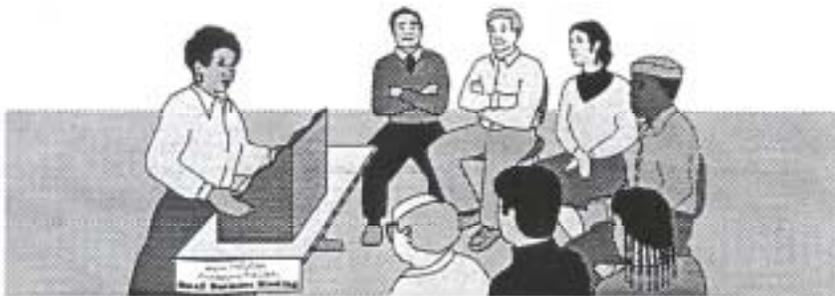


ACTIVITY: Employee/Subcontractor Training

CP – 15

**Description**

Employee/subcontractor training, like maintenance or a piece of equipment, is not so much a best management practice as it is a method by which to implement BMPs. This fact sheet highlights the importance of training and of integrating the elements of employee/subcontractor training from the individual source controls into a comprehensive training program as a part of a Storm Water Pollution Prevention Plan (SWPPP).

The specific employee/subcontractor training aspects of each of the source controls are highlighted in the individual fact sheets. The focus of this fact sheet is more general, and includes the overall objectives and approach for assuring employee/subcontractor training in stormwater pollution prevention. Accordingly, the organization of this fact sheet differs somewhat from the other fact sheets in this section.

Objective

Employee/subcontractor training should be based on four objectives:

- Promote a clear identification and understanding of the problem, including activities with the potential to pollute stormwater;
- Identify solutions (BMPs);
- Promote employee/subcontractor ownership of the problems and the solutions; and
- Integrate employee/subcontractor feedback into training and BMP implementation.

Approach

- Integrate training regarding stormwater quality management with existing training programs that may be required for your business by other regulations such as the 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) standard (29 CFR 1910.120); and the Spill Prevention Control and Countermeasure (SPCC) Plan (40 CFR 112).
- Supervisors and inspectors should receive additional annual 8-hour refresher courses.
- Businesses, particularly smaller ones that may not be regulated by Federal, State, or local regulations, may use the information in this BMP Manual to develop a training program to reduce their potential to pollute stormwater.
- Use the quick reference on disposal alternatives (Table CP-15-1) to train employee/ subcontractors in proper and consistent methods for disposal.

- Consider posting the quick reference table around the job site or in the on-site office trailer to reinforce training.
- Train employee/subcontractors in standard operating procedures and spill cleanup techniques described in the fact sheets. Employee/subcontractors trained in spill containment and cleanup should be present during the loading/unloading and handling of materials.
- Personnel who use pesticides should be trained in their use.
- Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employee/subcontractors can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do on-site.

**Primary
References**

California Storm Water Best Management Practice Handbooks, Construction and Industrial Handbooks, CDM et.al. for the California SWQTF, 1993.

Caltrans Storm Water Quality Handbooks, CDM et.al. for the California Department of Transportation, 1997.

TABLE CP-15-1 QUICK REFERENCE – DISPOSAL ALTERNATIVES

All of the waste products on this chart are prohibited from discharge to the storm drain system. Use this matrix to decide which alternative disposal strategies to use. **ALTERNATIVES ARE LISTED IN PRIORITY ORDER.**

Key: HHW Household hazardous waste (Metro Nashville-Davidson County-sponsored drop-off site at 941 Dr. Richard Adams Drive)
 POTW Publicly Owned Treatment Plant – Metro Water Services (MWS)
 MDPW-NPDES Metropolitan Department of Public Works (DPW) – National Pollutant Discharge Elimination System (NPDES) Office.

“Dispose to sanitary sewer” means dispose into sink, toilet, or sanitary sewer clean-out connection.

“Dispose as trash” means dispose in dumpsters or trash containers for pickup and/or eventual disposal in landfill.

“Dispose as hazardous waste” for business/commercial means contract with a hazardous waste hauler to remove and dispose.

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Painting: Street and Utility Maintenance			
Excess paint (oil based)	1. Recycle/reuse. 2. Dispose as hazardous waste.		1. Recycle/reuse. 2. Take to HHW drop-off.
Excess paint (water based)	1. Recycle/reuse 2. Dry residue in cans, dispose as trash. 3. If volume is too much to dry, dispose as hazardous waste.		1. Recycle/reuse. 2. Dry residue in cans, dispose as trash. 3. If volume is too much to dry, take to HHW drop-off.
Paint cleanup (oil based)	Wipe paint out of brushes, then: 1. Filter & reuse thinners, solvents. 2. Dispose as hazardous waste.		Wipe paint out of brushes, then: 1. Filter & reuse thinners, solvents. 2. Take to HHW drop-off.
Paint cleanup (water-based)	Wipe paint out of brushes, then 1. Rinse to sanitary sewer.		Wipe paint out of brushes, then 1. Rinse to sanitary sewer.
Empty paint cans (dry)	1. Remove lids, dispose as trash.		1. Remove lids, dispose as trash.
Paint stripping (with solvent)	1. Dispose as hazardous waste.		1. Take to HHW drop-off.
Building exterior cleaning (high-pressure water)	1. Prevent entry into storm drain and remove offsite. 2. Wash onto dirt area, spade in. 3. Collect (e.g. mop up) and discharge to sanitary sewer.	POTW-MWS	
Cleaning of building exteriors which have HAZARDOUS MATERIALS (e.g. mercury, lead) in paints	1. Use dry cleaning methods. 2. Contain and dispose washwater as hazardous waste (Suggestion: dry material first to reduce volume).		
General Construction and Painting: Street and Utility Maintenance (cont'd.)			

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL		RESIDENTIAL
	Disposal Priorities	Approval	
Non-hazardous paint scraping/sand blasting	1. Dry sweep, dispose as trash.		1. Dry sweep, dispose as trash.
HAZARDOUS paint scraping/sand blasting (e.g. marine paints or paints containing lead or tributyl tin)	1. Dry sweep, dispose as hazardous waste.		1. Dry sweep, take to HHW drop-off.
Soil from excavations during periods when storms are forecast	1. Should not be placed in street or on paved areas. 2. Remove from site or backfill by end of day. 3. Cover with tarpaulin or surround with silt fences, or use other runoff controls. 4. Place filter mat over storm drain. Note: Thoroughly sweep following removal of dirt in all four alternatives.		
Soil from excavations placed on paved surfaces during periods when storms are not forecast	1. Keep material out of storm conveyance systems and thoroughly remove via sweeping following removal of dirt.		
Cleaning streets in construction areas	1. Dry sweep and minimize tracking of mud. 2. Use silt ponds and/or similar pollutant reduction techniques when flushing pavement.		
Soil erosion, sediments	1. Cover disturbed soils, use erosion controls, block entry to storm drain. 2. Seed or plant immediately.		
Fresh cement, grout, mortar	1. Use/reuse excess 2. Dispose to trash		1. Use/reuse excess 2. Dispose to trash
Washwater from concrete/mortar (etc.) cleanup	1. Wash onto dirt area, spade in. 2. Pump and remove to appropriate disposal facility. 3. Settle, pump water to sanitary sewer.	POTW-MWS	1. Wash onto dirt area, spade in. 2. Pump and remove to appropriate disposal facility. 3. Settle, pump water to sanitary sewer.
Aggregate wash from driveway/patio construction	1. Wash onto dirt area, spade in. 2. Pump and remove to appropriate disposal facility. 3. Settle, pump water to sanitary sewer.	POTW-MWS	1. Wash onto dirt area, spade in. 2. Pump and remove to appropriate disposal facility. 3. Settle, pump water to sanitary sewer.
Rinsewater from concrete mixing trucks	1. Return truck to yard for rinsing into pond or dirt area. 2. At construction site, wash into pond or dirt area.		
General Construction and Painting: Street and Utility Maintenance (cont'd.)			
Non-hazardous construction and demolition	1. Recycle/reuse (concrete, wood, etc.).		1. Recycle/reuse (concrete, wood, etc.).

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL		RESIDENTIAL
	Disposal Priorities	Approval	
debris	2. Dispose as trash.		2. Dispose as trash.
Hazardous demolition and construction debris (e.g. asbestos)	1. Dispose as hazardous waste.		1. Do not attempt to remove yourself. Contact asbestos removal service for safe removal and disposal. 2. Very small amounts (less than 5 lbs.) may be double-wrapped in plastic and taken to HHW drop-off.
Saw-cut slurry	1. Use dry cutting technique and sweep up residue. 2. Vacuum slurry and dispose off-site. 3. Block storm drain or berm with low weir as necessary to allow most solids to settle. Shovel out gutters; dispose residue to dirt area, construction yard or landfill.		
Construction dewatering (Nonturbid, uncontaminated groundwater)	1. Recycle/reuse. 2. Discharge to storm drain.		
Construction dewatering (Other than nonturbid, uncontaminated groundwater)	1. Recycle/reuse. 2. Discharge to sanitary sewer. 3. As appropriate, treat prior to discharge to storm drain.	POTW-MWS MDPW-NPDES	
Portable toilet waste	1. Leasing company shall dispose to sanitary sewer at POTW.	POTW-MWS	
Leaks from garbage dumpsters	1. Collect, contain leaking material. Eliminate leak, keep covered, return to leasing company for immediate repair. 2. If dumpster is used for liquid waste, use plastic liner.		
Leaks from construction debris bins	1. Insure that bins are used for dry nonhazardous materials only (Suggestion: Fencing, covering help prevent misuse).		
Dumpster cleaning water	1. Clean at dumpster owner's facility and discharge waste through grease interceptor to sanitary sewer. 2. Clean on site and discharge through grease interceptor to sanitary sewer.	POTW-MWS POTW-MWS	

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
General Construction and Painting: Street and Utility Maintenance (cont'd.)			
Cleaning driveways, paved areas (Special Focus = Restaurant alleys, grocery dumpster areas)	<ol style="list-style-type: none"> 1. Sweep and dispose as trash (Dry cleaning only). 2. For vehicle leaks, restaurant/grocery alleys, follow this 3-step process: <ol style="list-style-type: none"> a. Clean up leaks with rags or absorbents. b. Sweep, using granular absorbent material (cat litter). c. Mop and dispose of mopwater to sanitary sewer (or collect rinsewater and pump to the sanitary sewer). 3. Same as 2 above, but with rinsewater (2c)(no soap) discharged to storm drain. 		<ol style="list-style-type: none"> 1. Sweep and dispose as trash (Dry cleaning only). 2. For vehicle leaks follow this 3-step process: <ol style="list-style-type: none"> a. Clean up leaks with rags or absorbents; dispose as hazardous waste. b. Sweep, using granular absorbent material (cat litter). c. Mop and dispose of mopwater to sanitary sewer.
Steam cleaning of sidewalks, plazas	<ol style="list-style-type: none"> 1. Collect all water and pump to sanitary sewer. 2. Follow this 3-step process: <ol style="list-style-type: none"> a. Clean oil leaks with rags or adsorbents. b. Sweep (Use dry absorbent as needed). c. Use no soap, discharge to storm drain. 		
Potable water/line flushing Hydrant testing	<ol style="list-style-type: none"> 1. Deactivate chlorine by maximizing time water will travel before reaching creeks. 		
Super-chlorinated (above 1 ppm) water from line flushing	<ol style="list-style-type: none"> 1. Discharge to sanitary sewer. 2. Complete dechlorination required before discharge to storm drain. 		
Landscape/Garden Maintenance			
Pesticides	<ol style="list-style-type: none"> 1. Use up. Rinse containers, use rinsewater as product. Dispose rinsed containers as trash. 2. Dispose unused pesticide as hazardous waste. 		<ol style="list-style-type: none"> 1. Use up. Rinse containers, use rinsewater as pesticide. Dispose rinsed container as trash. 2. Take unused pesticide to HHW drop-off.
Garden clippings	<ol style="list-style-type: none"> 1. Compost. 2. Take to Landfill. 		<ol style="list-style-type: none"> 1. Compost. 2. Dispose as trash.
Tree trimming	<ol style="list-style-type: none"> 1. Chip if necessary, before composting or recycling. 		<ol style="list-style-type: none"> 1. Chip if necessary, before composting or recycling.

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Landscape/Garden Maintenance (cont'd.)			
Swimming pool, spa, fountain water (emptying)	<ol style="list-style-type: none"> 1. Do not use metal-based algicides (i.e. Copper Sulfate). 2. Recycle/reuse (e.g. irrigation). 3. Determine chlorine residual = 0, wait 24 hours and then discharge to storm drain. 	POTW-MWS	<ol style="list-style-type: none"> 1. Do not use metal-based algicides (i.e. Copper Sulfate). 2. Recycle/reuse (e.g. irrigation). 3. Determine chlorine residual = 0, wait 24 hours and then discharge to storm drain.
Acid or other pool/spa/fountain cleaning	<ol style="list-style-type: none"> 1. Neutralize and discharge to sanitary sewer. 	POTW-MWS	
Swimming pool, spa filter backwash	<ol style="list-style-type: none"> 1. Reuse for irrigation. 2. Dispose on dirt area. 3. Settle, dispose to sanitary sewer. 		<ol style="list-style-type: none"> 1. Use for landscape irrigation. 2. Dispose on dirt area. 3. Settle, dispose to sanitary sewer.
Vehicle Wastes			
Used motor oil	<ol style="list-style-type: none"> 1. Use secondary containment while storing, send to recycler. 		<ol style="list-style-type: none"> 1. Put out for curbside recycling pickup where available. 2. Take to Recycling Facility or auto service facility with recycling program. 3. Take to HHW events accepting motor oil.
Antifreeze	<ol style="list-style-type: none"> 1. Use secondary containment while storing, send to recycler. 		<ol style="list-style-type: none"> 1. Take to Recycling Facility.
Other vehicle fluids and solvents	<ol style="list-style-type: none"> 1. Dispose as hazardous waste. 		<ol style="list-style-type: none"> 1. Take to HHW event.
Automobile batteries	<ol style="list-style-type: none"> 1. Send to auto battery recycler. 2. Take to Recycling Center. 		<ol style="list-style-type: none"> 1. Exchange at retail outlet. 2. Take to Recycling Facility or HHW event where batteries are accepted.
Motor home/construction trailer waste	<ol style="list-style-type: none"> 1. Use holding tank. Dispose to sanitary sewer. 		<ol style="list-style-type: none"> 1. Use holding tank, dispose to sanitary sewer.
Vehicle washing	<ol style="list-style-type: none"> 1. Recycle. 2. Discharge to sanitary sewer, never to storm drain. 	POTW-MWS	<ol style="list-style-type: none"> 1. Take to Commercial Car Wash. 2. Wash over lawn or dirt area. 3. If soap is used, use a bucket for soapy water and discharge remaining soapy water to sanitary sewer.
Mobile vehicle washing	<ol style="list-style-type: none"> 1. Collect washwater and discharge to sanitary sewer. 	POTW-MWS	
Rinsewater from dust removal at new car fleets	<ol style="list-style-type: none"> 1. Discharge to sanitary sewer. 2. If rinsing dust from exterior surfaces for appearance purposes, use no soap (water only); discharge to storm drain. 	POTW-MWS	

DISCHARGE/ACTIVITY	BUSINESS/COMMERCIAL Disposal Priorities	Approval	RESIDENTIAL Disposal Priorities
Vehicle Wastes (cont'd.)			
Vehicle leaks at Vehicle Repair Facilities	Follow this 3-step process: 1. Clean up leaks with rags or absorbents. 2. Sweep, using granular absorbent material (cat litter). 3. Mop and dispose of mopwater to sanitary sewer.		
Other Wastes			
Carpet cleaning solutions & other mobile washing services	1. Dispose to sanitary sewer.	POTW-MWS	1. Dispose to sanitary sewer.
Roof drains	1. If roof is contaminated with industrial waste products, discharge to sanitary sewer. 2. If no contamination is present, discharge to storm drain.		
Cooling water Air conditioning condensate	1. Recycle/reuse. 2. Discharge to sanitary sewer.	POTW-MWS	
Pumped groundwater, infiltration/foundation drainage (contaminated)	1. Recycle/reuse (landscaping, etc.) 2. Treat if necessary; discharge to sanitary sewer. 3. Treat and discharge to storm drain.	MDPW-NPDES POTW-MWS MDPW-NPDES	
Fire fighting flows	If contamination is present, Fire Dept. will attempt to prevent flow to stream or storm drain.		
Kitchen Grease	1. Provide secondary containment, collect, send to recycler. 2. Provide secondary containment, collect, send to POTW via hauler.	POTW-MWS	1. Collect, solidify, dispose as trash.
Restaurant cleaning of floor mats, exhaust filters, etc.	1. Clean inside building with discharge through grease trap to sanitary sewer. 2. Clean outside in container or bermed area with discharge to sanitary sewer.		
Clean-up wastewater from sewer back-up	1. Follow this procedure: a. Block storm drain, contain, collect, and return spilled material to the sanitary sewer. b. Block storm drain, rinse remaining material to collection point and pump to sanitary sewer (no rinsewater may flow to storm drain).		