



Appendix A.

INTERNET RESOURCES

EnviroSense

EnviroSense is a free, public, integrated environmental information system. It is designed to assist users in finding and implementing common sense solutions, such as pollution prevention, to environmental problems; facilitate sharing of technology, procedures and experience across federal agencies, other governmental organizations, manufacturers, suppliers and researchers; and encourage the development and demonstration of pollution prevention technologies. EnviroSense can link you to most requests for information on the environment, and on the pollution prevention opportunities and technologies that would benefit your business.

<http://es.inel.gov>

Pacific Northwest Pollution Prevention Resource Center

Information on this Web site will benefit industry representatives, technical assistance providers, researchers, funders of pollution prevention activities and others. For example, industry representatives and technical assistance providers can use it to obtain general information on cutting-edge approaches to environmental problems, and to identify professionals with technical expertise in specific areas.

<http://www.pprc.org/pprc>

National Metal Finishing Resource Center

This Web site will be a valuable resource to metal fabricators who do their own metal finishing. The site provides a technical database, vendor directory, compliance assistance information, and pollution prevention opportunities. The site also allows the user to “chat” with other metal finishers to discuss common problems and solutions.

<http://www.nmfrc.org/>

The National Defense Center for Environmental Excellence

The NDCEE provides information on its projects and tested equipment that aid in understanding and use of new, environmentally acceptable solutions. The center performs applied research and development, where appropriate, to accelerate the adoption of new technologies.

<http://www.ndcee.ctc.com/index.htm>



Coating Alternatives Guide (CAGE)

This Web site is an expert system and information base for small- and medium-sized businesses with miscellaneous metal and plastic parts coating operations. The site is an interactive system to identify low-emitting coating technologies.

<http://clean.rti.org/cage/>

Fabricated Metal Products Industry Sector Notebook

Each sector-specific notebook brings you comprehensive, well-researched details gathered for the first time into a single source and includes: comprehensive environmental profile; industrial process information; pollution prevention techniques; pollutant release data; regulatory requirements; compliance/enforcement history; innovative programs; and contact names.

<http://es.inel.gov/comply/sector/index.html#fab>

Solvent Alternatives Guide (SAGE)

SAGE is an interactive online tool that evaluates the user's current operating scenario and identifies alternative surface cleaning solvent chemistries and processes best suited to the defined operating and material requirements.

<http://clean.rti.org/tools.htm>

Joint Service Pollution Prevention Opportunities Handbook

This Web site is searchable using keywords. The site hosts plenty of information, especially Navy-sponsored projects which investigate cleaner production technologies and products.

<http://enviro.nfesc.navy.mil/p2library>

Joint Group on Acquisition Pollution Prevention

This Web site provides technology surveys that provide discussions of commercially available or near-commercially available pollution prevention alternatives identified through literature searches, electronic database searches, Internet searches, vendor surveys, and personal and professional contacts.

<http://www.jgapp.com/techsurv.htm>

Office of Air Quality Planning and Standards–Technology Transfer Network

This Web site provides information and technical support on air pollution control. Its four divisions—Air Quality Management, Emission Standards, Technical Support, and Stationary Source Compliance—provide services to EPA regional offices, state and local agencies, consultants, industry and the general public. These services include clearinghouses, conferences, reports, manuals, newsletters, support center, workshops, classroom training, self-



instructional courses and the Technology Transfer Network (TTN). The TTN is one of the most useful bulletin boards to find information on Clean Air Act details, and new rules and regulations that may impact your business. These are the rules that regulators browse through, and you should take advantage of acquiring the same knowledge.

<http://www.epa.gov/ttn>

U.S. Environmental Protection Agency

This Web site hosts information and contacts for promulgated federal regulations, state and local authorities, available publications, and other resources.

<http://www.epa.gov/>

Oregon Department of Environmental Quality Directory

This Web site is a directory of contacts in the different media programs—air quality, water quality and hazardous waste. Once you get to this page, scroll down to the appropriate program you want information on and link directly to that page.

<http://www.deq.state.or.us:80/>

Alaska Compliance Assistance Office

This Web site gives contacts for compliance assistance with Alaska's environmental regulations. The Compliance Assistance Office helps businesses, communities, government agencies and the general public to maintain environmental quality and achieve greater compliance with environmental regulations.

<http://www.state.ak.us/local/akpages/ENV.CONSERV/>

Washington Department of Ecology

This Web site is dedicated to providing contacts for the different functions, programs and activities, and general information on environmental issues in the state of Washington.

<http://www.wa.gov/ecology>

Hazardous Chemical Database

This database will allow the user to retrieve information by keyword search for any of 2,000 hazardous chemicals.

<http://ull.chemistry.uakron.edu/erd/>



Material Safety Data Sheet(s)

This Web site provides links to many other sites that have MSDS databases, and other health and environmental information.

<http://www.lib.iastate.edu:80/agnic/msds.html>

Oxford MSDS Database

This Web site's home page is an index of Material Safety Data Sheets in alphabetical order. The user can select the first letter of the particular chemical that is the object of the search, then select the appropriate chemical from the list that is presented.

<http://physchem.ox.ac.uk:80/MSDS/>



APPENDIX B.

CONTACTS LIST

Alaska Department of Environmental Conservation

Small Business Compliance Assistance Office

Scott Lytle: 907-269-7571

Compliance Assistance Office – Pollution Prevention Division

David Wigglesworth: 907-269-7582

Idaho Division of Environmental Quality

Small Business Assistance Program

Doug McRoberts: 208-373-0497

Pollution Prevention Program

North Idaho Regional Office: 208-769-1422

North Central Regional Office: 208-799-4370

Eastern Regional Office: 208-528-2650

Southwest Regional Office: 208-373-0550

South Central Regional Office: 208-736-2190

Southeast Regional Office: 208-236-6160

Oregon Department of Environmental Quality

Small Business Assistance Program

Terry Obteshka: 503-229-6147

Waste Reduction Assistance Program

Northwest Regional Office: 503-229-5263

Salem Office: 503-378-8240

Roseburg Office: 541-440-3338

Bend Office: 541-388-6146

Pendleton Office: 541-278-4622



Washington Department of Ecology

Small Business Assistance Program

Bernard Brady: 360-407-6803

Leighton Pratt, Small Business Ombudsman: 360-407-7018

Department of Ecology Regional Offices

Chelan, Douglas, Kittitas, Klickitat, Okanogan counties – Central Regional Office
509-575-2490

San Juan County – Northwest Regional Office

425-649-7000

Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman counties – Eastern Regional Office

509-456-3114

Hazardous Waste and Toxics Reduction Program

Northwest Regional Office, Bellevue: 425-649-7000

Southwest Regional Office, Lacey: 360-407-6300

Central Regional Office, Yakima: 509-575-2490

Eastern Regional Office, Spokane: 509-456-2926

Permit Assistance Center

This program helps you map out your permit strategy over the phone or in person. Specifically, the center can: help orient you to the requirements of environmental permitting; advise you on which local, state and federal permits may apply; identify key contacts at government agencies; help you estimate how much time and effort you'll spend obtaining permits; and help you avoid potential time, money and regulatory traps. Contact the Permit Assistance Center by:

Phone: 360-407-7037

Fax: 360-407-6904

E-mail: ecypac@ecy.wa.gov

In person: 300 Desmond Drive S.E., Lacey, Washington

Local Air Quality Agencies in Washington

King, Kitsap, Pierce, Snohomish counties –

Puget Sound Air Pollution Control Agency

206-343-8800 or 1-800-552-3565

<http://www.psapca.org>



Clallam, Grays Harbor, Jefferson, Mason, Pacific, Thurston counties – Olympic Air Pollution Control Authority
360-438-8768 or 1-800-422-5623
<http://www.wln.com/~oapca/index.html>

Island, Skagit, Whatcom counties – Northwest Air Pollution Authority
360-428-1617
<http://www.pacificrim.net/~nwapa/index.html>

Clark, Cowlitz, Lewis, Skamania, Wahkiakum counties – Southwest Air Pollution Control Authority
360-694-5006, ext. 13
<http://www.swapca.org>

Spokane County – Spokane County Air Pollution Control Authority
509-456-4727

Yakima County – Yakima County Clean Air Authority
509-574-1410

Benton County – Benton County Clean Air Authority
509-943-3396
<http://www.cbvcp.com/bccaa/>

Regional Resources

Pacific Northwest Pollution Prevention Resource Center (PPRC)

The PPRC is a non-profit organization that devotes much effort to relationship-building among federal and state governmental agencies, industry representatives, environmental organizations, the academic community and others. Its central contributions are in making high-quality information available to decision-makers to help them identify productive new pathways, identifying research needs by evaluating opportunities for and barriers to the implementation of pollution prevention, and catalyzing projects that address those needs. Contact the PPRC by calling 206-223-1151, or visit its Web site at: <http://www.pprc.org/pprc>.



APPENDIX C.

WEEKLY FACILITY INSPECTION CHECKLIST

Performing weekly hazardous waste inspections is one of the simplest ways you can protect your facility from a leak or spill, as well as meet new container regulations. If done correctly, your effort will prevent potential releases to the environment before they occur, ensure that wastes are identified properly, and see that wastes are shipped off-site before your accumulation time is up. Make copies of this Checklist for each week in the year and keep them for your records.

WEEKLY INSPECTION CHECKLIST

Inspection for the week of _____ to _____

ACCUMULATION

- _____ Are all drums and containers marked with a hazardous waste labels?
- _____ Are all drums and containers marked with risk labels where appropriate?
- _____ Are all drums marked with accumulation start dates?
- _____ Are there any drums that are near or have exceeded the 90/180 day timeframe?
- _____ Are all drums marked with the proper waste code(s)?
- _____ Are all containers closed?
- _____ Are all drum labels visible and readable?
- _____ Are all drums and containers in good condition?
- _____ Are there 30 inches of aisle space between rows of containers?
- _____ Are any drums leaking?

SUMPS

- _____ Are sumps clean and free of contamination, spills, leaks and standing water?

SAFETY EQUIPMENT

- _____ Are fire extinguishers charged?
- _____ Are spill kits stocked?
- _____ Is the first aid cabinet stocked?
- _____ Is the emergency shower and eye wash station functioning properly?
- _____ Are the emergency communication devices operating properly?
- _____ Is emergency response information posted near all communication devices?

SECONDARY CONTAINMENT

- _____ Is the secondary containment free of cracks or other failures?

COMMENTS

Describe the actions that you took to correct the deficiencies noted above, and the date the actions were taken

Printed Name _____ Signature _____

Date _____ Time _____

APPENDIX D.

LIST OF HAZARDOUS AIR POLLUTANTS

CAS #	Chemical Name	CAS #	Chemical Name	CAS #	Chemical Name
75070	Acetaldehyde	68122	Dimethyl formamide	82688	Pentachloronitrobenzene
60355	Acetamide	57147	1,1 Dimethylhydrazine		(Quintobenzene)
75058	Acetonitrile	131113	Dimethyl phthalate	87865	Pentachlorophenol
98862	Acetophenone	77781	Dimethyl sulfate	108952	Phenol
53963	2-Acetylaminofluorene	534521	4,6-Dinitro-o-cresol, and salts	106503	p-Phenylenediamine
107028	Acrolein	51285	2,4-Dinitrophenol	75445	Phosgene
79061	Acrylamide	121142	2,4-Dinitrotoluene	7803512	Phosphine
79107	Acrylic acid	123911	1,4-Dioxane (1,4-Diethyleneoxide)	7723140	Phosphorus
107131	Acrylonitrile	122667	1,2-Diphenylhydrazine	85449	Phthalic anhydride
8107051	Allyl chloride	106898	Epichlorohydrin	1336363	Polychlorinated biphenyls (Aroclors)
92671	4-Aminobiphenyl		(1-Chloro-2,3-epoxypropane)	1120714	1,3-Propane sultone
62533	Aniline	106887	1,2-Epoxybutane	57578	beta-Propiolactone
90040	o-Anisidine	140885	Ethyl acrylate	123386	Propionaldehyde
1332214	Asbestos	100414	Ethyl benzene	114261	Propoxur (Baygon)
71432	Benzene (including from gasoline)	51796	Ethyl carbamate (Urethane)	78875	Propylene dichloride
92875	Benzidine	75003	Ethyl chloride (Chloroethane)		(1,2-Dichloropropane)
98077	Benzotrichloride	106934	Ethyl enedibromide (Dibromoethane)	75569	Propylene oxide
100447	Benzyl chloride	107062	Ethyl enedichloride	75558	1,2-Propylenimine
92524	Biphenyl		(1,2-Dichloroethane)		(2-Methyl aziridine)
117817	Bis (2-ethylhexyl) phthalate (DEHP)	107211	Ethylene glycol	91225	Quinoline
542881	Bis(chloromethyl) ether	151564	Ethyleneimine (Aziridine)	106514	Quinone
75252	Bromoform	75218	Ethylene oxide	100425	Styrene
106990	1,3-Butadiene	96457	Ethylene thiourea	96093	Styrene oxide
156627	Calcium cyanamide	75343	Ethylidene dichloride	1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin
105602	Caprolactam		(1,1-Dichloroethane)	79345	1,1,2,2-Tetrachloroethane
133062	Captan	50000	Formaldehyde	127184	Tetrachloroethylene
63252	Carbaryl	76448	Heptachlor		(Perchloroethylene)
75150	Carbon disulfide	118741	Hexachlorobenzene	7550450	Titanium tetrachloride
56235	Carbon tetrachloride	87683	Hexachlorobutadiene	108883	Toluene
463581	Carbonyl sulfide	77474	Hexachlorocyclopentadiene	95807	2,4-Toluene diamine
120809	Catechol	67721	Hexachloroethane	584849	2,4-Toluene diisocyanate
133904	Chloramben	822060	Hexamethylene-1,6-diisocyanate	95534	o-Toluidine
57749	Chlordane	680319	Hexamethylphosphoramide	8001352	Toxaphene (chlorinated camphene)
7782505	Chlorine	110543	Hexane	120821	1,2,4-Trichlorobenzene
79118	Chloroacetic acid	302012	Hydrazine	79005	1,1,2-Trichloroethane
532274	2-Chloroacetophenone	7647010	Hydrochloric acid	79016	Trichloroethylene
108907	Chlorobenzene	7664393	Hydrogen fluoride (Hydrofluoric acid)	95954	2,4,5-Trichlorophenol
510156	Chlorobenzilate	123319	Hydroquinone	88062	2,4,6-Trichlorophenol
67663	Chloroform	78591	Isophorone	121448	Triethylamine
107302	Chloromethyl methyl ether	58899	Lindane (all isomers)	1582098	Trifluralin
126998	Chloroprene	108316	Maleic anhydride	540841	2,2,4-Trimethylpentane
19773	Cresols/Cresylic acid (isomers and mixture)	67561	Methanol	108054	Vinyl acetate
		72435	Methoxychlor	593602	Vinyl bromide
95487	0-Cresol	74839	Methyl bromide (Bromomethane)	75014	Vinyl chloride
108394	m-Cresol	74873	Methyl chloride (Chloromethane)	75354	Vinylidene chloride
106445	p-Cresol	71556	Methyl chloroform		(1,1-Dichloroethylene)
98828	Cumene		(1,1,1-Trichloroethane)	1330207	Xylenes (isomers and mixture)
94757	2,4-D, salts and esters	78933	Methyl ethyl ketone (2-Butanone)	95476	o-Xylenes
3547044	DDE	60344	Methyl hydrazine	108383	m-Xylenes
334883	Diazomethane	74884	Methyl iodide (Iodomethane)	106423	p-Xylenes
132649	Dibenzofurans	108101	Methyl isobutyl ketone (Hexone)	0	Antimony compounds
96128	1,2-Dibromo-3-chloropropane	624839	Methyl isocyanate	0	Arsenic compounds (inorganic, including arsine)
84742	Dibutylphthalate	80626	Methyl methacrylate	0	Beryllium compounds
106467	1,4-Dichlorobenzene(p)	1634044	Methyl tert butyl ether	0	Cadmium compounds
91941	3,3'-Dichlorobenzidene	101144	4,4-Methylene bis (2-chloroaniline)	0	Chromium compounds
111444	Dichloroethyl ether	75092	Methylene chloride (Dichloromethane)	0	Cobalt compounds
	(Bis(2chloroethyl)ether)	101688	Methylene diphenyl diisocyanate (MDI)	0	Coke oven emissions
542756	1,3-Dichloropropene	101779	4,4'-Methylenedianiline	0	Cyanide compounds
62737	Dichlorvos	91203	Naphthalene	0	Glycol ethers
111422	Diethanolamine	98953	Nitrobenzene	0	Lead compounds
121697	N,N-Diethyl aniline	92933	4-Nitrobiphenyl	0	Manganese compounds
	(N,N-Dimethylaniline)	100027	4-Nitrophenol	0	Mercury compounds
64675	Diethyl sulfate	79469	2-Nitropropane	0	Mineral fibers
119904	3,3-Dimethoxybenzidine	684935	N-Nitroso-N-methylurea	0	Nickel compounds
60117	Dimethyl aminoazobenzene	62759	N-Nitrosodimethylamine	0	Polycyclic organic matter
119937	3,3-Dimethylbenzidine	59892	N-Nitrosomorpholine	0	Radionuclides (including radon)
79447	Dimethyl carbamoyl chloride	56382	Parathion	0	Selenium compounds



APPENDIX E.

OTHER FEDERAL AND STATE REGULATIONS

Community Right-to-Know

If you calculated 10,000 pounds or more annual usage of any of the TRI-listed chemicals or other hazardous substances, you may have a responsibility to report those chemicals. This report is required by July 1 of each year for the chemical(s) used in the previous calendar year.

Clean Water Act (CWA)

The primary goal of the CWA is to protect, restore and maintain the chemical, physical and biological integrity of the waters of the United States. One interim goal of the act is to return the nation's water to conditions deemed "fishable and swimmable." All discharges into the waters of the United States, publicly owned treatment works, stormwater discharges, and storm sewers are covered under this act. Direct discharge to any surface water requires a National Pollutant Discharge Elimination System (NPDES) permit.

Discharge to a publicly owned treatment works (POTW) does not require a NPDES permit, but will require an industrial user permit issued by the local water treatment operator. All fabrication facilities are required to meet the general pre-treatment standards for discharge of process wastewater. The general pre-treatment requirements prohibit the following: 1) Pollutants that create a fire hazard in the POTW; 2) Pollutants that will cause corrosive damage to the POTW; 3) Pollutants (solid or viscous) in amounts that will obstruct flow in the POTW; 4) Any pollutant released at a flow rate or concentration that interferes with the POTW operations (this includes oxygen-demanding pollutants); 5) Effluents at a temperature that will inhibit biological activity in the POTW; 6) Petroleum oils, non-biodegradable cutting fluid, or mineral oil products which will pass through the POTW or interfere with performance of chemicals in the POTW; 7) Pollutants that result in toxic fumes within the POTW; and 8) Any trucked or hauled pollutants. Facilities also are required to notify the POTW within 24 hours if any violation of pre-treatment requirements occur. Often, state or local governments have additional reporting requirements, which should be addressed before discharge.

Often, a NPDES permit is required even if no wastewater is produced on-site. If any stormwater comes into contact with industrial activity or construction activity, a permit will be necessary. This contact includes any handling equipment or activities, raw materials, intermediate products, final products, or industrial machinery exposed to stormwater that drains to a storm sewer system or directly to receiving waters. Note that a stormwater permit is not required for municipal systems that have combined wastewater and stormwater systems, but the POTW should be informed that industrial stormwater will be entering the sewers.



Occupational Safety and Health Administration Act

Under OSHA, employers (regardless of size) are required to meet several standards that will maintain a safe and healthful workplace. The “general duty clause” of OSHA states that “a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm” must be provided to the employee. Section 1910.1200 of OSHA is the hazard communication standard and requires employers to inventory, classify and label all chemical substances on-site that are considered to be “hazardous” to health or have physical properties that are hazardous. All employers must have a written program available to employees that includes inspection, inventory, labeling, availability of Material Safety Data Sheets (MSDS), employee training, agency reporting and record-keeping systems. Employers of fewer than 10 people may be exempt from the record-keeping systems only. Several states have their own OSHA regulations, and it will therefore be necessary for facilities to contact their state agency to find out their requirements.

Superfund (Comprehensive Environmental Response, Compensation and Liability Act) (CERCLA) & Superfund Amendments and Reauthorization Act (SARA)

Under the original Superfund, the EPA was authorized to undertake any measures necessary to address any hazard to human health and the environment triggered by burning, leaking or explosion of hazardous substances, contamination of food chains, or drinking water contamination. Relevant to the metal fabrication industry is the requirement to report all releases of all CERCLA hazardous substances to the National Emergency Response Center within 24 hours. The need for reporting is based on the chemical-specific reportable quantity (RQ) number assigned by EPA.

CERCLA Reportable Quantities for Chemicals used in the Metal Fabrication Industry

The reauthorization of the Superfund act by SARA is significant to fabricators because of Title III, known as the Emergency Planning and Community Right-to-Know Act (EPCRA). This created the emergency planning guidelines and included the right of local governments and the public to obtain information on hazards posed by potential toxic substance releases from the facility. The levels for reporting the presence of hazardous chemicals are the presence of 10,000 lbs. of hazardous chemicals, and 500 lbs. of extremely hazardous chemicals.

In addition, any facility that is required by OSHA’s Hazard Communication Standard (29 CFR 1910.1200) to have Material Safety Data Sheets (MSDS) for chemicals on-site, also must provide copies of said MSDSs to the state emergency response commission, the local emergency planning commission, and the local fire department. Facilities also must provide to these three organizations an annual report called a “Tier I” indicating the amount of chemicals above the threshold quantities on-site. If any agency that receives a Tier I report requests additional information, a Tier II report containing a summary of all chemicals in any quantity must be supplied within 30 days. The level of the threshold quantities can be more stringently determined by the individual states and is available from the local environmental agency.



Toxic Substances Control Act (TSCA)

Under TSCA, the EPA is given the authority to limit or prohibit the manufacture, processing, distribution or disposal of a chemical substance which EPA has determined poses a risk to human health or the environment. EPA also will gather information on all risks associated with toxicity of all new and existing chemicals. Of importance to the metal fabrication industry are sections 4, 5, 6 and 8.

Section 4 is the authorization for the EPA to require testing of chemical substances or mixtures the agency determines could be a risk to human health or the environment. Section 5 grants EPA the right to test all new chemical substances to determine their toxicity and subsequent risk 90 days before manufacturing, processing or importing of said chemical. Section 6 is the official notification that the EPA may regulate the manufacture, processing, distribution in commerce, and the use and disposal of any chemical substance determined to be toxic. Section 8 is the requirement for all users and manufacturers to keep records and submit reports to the EPA. Fabricators using any chemicals or process materials containing chemicals should contact the local environmental agency to determine reporting requirements.



Appendix F.

PUBLICATIONS

Profile of the Fabricated Metal Products Industry

This notebook profiles the nationwide characteristics of the metal fabrication industry, including metal finishing. This business categorization corresponds with the Standard Industrial Classification (SIC) code 34 used by the Bureau of Census to track the flow of goods and services within the economy.

This project, at the time of publication in 1995, cited a Census estimate that identified approximately 34,000 facilities within the SIC code 34. Background information is provided on the size, geographic distribution, employment, production, sales and economic condition of the metal products industry. Also discussed in this document are: 1) Major industrial processes unique to the industry; 2) Profiles of the pollutant releases reported by this industry; 3) Pollution prevention opportunities; 4) Summary of applicable federal statutes and regulations for all environmental media; 5) History of compliance and enforcement actions; 6) Description of activities undertaken by this industry sector and public agencies to voluntarily improve environmental performance; and 7) Citation of other sources of information.

Contact: Superintendent of Documents, U.S. Government Printing Office, at 202-512-2250 to order this document. Check the Government Printing Office Web site for more information.

<http://www.access.gpo.gov>

Cutting Fluid Management for Small Machining Operations

This manual, produced by the Iowa Waste Reduction Center, is a practical pollution prevention guide for managing cutting fluids. The manual is divided into five sections. Section 1 introduces the reader to fluid management. Section 2 provides a brief review of cutting fluid systems, functions of cutting fluids and characteristics a fluid should have in order to perform safely and effectively. Section 3 presents information on cutting fluid selection and types of cutting fluids available. It covers the four types of metalworking fluids used today, their advantages and disadvantages, and factors to consider in selecting a fluid. Section 4 discusses the four integral components of fluid management—administration, monitoring, maintenance and recycling. Section 5 presents information on waste management and disposal.

Contact: Iowa Waste Reduction Center, University of Northern Iowa, at 319-273-2079 to order this manual.



Pollution Prevention Implementation Plan for Metal Manufacturers

This manual, developed by the Iowa Small Business Development Centers and the Iowa Waste Reduction Center, offers good pollution prevention and best management practices for several processes in the metal fabrication industry. The highlighted processes are: painting; painting equipment cleaning; parts washing; and cutting fluid management.

Contact: Iowa Waste Reduction Center, University of Northern Iowa, at 319-273-2079.

Shop Guide to Reduce the Waste of Metalworking Fluids – A Competitive Advantage Manual for the Metal Fabricating and Machining Industry

This guide was produced by the Institute of Advanced Manufacturing Sciences and the Waste Reduction and Technology Transfer Foundation. The guide offers waste reduction techniques for metalworking fluids and other fluids and lubricants. This guide also offers ideas for developing a waste reduction implementation plan, and suggests other useful resources for more information.

Contact: Institute of Advanced Manufacturing Sciences, at 1-800-345-4482 to order a copy of this guide.

Keep Your Shop in Tune – A Best Management Practices Guide for Automotive Industries

This manual, produced by the Oregon Pollution Prevention Outreach Team, offers practical do's and don'ts for every situation in an automotive repair facility. The guide can help metal fabricators that have a maintenance department which conducts fleet maintenance for forklifts and trucks. The main focus is on: changing automotive fluids; fueling vehicles; air conditioning repair; cleaning equipment and parts; vehicle washing, engine cleaning and steam cleaning; metal grinding and finishing; car prep, body work and refinishing; outdoor parking and auto maintenance; removing and storing batteries; storage and disposal of wastes and containers; and other practices to control pollution.

Contact: City of Portland Bureau of Environmental Services, at 503-823-7767

Shop Guide to Reduce Wastewater from the Machining and Metal Fabrication Industry – A Competitive Advantage Manual

This guide was produced by the Institute of Advanced Manufacturing Sciences and the Waste Reduction and Technology Transfer Foundation. The guide offers techniques for reducing wastewater from fabrication and machining processes. The guide introduces sources of wastewater discharges, wastewater treatment and recycling technologies, other wastewater reduction techniques, and setting up a waste reduction program.

Contact: Institute of Advanced Manufacturing Sciences, at 800-345-4482 to order a copy of this guide.