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ECONOMIC IMPACT ANALYSIS OF THE LEATHER TANNING AND FINISHING OPERATIONS NESHAP: FINAL RULE

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EXECUTIVE SUMMARY

The U.S. is a key player in the world market for leather goods. We are a top producer in all facets of leather production, including:

- raising cattle, sheep, pigs, and other animals;
- tanning and finishing hides and skins; and
- manufacture of finished leather goods.

The regulation developed by the EPA to reduce emissions of HAPs will impact 16 facilities in the leather tanning and finishing industry and are owned by 14 parent companies. The industry includes approximately 300 establishments in all, therefore, the affected producers represent a very small fraction of the leather tanning production in the U.S. The regulation is expected to cost a total of $437,589 annually, which is 0.0014 percent of industry revenues. Because such a small fragment of the industry is impacted by the rule, changes in the cost of production for these facilities resulting from the rule will not influence market prices or production.

We determined the percentage of revenues that will be consumed by compliance costs and found that in nearly all cases, the impacts are very minimal (ranging from 0.00% to 0.09% for nearly all facilities). We found that only one facility had a moderate impact of 1.52 percent, however, with average industry profit margins of 3.6 percent, we conclude this impact will not be significant to this facility. Overall, we conclude that this rule will have a minimal (and in most cases negligible) impact on the industry, as well as the individual facilities and firms in the industry.

ECONOMIC IMPACT ANALYSIS OF THE LEATHER TANNING AND FINISHING OPERATIONS NESHAP

1 INTRODUCTION

Under section 112(d) of the Clean Air Act as Amended in 1990, the U.S. Environmental Protection Agency (referred to as EPA or the Agency) is developing National Emissions Standards for Hazardous Air Pollutants (NESHAP) for the leather tanning and finishing industry. As part of the Agency's evaluation of impacts associated with the rule, we have prepared estimates of the total compliance costs and emission reductions that will result from the rule. This report uses information about the affected leather tanners and the compliance costs to evaluate the economic impacts on the industry and on individual producers.

2 INDUSTRY PROFILE

Leather tanners produce materials for several consumer markets, including: automotive seats; shoes, handbags, and gloves; sports equipment; furniture and home furnishings; and clothes. According to *Leather Facts* published by the New England Tanners Club, the hides and skins used to create these goods come from all over the world and from a variety of animals[1]. Most production in the U.S. comes from cattle, sheep, and pigs, but considerable quantities of other types of hides and skins are also produced, including: horse, walrus, buffalo, deer, goat, ostrich, crocodile, and other large and small animals. Table 2-1 shows some of the products made with these different types of hides and skins.

Table 2-1. Products of Leather Hides and Skins

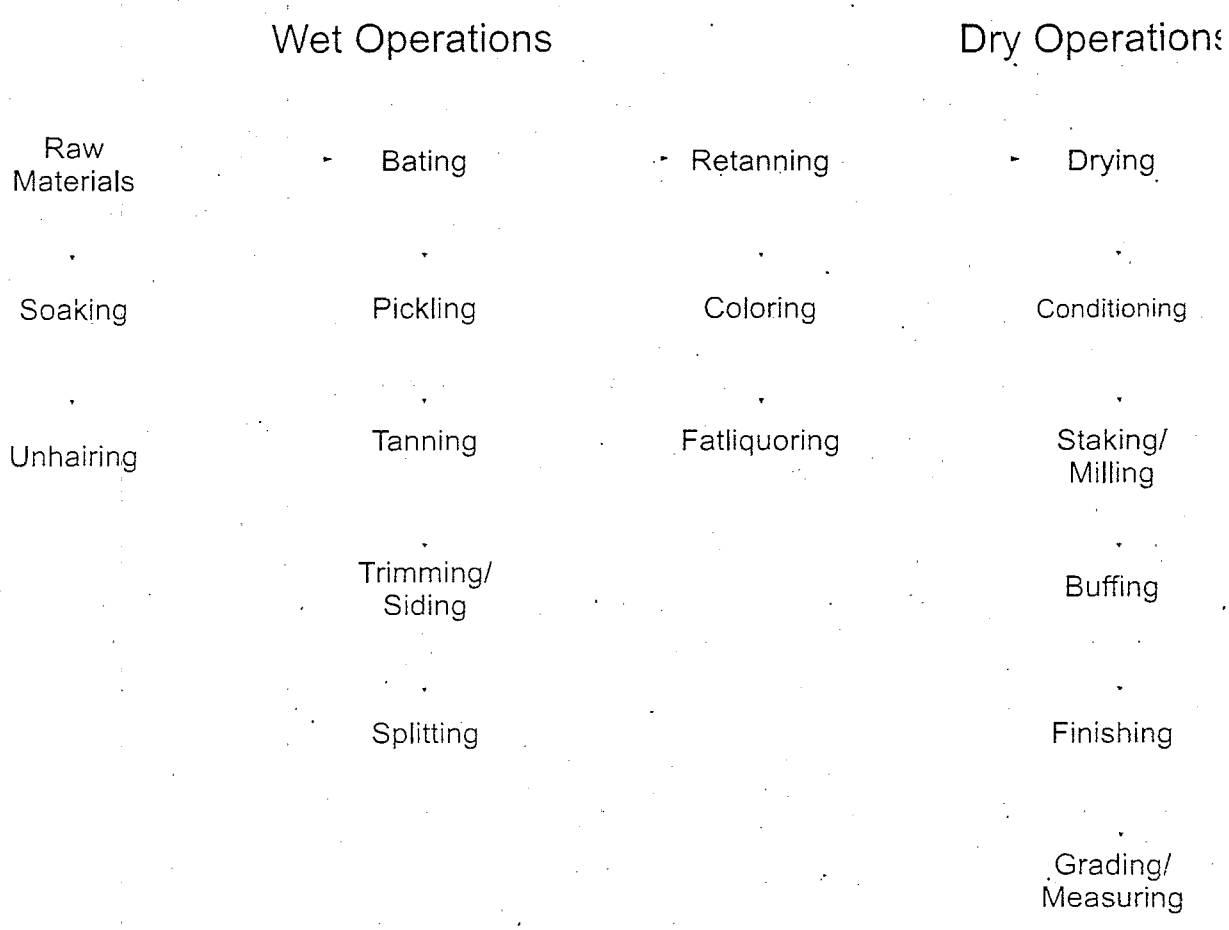
TYPE OF HIDE	END USE APPLICATION
Cows and Steer	Shoe and boot uppers. soles. insoles: patent leather: garments: work gloves: belts: luggage: upholstery: transmission belts: sporting goods
Calf	Shoe uppers: slippers: handbags and billfolds: hat sweatbands: bookbindings
Sheep and Lamb	Grain and suede garments: shoe linings: slippers: dress and work gloves: hat sweatbands: bookbindings: novelties
Goat and Kid	Shoe uppers. linings: dress gloves: garments: handbags
Pig	Shoe suede uppers: dress and work gloves: billfolds: fancy leather goods
Deer	Dress gloves: moccasins: garments
Horse	Shoe uppers: straps: sporting goods
Reptile	Shoe uppers: handbags: fancy leather goods

Source: *Leather Facts:* New England Tanners Club: 1994.

2.1 Production Overview

Leather Facts provides a basic description of the typical process for converting a cow hide into a leather shoe upper. The leather tanning and finishing process can be divided into wet operations and dry operations. A process flow diagram is provided in Figure 2-1. The wet operations include all of the processes required for leather tanning. These processes include steps to purify and stabilize the collagen content of the hide. Collagen is the protein responsible for strength and toughness. Dry operations consist mostly of processes that enhance the natural characteristics of the leather. which encompass the leather finishing processes. For each tannery, however. the techniques and chemicals used at each step is uniquely tailored to the product qualities they strive to achieve. and thus may differ slightly from this description.

Figure 2-1. Leather Tanning and Finishing Processes - Flow Diagram



Wet Operations:

Before the tanning facility receives the hides, the raw material must undergo a curing process at the supplier's facility (typically a meat packer) to prevent any deterioration and decay of the product. The hides are then shipped to the tannery by truck or freight cars, which can deliver about 1000 hides at a time (weighing about 50,000 pounds). The first step in the tanning process is to prepare the hide for processing by sorting the hides by type, thickness, and other characteristics, and storing them to prevent any deterioration of the hide. The next step is to soak a selection of hides in a solution of water, chemical wetting agents (similar to household detergents) and disinfectants to restore the moisture that was lost during the curing process. The tanner then adds chemicals to the soaking solution to complete the next step, the unhairing process, which removes the hair, epidermis, and certain soluble proteins.

Next, the hides go through a bating process to remove the residual unhairing chemicals and non-leather making substances. In the first phase of the bating process, termed deliming, the hides are placed in cylindrical drums that have hollow axles and are rotated with water and chemicals to remove any lime and alkaline chemicals present on the hides. In the second phase of this process, the "bate" is added, which attacks and destroys most of the remaining undesirable constituents of the hide (i.e., hair roots, pigment, grain of the hide). Then the hides are washed to prepare them for the pickling process of the operation. Hides are pickled by adding common salt (or other chemicals that act in the same manner) and acid to the same drum as is used for bating the hides. This step helps to preserve the hides until they are needed for the tanning process and also prepares the hides to better accept the tanning materials.

The tanning process is the conversion of the raw collagen fibers of the hide in to a stable product which is no longer susceptible to putrefaction or rotting. In addition to stabilizing the product, this step significantly improves many of the properties of the hide (i.e., abrasion resistance, resistance to chemicals or heat, flexibility, ability to endure repeated cycles of wetting and drying). This process is completed by adding chemicals to the same drums used for the bating and pickling processes. The most common tanning agent is chromium sulfate, which imparts a blue-green color to the hides. Other chemicals are also added to achieve other desired characteristics in the leather.

After the tanning process is complete the hides are sent through a machine to wring the excess moisture out of the hide. They are then sorted and trimmed to remove the perimeter areas of the hide. Finally, they are sent to splitting and shaving which adjusts the thickness of the leather required for the desired end use.

Once the tanning process is complete and the hides are prepared to the desired thickness, they undergo the steps of retanning, coloring, and fatliquoring. The retanning and coloring are performed to achieve specific end-use properties, and the fatliquoring provides lubrication of the fibers for flexibility and softness.

Dry Operations:

After passing through the wet end processes, the leather tanning and finishing process moves to the finishing room. In the finishing room, the hides undergo the drying, conditioning, staking, buffing, and finishing processes. The objective of the dry operations is to produce a product that has uniformity, resistance to scuffing and abrasion, appearance characteristics, and other desired characteristics by a commercial product such as upholstery or footwear.

The leather is dried, conditioned, staked and mechanically dry-milled to further improve flexibility and softness. Then the leather is goes through a buffing process to smooth the grain surface by mechanically sanding.

The next step in the operation is to finish the leather. In this step, film-forming materials are applied to the grain to provide abrasion and stain resistance and to enhance the color. This step requires a lot of creativity, skill, and expertise by the finisher who uses chemical coating substances to achieve the desired end-product. To complete this step, almost a limitless combination of leather coatings or finishes are applied, depending on the type of leather being produced and the intended end use. Typically, three to five coats of finish are applied to the leather although the actual number of coats can vary depending on desired characteristics. The different types of finishes include stains or dyes, pigments, binders, and top coats or sealer coats. Stains and dyes impart color below the surface of the leather. Pigments impart color to the top surface leather by forming a film on the

surface of the leather. Pigments are also used to hide imperfections. Binders form a film on the leather and create a smooth surface. They also bind stains and pigments to the leather and retard bleeding and fading of the color. Top coats seal and protect the finished leather surface from abrasion and prevent the color of the leather from bleeding. They also give a smooth, slick feel to the leather and depending on the formulation will give the leather a particular luster.

Hundreds of leather finishing formulations are available: each finish formulation has unique chemical and physical characteristics and is applied as needed to meet end-use requirements. The finishes used are primarily broken down into four major leather industry sectors, including: automotive upholstery leather, non-automotive upholstery leather, waterproof leather, and non-waterproof leathers. Due to differences in the types of finishes required to achieve specific characteristics in leather, the EPA has established four subcategories of operations for the development of the regulation. The four subcategories represent the major leather industry sectors discussed above, and are described below:

Upholstery Leather with Add-On Less Than 4g ft²: This category produces leather for automotive seating. Finishes for automotive upholstery are typically water-based and have lower HAP emissions. They are based on acrylic resins and polyurethane dispersions. The polyurethane component provides toughness, while the acrylic resin lowers the formulation price. A small amount of organic solvents are used to act as a salting agent. Glycol ethers are also used as diluents and coalescing agents, improving the film-forming properties of the finish.

Upholstery Leather with Add-On Greater Than or Equal to 4g ft²: This category produces leather typically for use in furniture. The base coats for non-automotive upholstery finishes are generally water-based. The top coats can be either water-based or solvent-based depending on the end-use of the leather. Low cost types of leather furniture upholstery are intended to be functional at competitively prices and are typically finished with water-based top coats. In contrast, "high-end" furniture upholstery leather is typically finished with lacquer-based top coats to obtain the desired appearance and feel.

Water-Resistant Leather: Water-resistant leather is used in a variety of applications, but most common in shoe uppers. While the waterproof properties of leather can be achieved

through wet end processes. most facilities achieve the waterproof properties of the leather almost entirely through the finishing process. After wet end processes are complete. the leather is spray dyed with a solution composed mostly of HAPs. The dyeing is often followed by the application of a wax or oil. or a mixture of both. The wax and oil both significantly enhance the waterproof properties that are obtained through the wet processes.

Non Water-Resistant Leather: This category is also used in a variety of applications. but the most common market again is shoe leather. Finishes for non-waterproof leather are similar to those used in non-automotive leather upholstery. Most base coats are water-based. and the top coats are usually water-based but some are solvent-based.

The EPA has found that although the source category includes facilities that perform both leather tanning and finishing operations. we believe emissions from the leather tanning (wet operations) are negligible compared to emissions from leather finishing (dry operations). Thus. the rule is applicable only to the leather finishing operations included in the subcategories stated above. The rule applies to the stains. pigments. binders. and sealers used in the finishing processes. The NESHAP will apply to all finishing application areas and equipment. including: spray booths. brush applications. hand applications. roll coaters. manual swabbing. curtain coaters. and flow coaters. It also applies to flash-off areas. drying ovens. infrared dryers. catalytic dryers. open-air drying. cleaning. mixing. storage. and waste handling.

2.2 Producers of Finished Leather Products

Leather Facts states "there is scarcely a country of any size which does not produce hides or skins for conversion into leather."[3] Thus. there is a large international market for finished leather as well as trading the raw hides and skins. Some of the top world producers of cattle that can be used for leather production include: Soviet Union. United States. Western Europe. Argentina. Eastern Europe. Brazil. and Asia. For the U.S.. tanning activities are concentrated in the Northeast. Midwest. Mid Atlantic States and California. Some tanneries are relatively small often specializing in the manufacture of a particular kind of leather. and handing down the techniques from generation to generation. Others employ several hundred people and produce a wide variety of leathers[4]. According to the 1992 Census of Manufacturers. the top 20 companies in the industry accounted for

74% of the products produced in the industry, and the top 8 companies accounted for over 50% of the industry products[5]. This indicates that the smaller companies probably specialize in niche markets and unique products, while the larger companies produce a large majority of the goods sold, and can influence market price levels.

Because leather products are used in such a large variety of applications throughout the world, the industry has a formidable market. As Table 2-2 shows, in 1993 leather tanning and finishing was a $3.2 billion industry in the U.S., employing 16,900 people in 330 establishments and accounting for $700 million in exports[6]. In 1996, the industry value of shipments was $3.1 billion and employed 14,800 people and accounting for $951 million in exports[7]. During this time period, employment dropped by 12% yet total shipments remained fairly steady around $3.0 billion. The industry also moved from being a slight net exporter in 1993 to becoming a slight net importer of products from 1994 to 1996.

Table 2-2. Leather Tanning and Finishing Industry Statistics: Employment and Value of Shipments (1993-1996)

	1993	1994	1995	1996
Number of Employees	16,900	15,900	15,300	14,800
Value of Shipments (millions)	$3,198	$3,041	$3,119	$3,134
Imports	$736	$960	$1,089	$1,136
Exports	$764	$812	$870	$951

Sources: Industry Outlook: U.S. Department of Commerce, Bureau of Census; 1998
Annual Survey of Manufacturers: U.S. Department of Commerce, Bureau of Census; 1996

According to data collected by EPA, there are 16 facilities that emit more than 10 tons/year of a single HAP or 25 tons/year of a combination of HAPs, and are thus determined to be "major sources" for the NESHAP. Table 2-3 displays the location and name of the facilities impacted by this rule.

Table 2-3. Facilities Affected by the Leather Tanning & Finishing NESHAP

Facility Name	Location
Alliance Leather, Inc.	Peabody, MA
Cudahy Tanning Company	Cudahy, WI
Elmo Leather of America	Edison, NJ
Gardenstate Tanning	Fleetwood, PA
Gardenstate Tanning	Williamsport, MD
Gutman Leather Company, Inc.	Chicago, IL
Horween Leather Company	Chicago, IL
Irving Tanning Company	Hartland, ME
Lackawanna Leather Company	Conover, NC
Lackawanna Leather Company	Omaha, NE
Paul Flagg Leather Company	Sheboygan, WI
Prime Tanning Company	Rochester, NH
S.B. Foot Tanning	Red Wing, MN
Seton Company	Norristown, PA
Salz Leathers, Inc.	Santa Cruz, CA
Volunteer Leather Company	Milan, TN

Industry Growth:

As is mentioned at the beginning of this section, the leather tanning and finishing industry supplies leather to a variety of industry sectors which include automotive upholstery, non-automotive upholstery, men's and women's shoes, athletic shoes, leather gloves and mittens, luggage, women's handbags and purses, small personal goods, and leather clothing. To determine how these markets can influence the leather tanning and finishing industry, Table 2-4 shows the five year forecast of growth for the various leather industry sectors.[8,9]

Table 2-4. Five Year Growth Projections for Leather Industry Markets

Leather Industry Market	Five Year Growth Projection (Annual Growth %)
Automotive Upholstery	4 to 5
Non-Automotive Upholstery (furniture)	4 to 5
Men's Shoes	2
Women's Shoes	little to no growth
Athletic Shoes	1
Gloves and Mittens	-1.8
Luggage	-2.7
Women's Handbags and Purses	-7.3
Small Personal Goods	no change
Leather Clothing	-1.5

Source: U.S. Industry & Trade Outlook '98.: U.S. Department of Commerce.

The overall forecast of growth for the leather tanning and finishing industry is 2 to 3 percent annually over the next five years. The fastest growing and potentially the largest markets for leather in the U.S. are those for automotive upholstery and furniture upholstery. While shipments in the markets for leather gloves and mittens, luggage, women's handbags, and leather clothing are expected to decline in the next five years, shipments of leather to the automotive and non-automotive upholstery sectors industry sectors are projected to grow annually four to five percent. Shipments for men's shoes is expected to grow by two percent annually, and the leather athletic shoes market is expected to grow by one percent annually over the next five years. Thus, it appears there will be a shift in current production of finished leather products from the markets with declining growth to the markets with large expected growth.

3 ECONOMIC IMPACTS

The NESHAP on the leather tanning and finishing industry requires affected facilities to use different formulations of finishing products or requires them to modify finishing equipment to reduce emissions to the MACT floor. A memorandum to the project files titled, "MACT floor Emission Limits for Leather Tanning and Finishing Operations" provides details on the development of the regulatory alternatives for this rule[10]. The costs to comply with the regulation will vary across facilities depending upon the subcategory to which they are included, the current finishing operations, and baseline emission control equipment. These regulatory costs will have financial implications for the affected producers, and possibly broader implications as these effects are transmitted through market relationships to other producers and consumers.

It should be noted that all calculated costs and economic impacts remain unchanged from those included in the analysis presented at proposal of the rule, however, since proposal EPA has converted to the North American Industry Classification System (NAICS) instead of the Standard Industry Classification System (SIC) to classify industries during economic analysis. Section 3.4 provides greater detail with respect to the change in industry classification methods

3.1 Summary of Compliance Costs

In a memo to the project files titled, "Cost Impacts Associated with HAP Emission Reductions for Leather Tanning and Finishing Operations," (September 2, 1999), the EPA has determined that total compliance costs imposed on the 16 affected facilities described earlier[11]. Overall, five facilities will experience costs ranging from $0 to $883, while the remaining 11 facilities experience estimated costs of $8,515 to $105,590. The primary reason for a difference in cost between these groups of facilities is that as a result of the regulation, some of the facilities will be able to recapture some of the chemicals and product in the process to save on costs of production. The total annualized cost of the rule is $437,589, which represents only 0.0014% of total industry revenues (based on 1996 value of shipments).

3.2 Market Impacts

Typically, our economic analyses take several data elements to input to a model that determines changes in market prices, output, and total social cost (via the change in producer and consumer surplus). However, the impacts of this rule are not likely to produce any measurable changes in an economic model of the Leather Tanning and Finishing industry for the following reasons:

- only 16 facilities out of the 330 establishments are affected.
- total compliance cost represents a small percentage (0.0014%) of total market revenues.
- the largest producers account for a large percentage of market share (i.e., percentage of total production).

We can conclude in general that because a model of the market is not likely to show any changes resulting from the costs imposed by this regulation, the market as a whole will not show adjustments in price and production and affected producers will not be able to recover any of the compliance costs incurred by raising prices. Likewise, while production levels at some of the affected facilities may lower due to the increase in cost of production, other facilities will compensate for this change such that overall industry production will not change.

Rather than perform a full market analysis, the analysis takes a closer look at the firm-level impacts if we assume all costs will be absorbed by the owner of the leather tannery. We do this by determining the percentage of revenues that the compliance cost will consume. Using data collected from Dun and Bradstreet, we found that the 16 affected facilities are owned by 14 ultimate parent firms[12]. We were able to obtain revenue and employment data for 9 of the 14 firms. For the affected facilities, the compliance costs as a percentage of firm revenues ranges from 0.00 to 1.52 percent. Typical profit margins in the industry average approximately 3.6 percent[13]. Therefore, these impacts presented by this rule are likely to be minimal on all of the firms owning the affected tanneries.

3.3 Small Entity Screening Analysis

This regulatory action will potentially affect the economic welfare of the owners of leather tanneries. The ownership of these facilities ultimately falls on private individuals who may be owner/operators that directly conduct the business of the firms, or more commonly, on investors or stockholders that employ others to conduct the business of the firm on their behalf (i.e., privately or public corporations). The individuals that manage these facilities have the capacity to conduct business transactions and make business decisions that affect the facility. The legal and financial responsibility for compliance with the regulation ultimately rests with the facility managers; however, the owners must bear the financial consequence of the decisions. Environmental regulations like this rule potentially affect all businesses, large and small, but small businesses may have special problems in complying with federal regulations.

The Regulatory Flexibility Act (RFA) of 1980 requires that special consideration be given to small entities affected by federal regulation. The RFA was amended in 1996 by the Small Business Regulatory Enforcement Fairness Act (SBREFA) to strengthen the RFA's analytical and procedural requirements. The RFA and SBREFA require the preparation of a regulatory flexibility analysis for any rule that would have a significant impact on a substantial number of small entities, or a disproportionate impact on small entities.

This section identifies the businesses that will be affected by this rule and provides a preliminary screening-level analysis to assist in determining whether the rule is likely to impose a significant or disproportionate burden on small entities and whether a regulatory flexibility analysis is required under the RFA. The screening-level analysis employed here is a "sales test," which computes the annualized compliance costs as a share of sales for each company.

The Small Business Administration defines a small entity in the leather and tanning industry as one with total employment at the parent company of less than 500 employees. As is stated in the previous section, we collected data from Dun and Bradstreet and determined that the 16 affected facilities are owned by 14 ultimate parent firms. We were able to obtain revenue and employment

data for 9 of the 14 firms and that 3 of these firms are classified as small. Many of the affected facilities are small at the individual locations, but most are incorporated into larger firms.

The calculation of cost-to-sales ratios for the 9 firms shows that only one firm (owning one facility and who is classified as small) shows an impact that is slightly greater than 1 percent of revenues (1.52%). All other firms have impacts well below 1/10th of one percent (impacts range from 0.00% to 0.09% of firm revenues). As is stated earlier, profit margins in this industry are on average above 3 percent. Therefore, because the observed impacts are well below typical profit margins in the industry, we conclude that there will not be a significant impact on a substantial number of small entities, and that the impacts are not disproportionate between small and large firms.

3.4 Conversion from SIC to NAICS Industry Classification

The purpose of this section is to inform the reader about what changes, if any, occur to the results of the economic impact and small entity analyses prepared in July 2000 for the proposal of the Leather Tanning and Finishing Operations NESHAP when the data for the analyses are based on a new system of classifying industries, the North American Industry Classification System (NAICS). As of October 1, 2000, EPA converted to the NAICS system for data collection on regulated industries. Prior to this date and in its analysis of the proposed rule, EPA used the Standard Industry Classification (SIC) system.

The Bureau of Census provides a comparison of the two industry classification systems on their website of the Census of Manufacturers (www.census.gov). According to the Bureau's data, the SIC 3111 that was formerly used for Leather Tanning and Finishing is now represented by NAICS code 316110. Under the SIC code in 1997, there were 332 establishments and the value of shipments (total revenues) for the industry were $3.34 billion. Small businesses were defined as firms with employment of 500 or less. Under NAICS 313110, the data matches exactly with the SIC code data. Therefore, there can be a direct comparison between the SIC and the NAICS for the industry. Because the final rule will not change any of the costs or economic impacts, the

conclusions for the leather tanning and finishing industry contained in the Economic Impact Analysis at proposal will still apply for the final rule. Also for this industry, the definition of a small business is the same as that of the SIC code, therefore, there is no change in the results of the small entity analysis if it is completed using the NAICS-based size standards.

4 SUMMARY

The U.S. is a key player in the world market for leather goods. We are a top producer in all facets of leather production, including:

- raising cattle, sheep, pigs, and other animals;
- tanning and finishing hides and skins; and
- manufacture of finished leather goods.

The regulation developed by the EPA to reduce emissions of HAPs will impact 16 facilities in the leather tanning and finishing industry and are owned by 14 parent companies. The industry includes approximately 300 establishments in all, therefore, the affected producers represent a very small fraction of the leather tanning production in the U.S. The regulation is expected to cost a total of $437,589 annually, which is 0.0014 percent of industry revenues. Because such a small fragment of the industry is impacted by the rule, changes in the cost of production for these facilities resulting from the rule will not influence market prices or production.

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5 REFERENCES

1. New England Tanners Club: "Leather Facts: A Picturesque Account of One of Nature's Miracles." 1994.

2. Alpha Gamma Technologies, Inc.: "Industry Description for Leather Tanning and Finishing Operations." Memo to Leather Tanning and Finishing Operations NESHAP Project File: April 8, 1997.

3. Reference 1.

4. Reference 1.

5. U.S. Department of Commerce: Bureau of Census. Census of Manufacturers: "Concentration Ratios in Manufacturing:" Publication # MC92-S-2.

6. Reference 1.

7. U.S. Department of Commerce: Bureau of Census: 1996 Annual Survey of Manufacturers. Statistics for Industry Groups and Industries. 1996.

8. Reference 2.

9. U.S. Department of Commerce. International Trade Administration. U.S. Industry Trade & Outlook '98.. McGraw-Hill: New York, New York. 1998.

10. Alpha Gamma Technologies, Inc.: "MACT Floor Emission Limits for Leather Tanning and Finishing Operations." Memo to Leather Tanning and Finishing Operations NESHAP Project File: December 9 ,1999.

11. Alpha Gamma Technologies, Inc.: "Cost Impacts Associated with HAP Emission Reductions for Leather Tanning and Finishing Operations." Memo to Leather Tanning and Finishing Operations NESHAP Project File: September 2, 1999.

12. Dun and Bradstreet financial data obtained through confidential access of EPA IDEAs database. Data contained in the Office of Air Quality Planning and Standards: Planning, Resources & Regional Management Staff: Clean Air Act Confidential Business Information Files.

13. U.S. Department of Commerce: Bureau of Census: Quarterly Financial Reports for Manufacturing, Mining, and Trade Corporations: Quarter for 1998.: website address <www.census.gov prod/99pubs/qfr-98q4.pdf>.

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This report presents a technical analysis of the economic impacts associated with the promulgated NESHAP for Leather Tanning and Finishing Operations. The analysis evaluates adjustments in the leather market (through price and production changes), social cost, and the resulting affects on employment, international trade, and small businesses.

17. KEY WORDS AND DOCUMENT ANALYSIS

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