2. Pollutants Found in Storm Water Discharges From Leather Tanning Operations

The impacts caused by storm water discharges from leather tanning facilities will depend on the geographic location of the facility, the types of industrial activities occurring onsite (e.g., beamhouse, tanyard, retan and wet finishing, dry finishing); the types of significant materials exposed to storm water (e.g., trivalent chromium tanned leather shavings, chemical containers etc.), the size of the operation; and the type, duration, and intensity of precipitation events. Other factors such as air emissions (i.e., settled dust), materials storage, spills, improperly dumped materials, and illicit conditions may also impact receiving waters. (Illicit connections are contributions of unpermitted non-storm water discharges to storm sewers.)

Part 1 group application information indicates that the industrial activities occurring at leather tanning facilities include leather tanning plant yards; unhairing (76.9 percent of samplers); chromium tanning (69.2 percent of samplers); splitting and shaving (76.9 percent) retanning (69.2 percent); wet

hide finishing-buffing (76.9 percent); dry finishing; vegetable tanning (30.8 percent); immediate access roads and rail lines used or traveled by carriers of raw materials (38.5 percent of samplers), manufactured products, waste management (36.8 percent); material handling sites (23.1 percent); refuse sites; sites used for the application or disposal of process wastewaters (as defined at 40 CFR Part 401) sites used for residual treatment, storage or disposal (waste water treatment (30.8 percent)); shipping and receiving areas (69.2 percent of samplers); finished materials; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. (40 CFR 122.26(b)(14)).

Significant materials include raw materials, brine or salt cured hides and skins (7.7 percent), fuels (15.4 percent), materials such as solvents, detergents, finished materials; hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), any chemical required to be reported pursuant to Section 313 of

Title III of the Superfund Amendments and Reauthorization Act; fertilizers; pesticides; and waste products such as sludge (7.7 percent) that have the potential to be released with storm water discharge. (40 CFR 122.26(b)(12)). Other significant materials found at leather tanning facilities include leather shavings and dust (46.2 percent), leather scrap (30.8 percent), blue hides and splits (46.2 percent), empty chemical containers, spent solvents, emissions from spray booths, and wastes in dumpsters. Significant materials produced from various industrial activities occurring at leather tanning facilities are summarized in Table Z-1.

Based on the similarities of the facilities included in this sector in terms of industrial activities and significant materials, EPA believes it is appropriate to discuss the potential pollutants at leather tanning and finishing facilities as a whole and not subdivide this sector. Therefore, Table Z–2 lists data for selected parameters from facilities in the leather tanning and finishing sector. These data include the eight pollutants that all facilities were required to monitor for under Form 2F.

TABLE Z–2.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY LEATHER TANNING AND FINISHING FACILITIES SUBMITTING PART II SAMPLING DATA<sup>1</sup> (mg/L)

Pollutant Sample type	No. of facilities		No. of samples		Mean		Minimum		Maximum		Median		95th percentile		99th percentile	
	Grab	Comp <sup>ii</sup>	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD <sub>5</sub>	12	12	31	31	33.1	22.3	0.0	0.0	320.0	92.0	11.0	10.0	105.8	78.05	217.9	145.3
COD	12	12	31	31	205.5	91.94	0.0	0.0	2100.0	460.0	82.0	50.0	597.0	296.0	1247.4	577.2
Nitrate + Nitrite Nitrogen	12	12	31	31	1.86	1.88	0.06	0.30	11.00	9.60	1.20	0.90	6.12	5.01	11.97	9.01
Total Kjeldahl Nitrogen	12	12	31	31	7.70	6.22	0.70	0.90	46.00	38.0	4.30	3.50	26.49	19.7	55.80	39.18
Oil & Grease	12	N/A	31	N/A	13.9	N/A	0.0	N/A	130.0	N/A	0.0	N/A	56.4	N/A	124.5	N/A
рН	12	N/A	31	N/A	N/A	N/A	4.6	N/A	9.0	N/A	7.4	N/A	8.9	N/A	9.8	N/A
Total Phosphorus	12	12	31	31	0.36	0.83	0.00	0.03	3.00	18.0	0.16	0.18	1.11	1.51	2.34	3.66
Total Suspended Solids	12	12	31	31	310	115	0	0	4000	670	49	86	1302	520	4071	1209

<sup>i</sup> Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0. <sup>ii</sup> Composite samples.

Table Z-3 lists the potential pollutant sources for common pollutants found at leather tanning and finishing facilities.

TABLE Z-3.—LIST OF POTENTIAL POLLUTANT SOURCES

Parameter	Pollutant sources						
Oil and Grease	Degreasing processes, oils used in leather processing (fatliquoring). Complex organic and inorganic process chemicals, dyes, vegetable tannins, extraneous hide substances.						
BOD <sub>5</sub>	Carbonaceous organic materials such as dissolved or pulped hair and other extraneous hide substances, nitrites, ammonia from residual bating chemicals and from hydrolytic deamination of proteinaceous hair and hide substances.						
рН	Acidic or alkaline materials.						
TSS Total phosphorus	Leather dust, scraps, hair. Detergents.						
Nitrate nitrite nitrogen	Spent bating liquors and breakdown of organic proteins (dissolved hair and dermal matter).						
Total Kjeldahl nitrogen Chromium	Dissolved or pulped proteinaceous hair. Blue hides, leather scraps and dust, waste materials such as empty containers, sludge.						

## 3. Options for Controlling Pollutants

The measures implemented to reduce pollutants in storm water associated with leather tanning operations are generally uncomplicated practices. The following table identifies Best Management Practices (BMPs) associated with different activities that take place at leather tanning facilities. The most effective BMPs will be selected on the basis of site-specific considerations (e.g., facility size, industrial processes performed geographic location, significant materials, volume and type of discharge