water, such as illicit connections,<sup>42</sup> spills, and other improperly dumped materials, may contribute significant levels of pollutants into waters of the United States.

A summary of industrial activities conducted by primary metals facilities in the group application process is listed in Table F-1. The table also lists the sources of pollutants related to the activity and what the specific pollutants

of concern are. The table is limited to those activities which are generally conducted outside, or that have potential to contribute pollutants to storm water discharges. Many processes in the primary metals industry are conducted inside and are therefore not represented in Table F–1.

TABLE F-1.—POLLUTANTS OF CONCERN FOR MAJOR ACTIVITIES WITHIN THE PRIMARY METALS INDUSTRY

Activity	Source	Pollutants
Raw material storage and handling .	Metal product stored outside such as foundry returns, scrap metal, turnings, fines, ingots, bars, pigs, wire.	Residual or protective Oil and Grease, Metals, TSS, COD, TSS.
	Outdoor storage or handling of fluxes	pH (limestone). TSS, pH, metals. TSS.
Vehicle Maintenance	Vehicle fueling and maintenance or outdoor storage tanks and drums of gas, diesel, kerosene, lubricants, solvents.	Oil and grease.
Waste materials—handling, storage, and disposal.	Slag or dross stored or disposed of outside in piles or drums	Metals, pH.
	Fly ash, particulate emissions, dust collector sludges and solids, baghouse waste.	TSS.
	Storage and disposal of waste sand or refractory rubble in piles outside.	TSS, metals, misc. "wet" sand additives.
	Machining waste—fines, turnings, oil, borings, gates, sprues, scale  Obsolete equipment stored outside	TSS, metals, oil and grease. Oil and grease.
Furnace operations and pollution control equipment.	Landfilling or open pit disposal of wastes onsite  Losses during charging of coke ovens or sintering plants and from particulate emissions.	See Part VIII.L. TSS, particulates, metals, volatiles, pH.
	Particulate emissions from blast furnaces, electric arc furnaces, induction furnaces.	TSS, metals.
	Fugitive emissions from poorly maintained or malfunctioning baghouses, scrubbers, electrostatic precipitators, cyclones.	TSS, metals.
Rolling, casting, and finishing operations.	Wastewater treatment operations exposed to precipitation	See Part VIII.T. Oil and grease, pH, TSS, metals, COD. pH, solvents, metals.
	ations.	
	Casting cooling or shakeout exposed to precipitation or wind  Losses of particulate matter from machining operations (grinding, drilling, boring, cutting) through deposition or storage of products outside.	TSS, metals. Metals, TSS.
Plant yards	Areas of the facility with unstabilized soils subject to erosion	TSS.
Plant yards	drilling, boring, cutting) through deposition or storage of products outside.	,

Although operations at primary metals facilities may vary considerably, the elements with potential impact on storm water discharges are fairly uniform and consistent. Facilities may include considerable areas of raw and waste material storage such as coal, coke, metal, ores, sand, scale, scrap, and slag. Processes generally involve furnaces for heating and melting metals or for producing coke, any of which may result in significant particulate emissions. Due to the nature of their operations some facilities will have large areas of exposed soil and heavy vehicle traffic which can lead to

a. Raw Material Storage and Handling Activities. Raw materials with potential

effects on storm water discharges fall into a number of distinct categories. Sands used for the production of

molds or cores can contribute to TSS loadings. Piles of materials may be washed away directly, or spills and windblown losses may occur during handling and process related activities.

Metal raw materials can come in numerous forms including billet, slab, pig, bar. These materials have the potential to corrode which can result in the loss of metal to a solution, i.e., water. The following metals are referred to as the galvanic (or electromotive) series and have a tendency to corrode and become soluble in water; magnesium, aluminum, cadmium, zinc, steel or iron, cast iron, chromium, tin, lead, nickel, soft and silver solder, copper, stainless steel, silver, gold, platinum, brass and bronze. For some metals, the extent and rate of corrosion is dependent on whether it occurs in an oxygen-starved or oxygen-abundant atmosphere. If materials are coated in oil to prevent corrosion, or residual chemicals used to clean or treat the metal are present, these can also be a source of pollution easily picked up by storm water runoff.

Scrap metals come in a variety of forms including machining waste such as turnings, shavings, filings, borings or as post consumer waste in a variety of forms. These materials can contribute metals, oil and grease, suspended solids, and other pollutants to storm water

<sup>&</sup>lt;sup>42</sup> Illicit connections are contributions of unpermitted non-storm water discharges into storm sewers from any number of sources including

sanitary sewers, industrial facilities, commercial establishments, or residential dwellings.