sorting, and storage of logs. In addition, some cutting may be performed such as chopping off tree branches and sectioning of tree trunks for easier handling during transport. Although not typically performed at wood collection facilities, chipping may be performed at facilities serving pulp industries. Residues generated at these sites may include bark, coarse sawdust, and wood chunks.

Significant materials that have the potential to come in contact with storm water discharges at facilities practicing these activities include: uncut logs (hardwood and softwoods), wood bark, wood chips, coarse saw dust, other waste wood material, petroleum and other products for equipment maintenance (fuels, motor oils, hydraulic oils, lubricant fluids, brake fluids, and antifreeze), herbicides, pesticides, and fertilizers, material handling equipment (forklifts, loaders, vehicles, chippers, debarkers, cranes, etc.).

These log storage and handling activities described above have the potential to discharge pollutants including bark and wood debris, total suspended solids (TSS), and leachates. ¹⁸ The leachate generated from these operations from the decay of wood products can contain high levels of TSS and biochemical oxygen demand (BOD₅). ¹⁹

b. Untreated Wood Lumber and Residue Generation Activities and Untreated Wood Materials Storage. The primary product from sawmills and other cutting activities is lumber. However, residues such as debarked wood chips; whole tree chips and slab wood; bark; and sawdust constitutes approximately 25 percent of the total wood production. At large saw mills, approximately 2,500 lbs of residue is generated for each 1,000 board feet of lumber derived.

Facilities that produce untreated lumber and residues can be classified under most of the SIC Codes in Major group 24. These facilities include saw mill and planing mill facilities classified in group 242; millwork, veneer, plywood and structural wood member manufacturing facilities classified in

group 243; wood container manufacturing facilities in group 244; wood building and mobile home manufacturing facilities in group 245; and miscellaneous wood product manufacturers in group 249.

These facilities may engage in one or more activities such as log washing, bark removal, milling, sawing, resawing edging, trimming, planing, machining, air drying, and kiln drying. In addition, there may be associated boiler operations, loading and unloading activities and storage activates.

Effluent guidelines have been established at 40 CFR Part 429 Subparts A, I, and J for discharges from log washing, debarking and wet storage, respectively. These discharges are considered process waters and are subject to the effluent limitations of each subpart

each subpart.

Some facilities generate residue as a product, in lieu of lumber or other finished products, while other facilities may generate residues as a waste product. In most cases, there are markets for these residues. For example, chips and sawdust are used in the production of pulp and paper and wood products manufacturing. A summary of the residues generated and their potential uses include: bark (used in landscaping, compost, recreational applications (trails), energy recovery); wood chips (used in pulp and paper mill feed, landscaping, recreational applications, fire logs, energy recovery); planer shavings (used in particle board, livestock bedding, compost, fire logs, domestic pet litter, energy recovery); and sawdust (used in particle board, livestock bedding, compost, fire logs, domestic pet litter, energy recovery.) 22

Storage activities at these sites include wet and dry storage of logs and storage of residuals. Wet storage, called "wet decking," is a process used when logs are to be stored for an extended period of time. Wet storage retards decaying and infestation by insects. The logs may be stored under water in ponds or may be placed in areas where water is continuously sprayed over them. Residuals are typically stored dry.

Storm water discharges from lumber and residue generation and storage may come in contact with the following types of wastes and/or materials at the facility which can then contribute pollutants to the storm water: uncut logs (hardwood and softwoods), wood bark, wood chips, wood shavings, sawdust, green lumber, rough and finished lumber, other waste wood material,

nonhazardous wood ash, above and below ground fuel storage tanks for diesel, gasoline, propane and fuel oil, finishing chemicals (stain, lacquer, varnish, paints, water repellant, sealants), solvents and cleaners, petroleum and other products for equipment maintenance (fuels, motor oils, hydraulic oils, lubricant fluids, brake fluids, and antifreeze), herbicides, pesticides, and fertilizers, sawmill equipment, material handling equipment (Forklifts, loaders, vehicles, chippers, debarkers, cranes, etc.), boiler water treatment chemicals, scrap metals, scrap equipment and plastics, boiler blowdown water, and leachate from decaying organic matter.

Pollutants resulting from lumber and residue generation and storage activities are typically conventional in nature. Low pH levels can result from the leachate of decaying organic materials. TSS and BOD₅ may be elevated in this leachate.²³ In addition to leachate, washed away residue particles contribute to TSS loadings. Equipment and machinery at the facility site may result in the discharge of oil and grease.

c. Wood Surface Protection Activities, Chemicals and Surface Protected Materials Storage. At many hardwood saw mills, wood surface protection is conducted to prevent sap stain. Sap stain is the unsightly discoloration of lumber products caused by fungus.²⁴ Surface protection is a cosmetic fix only and differs from wood preservation which is a practice designed to enhance the wood's structural integrity.

Surface protection is accomplished by one of three methods: spraying, ranging from manual spraying with a garden hose to more sophisticated on-line high pressure spray boxes; dipping, a batch process where lumber is immersed then removed from the formulation; and green chain operations, a continuous immersion operation where lumber is pulled through the protection tanks by conveyer.²⁵

Historically, the primary chemical used in surface protection has been commercial pentachlorophenate.

Concentrated chemicals are diluted to 0.5 to 1 percent pentachlorophenol for surface protection. This concentration is lower than the 2 percent to 9 percent pentachlorophenol used in wood

¹⁸ "NPDES Docket No. 1085–07–22–402, NPDES Appeal No. 86–14: In the Matter of Shee Atika, Incorporated," January 21, 1988.

¹⁹ "Regulatory Guidance and Waste Reduction Manual for United States Sawmills (Draft)," EPA Office of Solid Waste, January 12, 1993.

²⁰ "Using Best Management Practices to Prevent and Control Pollution from Hardwood Residue Storage Sites," Pennsylvania Hardwoods Development Council, May 15, 1992.

²¹ "Regulatory Guidance and Waste Reduction Manual for United States Sawmills (Draft)," EPA Office of Solid Waste, January 12, 1993.

²² "Regulatory Guidance and Waste Reduction Manual for United States Sawmills (Draft)," EPA Office of Solid Waste, January 12, 1993.

²³ "Regulatory Guidance and Waste Reduction Manual for United States Sawmills (Draft)," EPA Office of Solid Waste, January 12, 1993.

²⁴ "Background Document Supporting the Proposed Listing of Wastes from Surface Protection Processes, Part One Final Engineering Analysis Volume 1," EPA Office of Solid Wastes, February 1993.

²⁵ "Regulatory Guidance and Waste Reduction Manual for United States Sawmills (Draft)," EPA Office of Solid Waste, January 12, 1993.