains by using drain mats or plugs. Seal or remove unused floor drains. ❑ Remove soils with spilled fluids to prevent rainwater from carrying pollutants to local waterways. ❑ Contain oil or other fluids spilled during parts removal.
Erosion and Sediment Control	<ul style="list-style-type: none"> ❑ Implement appropriate vegetative, structural, or stabilization measures to limit soil erosion. ❑ Regularly sweep and clean paved surfaces to reduce sediment buildup. Sediment should be swept up and placed into a covered, watertight dumpster for proper disposal. ❑ Install filtering or diversion practices such as filter fabric fences, sediment filter booms, earthen or gravel berms, curbing, or equivalent measures. ❑ Install sediment traps, vegetative buffer strips, silt fencing, or equivalent measures to remove sediment prior to discharge through an inlet or catch basin.

BG-23 Automotive Services Facilities— Auto Recycling

	<ul style="list-style-type: none"> <input type="checkbox"/> Do not use vehicle fluids, oils, or fuels for dust control or weed control. <input type="checkbox"/> Establish and maintain vegetative cover in areas not used for vehicle salvage activities.
Non-Stormwater Discharges	<ul style="list-style-type: none"> <input type="checkbox"/> Disconnect or seal off all existing floor drains and sinks that are connected to the storm drainage system. <input type="checkbox"/> Wash vehicles and equipment in a contained area. <input type="checkbox"/> Do not steam-clean parts outside without proper wastewater containment. <input type="checkbox"/> Do not discharge steam-cleaning wastewater to a septic tank system because the oils might not be treated or removed in the system. <input type="checkbox"/> Do not pour liquid waste or parts wash water down storm drain inlets. <input type="checkbox"/> Do not hose down the shop floor if water would be conveyed to a storm drain.

Treatment Control BMPs

- Use vegetated swales and buffer strips, catch basin filters, and/or other similar measures to facilitate settling or filtering of pollutants in runoff.
- Construct grassed swales, berms, and diversions to direct water flow to a central point for better control and management.
- Properly maintain grassed swales by keeping them free of debris and litter, maintaining vegetation, and periodically removing accumulated sediment. Do not place material or waste in swales or in the runoff paths.
- Divert runoff away from material storage areas through practices such as dikes, berms, containment trenches, culverts, elevated concrete pads, and surface grading.
- Consider installing a detention pond. Monitor accumulation of sediments in the bottom of detention ponds. Remove accumulated metals and other materials from the bottom of detention ponds as needed.
- Considering installing oil/water separators to reduce the levels of petroleum-based oils in stormwater runoff. Test and clean out sediments and oily deposits that have accumulated in the oil/water separator. Test sediments for metals and other pollutants that might be expected to be present.

If treatment controls are installed at the facility, see section 4 of this Handbook for information on inspecting and maintaining the BMPs.

For information on designing treatment controls, see section 5 of the *Development Planning Handbook*.

BG-23 Automotive Services Facilities— Auto Recycling

More Information

Automotive Recyclers Association. 2017. *Environmental Compliance for Automotive Recyclers (ECAR), California Fact Sheets*. Available online at <http://www.ecarcenter.org/FactSheets.html>.

State of California Auto Dismantlers Association (SCADA). 2002. *Partners in the Solution Guidance Manual*. Available online at <http://www.scada1.com/wp-content/uploads/2014/03/partners-manual.pdf>.

Sustainable Conservation. n.d. *Stormwater Management, A Guide for Auto Recycler Owners and Operators*. (Pamphlet). Available online at http://www.suscon.org/autorecycling/pdfs/autorecycling_factsheet_english.pdf.

U.S. Environmental Protection Agency. 2006. *Industrial Stormwater Factsheets: Sector M-Automobile Salvage Yards*. Available online at http://www.epa.gov/npdes/pubs/sector_m_autosalvage.pdf.

References

Oregon Department of Environmental Quality. 2013. *Industrial Stormwater Best Management Practices Manual*. Available online at <https://www.oregon.gov/deq/FilterDocs/IndBMP021413.pdf>.

San Francisco Water Pollution Prevention Program. 1996. *Pollution Prevention Tips for Automotive Facilities*.

Sustainable Conservation. 2003. *Managing End-of-Life Vehicles to Minimize Environmental Harm White Paper on Sustainable Conservation's Auto Recycling Project*. Available online at http://suscon.org/autorecycling/pdfs/autorecycling_whitepaper_elvs.pdf.

Swamikannu, X. 1994. *Auto Recycler and Dismantler Facilities: Environmental Analysis of the Industry with a Focus on Storm Water Pollution*. Available online at <http://www.seas.ucla.edu/stenstro/d/denv13>.

U.S. Environmental Protection Agency. 2006. *Industrial Stormwater Fact Sheets: Sector M-Automobile Salvage Yards*. Available online at http://www.epa.gov/npdes/pubs/sector_m_autosalvage.pdf.