

Resources to Help You Reduce Waste, Save Money and Achieve Compliance

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March 23, 2006



Today's Outline

- ★ What is pollution prevention (P2)?
- ★ P2 as a business & compliance tool
- ★ Case studies (P2 success stories)
- ★ OCAPP's services



What Is Pollution Prevention?

- ★ Front of pipe
 - ★ Preventative strategy/proactive
- ★ Process focused
 - ★ Optimizes processes/prevents losses
- ★ True reductions
 - ★ Real measurable environmental benefit & pollutant reduction
- ★ Go beyond compliance
 - ★ Not only can meet, but go beyond
- ★ Cost-effective
 - ★ Reduces raw materials, value-added system



P2 in Manufacturing

- ★ Substitute less toxic materials
- ★ Product redesign
- ★ Modify equipment/process
- ★ Production scheduling
- ★ Preventative maintenance
- ★ Spill and leak prevention
- ★ Energy efficiency



Manufacturing P2



Material handling improvements

Plastic media blasting



Improved equipment & practices

Manufacturing P2



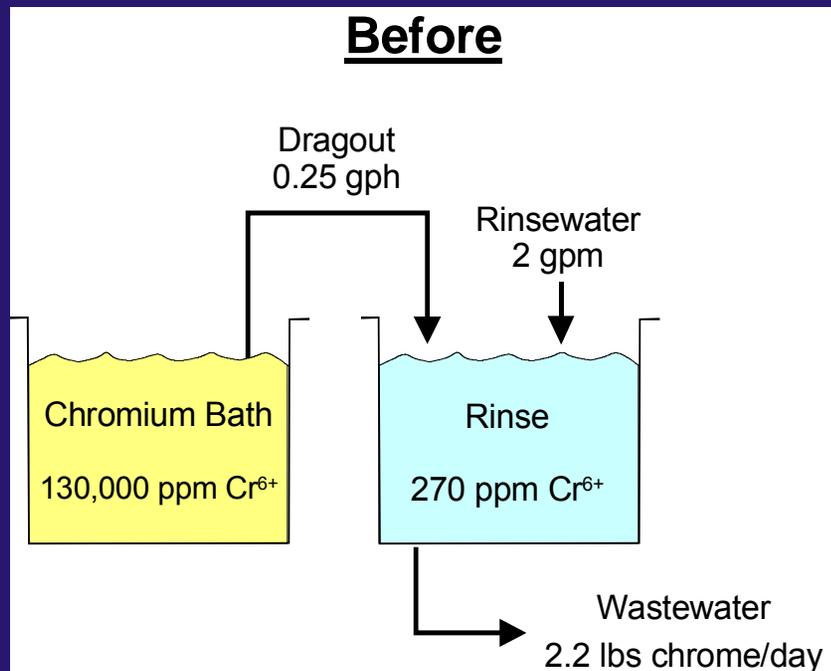
Enzyme cleaners

By-product reuse

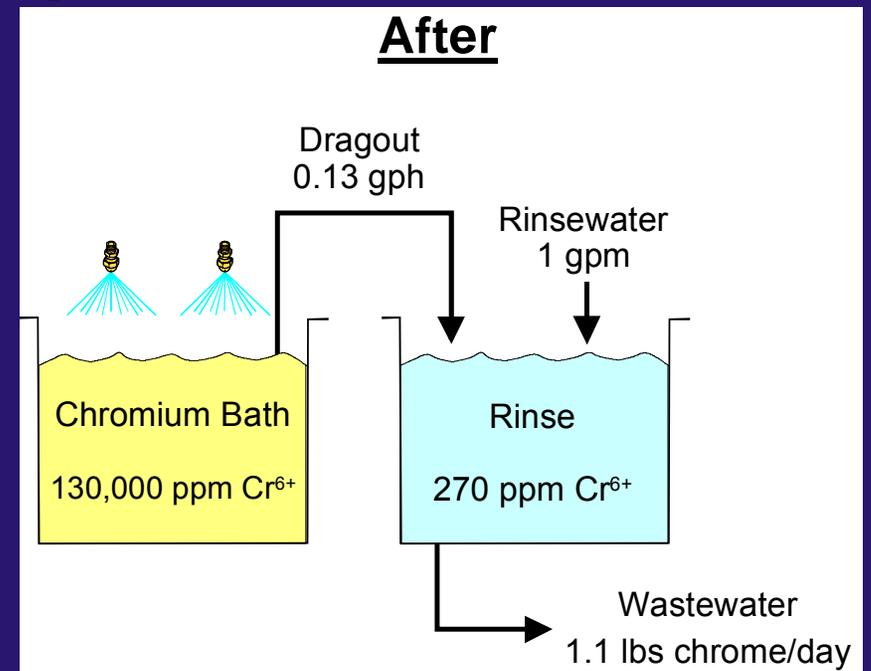


Energy efficiency

Equipment/Process Change Impact Example



- Parts moved directly to rinse tank from plating bath
- Dragout rate = 0.25 GPH
- Rinse water flow rate = 2 GPM
- Chromium discharge = 2.2 lb/day



- Parts rinsed with mist spray above plating tank
- Dragout rate = 0.13 GPH
- Rinse water flow rate = 1 GPM
- Chromium discharge = 1.1 lb/day

The P2 Approach to Compliance

- ★ Think “P2” first
 - ★ Problem solving/management strategy
- ★ Examine processes
 - ★ Losses (wastes) = REGULATION
- ★ Identify and evaluate P2
 - ★ Identify all source reduction opportunities



Developing Internal P2 Program

- ★ Establish P2 program
- ★ Organize P2 program
- ★ Preliminary assessment
- ★ Write P2 plan
- ★ Detailed assessment
- ★ Define P2 options
- ★ Cost considerations



Internal P2 Program

- ★ Feasibility analysis
- ★ Write assessment report
- ★ Implement P2 plan
- ★ Measure progress
- ★ Program evaluation
- ★ Maintain P2 program
- ★ Rotate team



P2 Program Resources

- ★ Ohio P2 & Waste Minimization Planning Guidance Manual (Ohio EPA)

www.epa.state.oh.us/opp/P2WasMin.pdf

- ★ An Organizational Guide to P2 (U.S. EPA)

www.epa.state.oh.us/opp/Organizational%20Guide%20to%20P2.pdf

- ★ P2 – Getting Starting (Ohio EPA)

www.epa.state.oh.us/opp/planning/factsheet5.pdf

P2 Case Study - Neaton Auto Parts Manufacturing, Inc.

- ★ Eaton, Ohio
- ★ 700 employees
- ★ Steering wheels, instrument panel components, trim parts, air bag covers



Neaton

- ★ Processes include “reaction injection molding” (RIM), vacuum forming, die casting, assembly, painting
- ★ Large quantity generator (LQG) and title V facility
- ★ Use “kaizen” P2 approach



Neaton

- ★ Investigated paint line improvements to air bag cover line
- ★ Redesigned robots, installed humidity controls, added blow-off stations
- ★ Saved \$333,000 in reduced paint use
- ★ Reduced VOCs by 8 TPY



Neaton

- ★ Installed enclosed paint gun cleaners and a solvent distillation unit in RIM department
- ★ Reduced hazardous waste generation by more than 41,000 lbs./yr
- ★ Saving more than \$42,144 annually



Neaton

- ★ Substituted color resin substrates for dash board panels
- ★ Reduced VOCs by 13 TPY
- ★ Part of \$745,325 total first year savings for IP upper department



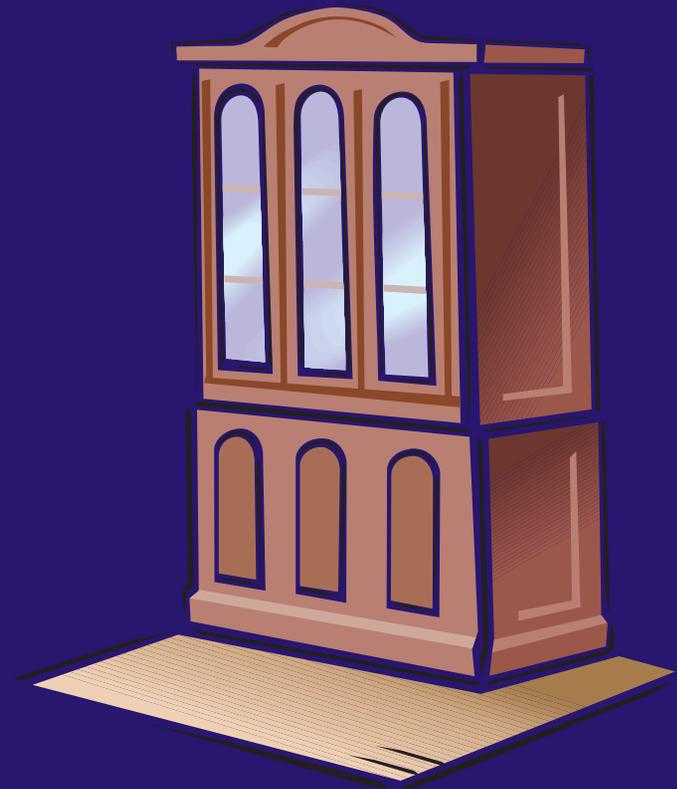
Neaton

- ★ Re-examined mold cleaning schedule
 - ★ Changed from cleaning once a shift to once a day
- ★ Reduced scrap from 60 parts a day to 20 parts day
 - ★ Saved over \$124,454 in materials
 - ★ Reduced solid waste by over 59,000 lbs./Yr



P2 Case Study - Mill's Pride

- ★ Waverly, Ohio
- ★ 2,500 employees
- ★ Manufacturer of hardwood kitchen cabinets and accessories



Mill's Pride

- ★ Implemented several P2 projects
 - ★ Based on recommendations from P2 assessment conducted by Ohio EPA
- ★ Saved \$472,000 in the first year after making improvements



Coating Line Project

- ★ Installed reciprocators on coating line
- ★ Component of spray gun w/ electric eye
- ★ “Reads” edges of board, shutting off the spray
- ★ Decreased over spray & increased transfer efficiency by 35%



Coating Line Project

- ★ Generated 33 fewer drums of hazardous waste solvents & coating
- ★ Saved more than \$27,000 in disposal costs
- ★ Purchased 35% less stain, top coat & sealer (\$432,000 savings)
- ★ 30% reduction in VOC emissions (137 ton annual reduction)



P2 Case Study - Tomasco mulciber, Inc

- ★ Tier 1 & 2 automotive part supplier
- ★ Electrodeposition coating
 - ★ Degreasing, zinc phosphating, chromate passivation, and leaded water-based dip coating processes



Tomasco mulciber, Inc

- ★ P2 addressed compliance upsets
 - ★ Counter flow rinses
 - ★ Chrome elimination
 - ★ Testing of lead free paint
 - ★ Ultra filtration for degreasing baths (part of WWTP improvements)
 - ★ Adjusted rinse flow rates & bath dump schedules



Tomasco Results

- ★ Bath life extended to 7 days
- ★ Wastewater treatment flow reduced to 6,000 GPD
- ★ Treatment system operates 8 hours per day while e-coat operates 20 hours per day
- ★ Chemical use reduced by 60%



Tomasco Results

- ★ 9,000 gpd flow reduction =
 - ★ \$10,000 per year less in water/sewer fees
 - ★ \$4,000 per year less in chemical costs
 - ★ \$700 per year less in sludge disposal
 - ★ 12 hours per day reduction in operator time



Whitaker Surface Systems

- ★ Job shop electroplater
 - ★ Automotive, appliance, electronic, houseware & hardware
- ★ P2 in hazardous waste enforcement settlement



Whitaker Surface Systems

★ P2 activities

- ★ Installed spray rinse
- ★ Counterflow rinsing
- ★ Flow restrictors
- ★ Modified rinse tank design
- ★ Automated spray barrel rinsing system



Whitaker Results

- ★ Reduced water use more than 7,400 GPD (1.85 million gallons annually) – 15% reduction
- ★ Reduced associated wastewater generation
- ★ Reduced chromium by 420 pounds annually



OCAPP's P2 Services

★ P2 assessments

- ★ On-site survey of operations to identify & evaluate waste & pollution reduction opportunities
 - ▶ Identify ways to reduce associated waste costs
 - ▶ Optimize resources, minimize non-product related resources & increase productivity

★ Online resources

- ★ P2 documents & guidance
- ★ Online training for metal finishing, painting, etc



OCAPP's Other Services

- ★ OCAPP is a non-regulatory program at Ohio EPA
 - ★ Information obtained by the office is not shared with Ohio EPA inspection or enforcement staff
 - ★ Toll-free hotline
 - ★ On-site compliance assistance for small business
 - ★ Compliance and P2 workshops/training
 - ★ Compliance and regulatory requirement publications



OCAPP's Other Services

- ★ Quarterly newsletter
- ★ Assistance in completing air permit application forms
- ★ Advisory panel/regulated community input
- ★ Financial assistance referrals
- ★ Help resolve violations with district office



Where Can I Get More Help?



www.epa.state.oh.us/ocapp

614-644-3469

800-329-7518

