

NSRP – Environmental Technologies Panel

John L. Wittenborn

Kelley Drye Collier Shannon

202-342-8514

June 21, 2006

Mobile Alabama

Topics

▶ Clean Air Act Update

- New Source Review Reform
- National Ambient air Quality Standards
- CO₂ regulation
- Title V & misc.

▶ OSHA Hexavalent Chromium PEL

▶ Clean Water Act Update

- Waters of the U.S.
- SPCC
- TMDL
- Recent Litigation



Topics

- ▶ Hazardous Waste Issues
 - F006 Recycling
 - Definition of Solid Waste
 - Brownfields/Superfund Update
- ▶ Toxic Release Inventory
 - Framework for the Assessment of Metals
 - RSEI
 - Burden Reduction
- ▶ Miscellaneous Issues



Clean Air Act



Clean Air Act Update

▶ New Source Review Reform

- 4 phases

Phase I

- ▶ December 2002 Final Rule
 - Ten year look back (Baseline)
 - Actual to future Actual
 - Plant-wide Applicability Limit
 - Pollution Control Projects
 - Clean Unit exemption
 - New York et al v. EPA (June 24, 2005)



Phase 2

- ▶ October 27, 2003 Equipment Replacement
 - Part of RMRR:
 - 20% of replacement cost exclusion
 - Functionally equivalent
 - New York et al v. EPA (March 17, 2006)



Phase 3

► September 2005 hourly emission rate

- Definition of modification:

“Any physical change in, or change in the method of operation of a stationary source which increases the amount of any air pollutant emitted by such source .

..”

- Issue: How is increase in emission measured?
- Total annual emissions?
- Hourly rate of emissions?



Phase 3

► Proposal

- Use hourly rate test for electric utilities
- Comment: Expand application of hourly rate test to all industry
- Impact of New York II

Phase 4

▶ Aggregation & Debottlenecking

- Current status:
- Policies
 - ▶ Sum all related projects (typically a 5 year window)
 - ▶ Sum all upstream & downstream emission increases

▶ Proposal:

- Rule
 - ▶ Sum only projects economically or technically dependent on each other
 - ▶ Only look at emissions from unit undergoing change if upstream and downstream units are permitted for emissions

▶ Status: OMB Review



Debottlenecking – Current Policy

Project emissions < significance thresholds
NSR does not apply

Unless

- 1) Project debottlenecks another unit at the source;
- 2) Combined increase in emissions > NSR Thresholds or
- 3) Netting calculation > NSR Thresholds



Debottlenecking – Proposed Rule

Causation requirement = “but for”

Only count emissions increases “caused by”
the physical change or change in method of
operation

Debottlenecking – EPA proposal

- ▶ Causation test: alternatives
 - Legal causation: emission increase (at debottlenecked unit) not “caused by” physical or operational change if the post-projects emissions were already authorized by a permit (enforceable)

How it works:

- New units: emissions increase = PTE
- Unit undergoing change: emissions increase based on actual to projected actual test
- Debottlenecked unit (no permit limit): emissions increase = actual to projected actual test
- Debottlenecked unit (subject to permit limit):
- Emissions increase = \emptyset (unless permit limit is exceeded)
- Sum all emissions increases and compare to NSR



Debottlenecking – EPA Proposal

Alternative approaches

- Physical Causation: emission increases at unchanged units count if the unchanged units were physically incapable of operating at a higher level absent the change

Example: EAF & caster
 EAF & Rolling mill

- Economic Causation: not physically possible or economically rational

Aggregation – Current Policy

▶ 2 Step approach

- Step 1 – evaluate emissions from proposed project
- Step 2 – Source –wide netting

Aggregation vrs Circumvention

Aggregation

Not based on timing alone

Current policy =

“I know it when I see it”

Aggregation – EPA Proposal

When a project is technically or economically dependent upon another project, the emissions from each must be added together

Technical: Can the project achieve its purpose alone?

Economic: Can't achieve ROI without another project

Netting – Current Policy

Sum all contemporaneous increases and decreases at the source. Only increases for project count

Contemporaneous = 5 years

Decreases must be enforceable / verifiable



Netting - Proposal

Allows project netting (including decreases at the unit in Step 1)

No double counting

Clean Air Update

- ▶ Duke Energy v. EPA – Supreme Court
- ▶ EPA Enforcement Policy

National Ambient Air Quality Standards

The background features a dark blue-grey color with faint, light-colored graphics. On the left side, there is a compass rose with a needle pointing towards the top-left, and a circular scale with markings. The rest of the background is filled with a complex, irregular pattern of light-colored lines, resembling a topographic map or a network diagram.

National Ambient Air Quality Standards

Pollutant	Primary Stds.	Averaging Times	Secondary Stds.
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour	None
	35 ppm (40 mg/m ³)	1-hour	None
Lead	1.5 µg/m ³	Quarterly Average	Same as primary
Nitrogen Dioxide	0.053 ppm (100 µg/m ³)	Annual (Arithmetic Mean)	Same as primary
Particulate Matter (PM ₁₀)	50 µg/m ³	Annual (Arith. Mean)	Same as primary
	150 ug/m ³	24-hour	
Particulate Matter (PM _{2.5})	15.0 µg/m ³	Annual (Arith. Mean)	Same as primary
	65 ug/m ³	24-hour	
Ozone	0.08 ppm	8-hour	Same as primary
	0.12 ppm	1-hour	Same as primary
Sulfur Oxides	0.03 ppm	Annual (Arith. Mean)	-----
	0.14 pp.	24-hour	-----
	-----	3-hour	0.5 ppm* 1300 ug/m ³

NAAQS

Proposed Legislation: “Clear Skies”

- Goal and Objective
 - Modernization of power producing industry
 - Fixed schedule
 - Cap and trade
- 3 pollutants vrs. 4 pollutants
 - SO_x CO_2
 - NO_x
 - Hg
- Trade off for compliance with NSR /Regional Haze/§126
- Status



NAAQS

- ▶ Regulatory Programs
 - Clean Air Interstate Rule
 - Clean Air Mercury Rule

NAAQS Updates

▶ PM2.5 proposal – December 2005

- 24 hours – $35 \mu\text{g}/\text{m}^3$
- Annual – $15 \mu\text{g}/\text{m}^3$ (no change)

- Lead
- SO_2
- Ozone

▶ Status



Carbon Dioxide Regulation –climate change

- ▶ Massachusetts, et al. v. EPA (D. Conn.)
 - CO₂ as a criteria pollutant under § 109
- ▶ Mobile source cases
 - CO₂ as tail pipe pollutant under Title II
 - Massachusetts, et al. v. EPA (D.C. Court of Appeals)
 - ▶ California
- ▶ Industrial Boiler MACT Rule



▶ Litigation

- Massachusetts et al v EPA (U.S. Ct. of App. D.C.)
 - ▶ Regulate CO₂ under Title II (mobile sources)
 - ▶ EPA arguments:
 - Statute allows regulation of pollutants
Pollutants cause pollution
Climate change is not pollution
 - Congress chose not to regulate for climate change. Congress does not hide elephants in mouse holes
 - No clear connection between CO₂ and climate change
(contra findings during Clinton)
 - ▶ Opinion: EPA has discretion not to regulate. No finding that EPA lacks authority

▶ Litigation

- Connecticut v. AEP – 8 states vrs. Large utilities
 - ▶ Federal common law of public nuisance
 - ▶ Court: This is a political question. Take it to Washington

OSHA Hexavalent Chromium PEL



Rule Summary

- ▶ Final rule: Promulgated February 28, 2006
 - Implementation Date:
 - ▶ ≥ 20 employees November 27, 2006
 - ▶ ≤ 20 employees May 30, 2007
- ▶ Engineering Controls
 - Implementation Date: May 2010
- ▶ Permissible Exposure Limit (PEL) – $5 \mu\text{g}/\text{m}^3$
- ▶ *Action Level – $2.5 \mu\text{g}/\text{m}^3$
(Added in final rule)

* At employer's risk



Rule Summary

- Exposure monitoring – 6 month intervals
- Medical surveillance
- ▶ Exemptions Threshold
 - Material and/or operations cannot release Cr (VI) at $0.5 \mu\text{g}/\text{m}^3$ under expected conditions of use
- ▶ Partial Exemption: Exposures Under 30 days per Year
 - No engineering controls
 - No periodic medical surveillance



Rule Summary

▶ Ancillary Provisions

- Exposure Determination (Added in final rule)
- Scheduled monitoring option
 - ▶ Initial monitoring: personal breathing zone samples for each job category (highest exposed employee)
 - ▶ Periodic monitoring:
 - Every 3 months if > PEL
 - Every 6 months if > or = action level
 - Every change in process, raw materials, personnel, etc.
- Performance-oriented monitoring option
 - ▶ Air monitoring data, historical monitoring data, or objective data or any combination may be relied on to determine employee exposure

Rule Summary

- ▶ No Regulated Areas
- ▶ Engineering/Work Practice controls
 - Mandatory to the Point of Feasibility
 - Respirators Supplement Where Controls Are Infeasible

Rule Summary

Respiratory Protection

- 29 CFR 1910.134
- Applicable
 - ▶ Emergencies
 - ▶ Where controls are not feasible
 - ▶ To cover gap between controls and PEL
 - ▶ Less than 30 day employee exposed group

Housekeeping

- No Housekeeping Practices Provision



Rule Summary

PPE

- Trigger: Skin and Eye contact (Likely Hazard)
- No Cost to Employees
- Removal/Cleaning of PPE
- Special Laundering and Disposal Labeling (impermeable containers, labeled, notice)

Hygiene Areas

- Trigger: Where PPE Is Required
 - ▶ Change rooms
 - ▶ Wash facilities
 - ▶ Eating and drinking areas – free as practicable of Cr (VI)

Rule Summary

▶ Medical Surveillance

■ Trigger:

- ▶ Exposed at action level for 30 days a year
- ▶ Experience signs or symptoms
- ▶ Emergency exposure

■ Medical Exams:

- ▶ Within 30 days of assignment and 30 days of PLHCP recommendation
- ▶ Annually
- ▶ Signs or symptoms
- ▶ 30 days of emergency
- ▶ Termination



Rule Summary

- HAZCOM (Enhanced)
- Recordkeeping 29 CFR 1910.1020
 - ▶ Exposure monitoring data
 - ▶ Medical surveillance data

Economic Impacts

Cost Category	PEL Option $\mu\text{g}/\text{m}^3$)	
	5	1
Engineering Controls	\$4,067,116	\$7,838,271
Initial Exposure Assessment	\$369,329	\$491,290
Periodic Monitoring	\$510,185	\$1,613,589
Respirator Protection	\$16,912,270	\$24,304,789
PPE (supplied prior to reg.)	\$1,220,626	\$1,220,626
PPE (not supplied prior to reg.)	\$5,661,140	\$5,661,140
Hygiene Areas	\$407,800	\$407,800
Housekeeping	\$0	\$0
Medical Surveillance	\$672,753	\$1,213,334
Communication of Hazards	\$545,945	\$546,540
Recordkeeping	\$61,100	\$61,100
Total Cost	\$30,428,259	\$43,358,478

Litigation Challenges

All to General Industry Rule

- Petition for Higher PEL
 - ▶ SSINA
 - ▶ SFIC
 - ▶ NAM
 - ▶ EEI
- Intervene to Protect 5 PEL
 - ▶ Aerospace
 - ▶ CPMA
 - ▶ Portland Cement



Litigation Challenges

- ▶ All to General Industry Rule
 - Petition for Lower PEL (.25)
 - ▶ Public Citizen
 - ▶ Steelworkers
 - ▶ AFL-CIO
 - ▶ Teamsters
 - ▶ Laborers International Union

CLEAN WATER ACT



Clean Water Act Update

- ▶ Spill Prevention Control and Counter measures (SPCC)
 - New date – October 31, 2007
 - Old rule still in effect!!
- ▶ Proposed Amendments
 - Self-certification for low volume facilities
 - Oil-filled operational equipment
 - Motive power
- ▶ Guidance for Regional Inspectors



Waters of the U.S.

- ▶ Solid Waste Authority of Northern Cook County (SWANCC)
 - Migratory Bird Treaty Act not sufficient nexus to isolated waters
 - Numerous federal district court and Court of Appeals
 - Supreme Court argument in COE enforcement cases
 - ▶ Hydrologic connection
 - ▶ Commerce clause



Total Maximum Daily Load

► Issue:

- Does “daily” allow for seasonal or annual TMDLs
- Conflict in circuits
- Impact

Recent CUA Cases

South Florida Water Mgmt Dist v. Miccosukee Tribe

(U.S. Sup. Ct March 2004)

Pollutants in the water vrs. pollutants added

Ducked issue: “Meaningfully distinct water bodies”

S D Warren v. Maine (U.S. Sup. Ct. May 2006)

§ 401 State Water Quality certification

Discharge = flowing out

Discharge ≠ Pollutants under § 401

Recent CUA Cases

EPA Rulemaking

June 1, 2006

Water transfers would not need NPDES permits
Recent 2nd Circuit Case to the contrary

Rapenos & Carabell (U.S. Sup. Ct. June 2006)

“Waters of the U.S.”

C.O.E. wetlands enforcement cases

Remanded to 6th Circuit

Plaintiffs: Waters of U.S. =

Actual bodies of water may include seasonal streams, but not drainage ditches. Wetlands included if there is a direct surface hydrological connection to actual “waters”

HAZARDOUS WASTE ISSUES



Hazardous Waste Issues Update

- ▶ F006 Recyclers – EPA Proposal
 - Encourage recycling of electroplating wastes by removing regulatory disincentives
 - Recover metal resources otherwise lost to landfills
- ▶ Proposed rule sent to OMB – Dec. 2005
 - Also applies to F006, F007, & F008

What are F006, F007 and F008 Wastes?

- ▶ F006 – sludges (usually from filter press) from electroplating wastewater treatment processes
- ▶ F007 – spent cyanide plating baths from electroplating operations
- ▶ F008 – plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.



Why are these wastes listed?

- ▶ F006 waste was listed for the hazardous constituents cadmium, hexavalent chromium, nickel, and complex cyanides. It also may contain lead, arsenic, and organics.

Why are these wastes listed?

- As part of listing process, the Agency identified damage incidents associated with contaminated wells, destruction of animal life that were attributable to the improper disposal of electroplating wastes.

Why are these wastes listed?

- ▶ F007 and F008 wastes were listed as hazardous wastes because each of the wastes exhibits either reactive or toxic properties, particularly because of their cyanide content.

How much electroplating waste is generated and recycled annually?

- ▶ Total affected volume: 125,000 tons generated in 2001
 - 50,000 tons recycled
 - 75,000 tons treated, stabilized or landfilled
- ▶ 1,400 affected facilities (50% are job shops or PWB producers)

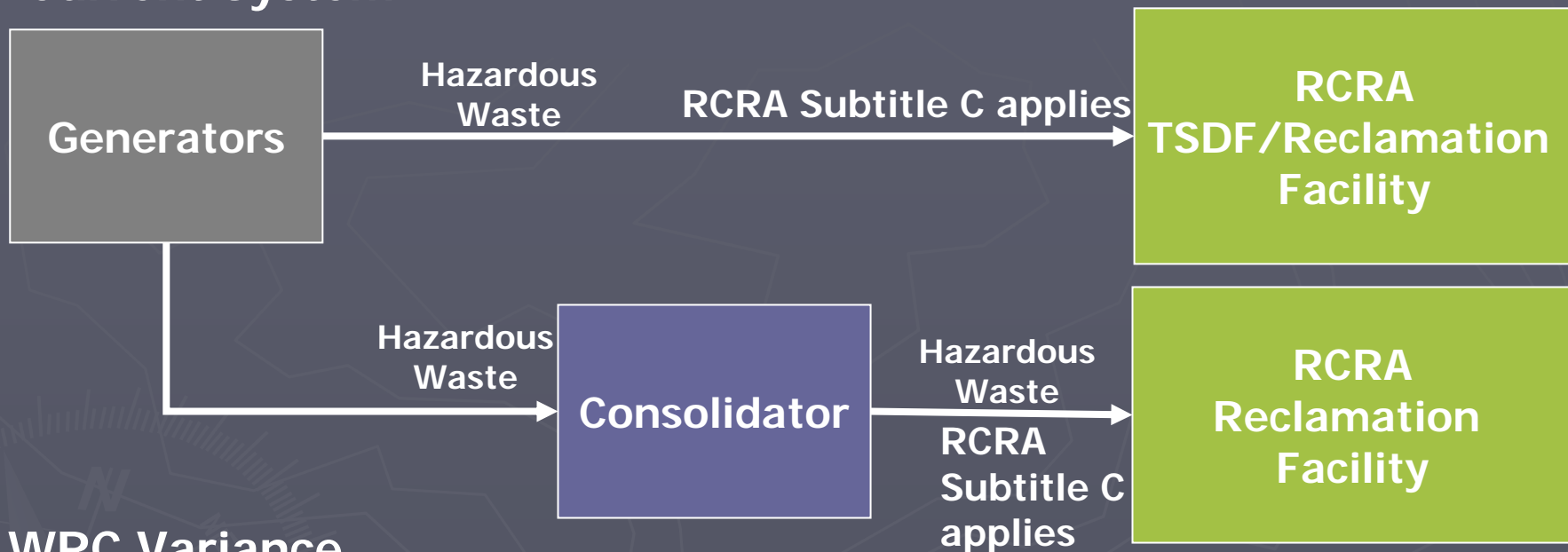
What are the Recoverable Metals of Concern?

- ▶ Primarily Copper, Nickel and precious metals
- ▶ To lesser extent, chromium, zinc and tin

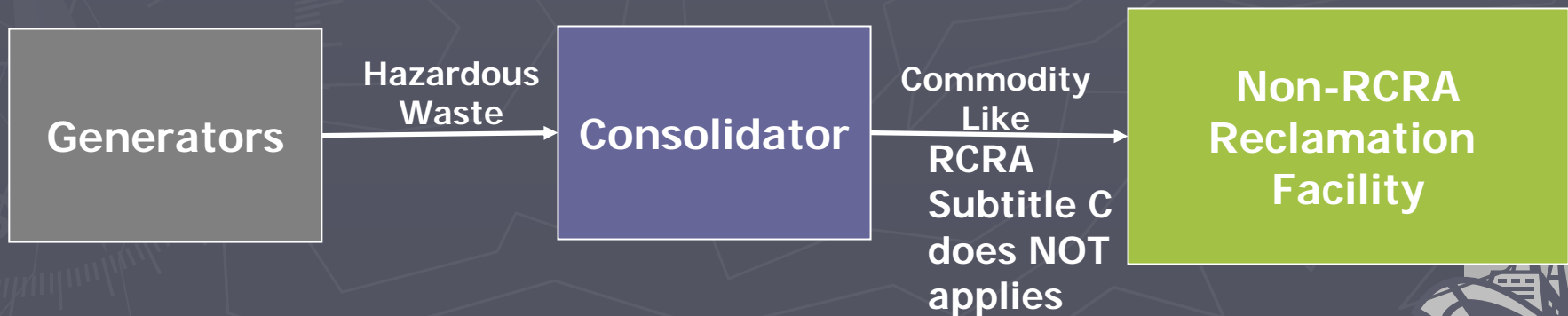
Figure 1

The world of Electroplating Wastes

Current System



WRC Variance



Proposed Regulatory Framework: Two tiered system

- ▶ Tier 1 – Conditional exclusion from the definition of solid waste (DSW) for commodity-like electroplating wastes

Base Metal

Minimum Concentration (dry weight, as generated)

Copper

18% or equivalent in precious metals, or

Nickel

12% or equivalent in precious metals

- ▶ Ion exchange canisters used to treat wastewaters from electroplating operations sent off-site for resin regeneration and metals recovery also excluded from DSW



Conditions needed to satisfy exclusion from DSW for commodity-like materials

- Initial notification to EPA or authorized state
- Re-notification to EPA or authorized state if status of facility changes
- Rejected loads
- Materials managed to minimize loss
- Normal business records, including a legally binding contract between pertinent parties, and analytical test results records
- Compliance with export & import requirements
- Compliance w/cyanide limitations
- Compliance with speculative accumulation, burning for energy recovery and use constituting disposal requirements



Alternative Approaches/Options Designed to foster greater flexibility

- Rely on contract specifications rather than specified concentrations to determine commodity-like thresholds
- Rely on range of concentrations, adjusted periodically, to determine commodity-like thresholds
- Rely on facility records associated average annual slag concentrations
- Rely on a mass balance approach to estimate metal recovery rates and associated useful contribution to recovery process
- Expand the list of metals to include chromium, zinc and tin
- **Exclude from DSW all recyclable electroplating wastes providing a useful contribution to the recovery process**

F006 Rule Status

- ▶ May 2006 – Pulled during OMB review
- ▶ Likely reason – overtaken by Definition of Solid Waste Reform

Definition of Solid Waste Reform

- ▶ Proposal: October 2003
 - Exempt recycling within the same four digit NAICS code
 - Codify definition of Legitimate Recycling
 - Alternative: Broad exclusion based on legitimacy

DSW Status

▶ Issues:

- Broad exclusion potential damage impacts
 - ▶ New Superfund sites
 - ▶ Lack of state control
 - ▶ No financial assurance
 - ▶ No transportation controls

▶ Solution

- ▶ Conditional Exclusion
- ▶ Conditions?
- ▶ NODA?



RCRA Enforcement Case

EPA Admin Law Judge opinion

March 30

In re General Motors

Paint purge solvents

Holding: Purge mixture becomes a RCRA hazardous waste once the solvent becomes contaminated with paint

Result: Paint lines & storage tanks (prior to recycling) must meet RCRA requirements

RCRA Burden Reduction

March 15, 2006 – Final Rule

- TSDF Records

Was life of facility – now 3 -5 years

Ground water monitoring and clean up records still forever

- TSDF can use in house certified engineer. No longer required to use independent registered PE

- RCRA tank system inspections was daily, now weekly

leak detection systems data review still daily



RCRA Burden Reduction

- Performance Track facilities –
 - ▶ Monthly inspections for tanks, containers & areas subject to spills
- Training – Can use either RCRA or OSHA emergency response training
- Consolidated contingency plans
- Generators sending wastes for recycling:
Notification & certification for first shipment, then only with changes



Brownfields/Superfund



Brownfields/Superfund Updates

- ▶ Cooper Industries v. Aviall Services – Dec. 2004
- ▶ Recent trends – Use of § 107 recovery rights
- ▶ Superfund Amendments & Brownfields Recycling Act
 - New & modified defenses
 - ▶ Innocent Landowner
 - ▶ Contiguous property owner
 - ▶ Bona fide prospective purchaser
 - “All Appropriate Inquiry”
 - “Reasonable Steps”



TRI ISSUES UPDATE



TRI Issues Update

- ▶ Framework for Inorganic Metals Risk Assessment

Nearly final

Intended for evaluating metals in ecological and human health risk assessments

Risk Assessment Framework for Metals

▶ Background

- 1998 RCRA Draft PBT List
 - ▶ Included 12 metals
 - ▶ Priority setting for rulemaking
 - Enforcement
 - ▶ Inappropriate for metals
- EPA PBT initiatives
 - ▶ 1999 – dioxins & HG added to TRI
 - ▶ 2001 – TRI lead rule
 - ▶ elimination of de minimis
 - ▶ lowered reporting threshold
 - ▶ Litigation



Risk Assessment Framework for Metals

► EPA Response

- Experts workshop – 2000
 - Should go to SAB
 - Need alternative for metals
- EPA Acknowledgment Letter – 2001
- Stakeholder meetings – 2002
- SAB meeting -2002

Risk Assessment Framework for Metals

► SAB Conclusion

- Must assess metals differently than organics
- Persistence is not appropriate criterion for metals
- Bio availability is key
- Chemical speciation is critical

Risk Assessment Framework for Metals Process

► Favorable Outcomes

- New assessment process for all media
- Possible reconsideration of TRI PBT decisions for metals (i.e., lead)
- Other environmental regs?
 - Speciation
 - bioavailability

Risk Screening Environmental Indicators

► Risk Screening Tool – TRI based

Computer Model – Windows

www.epa.gov/opptintr/rsei

► Approach

- Uses: amount of release
location (GPS)
toxicity
fate and transport
route of exposure
number of people affected

Generates: Numerical value for risk



Risk Screening Environmental Indicators

▶ Uses (intended)

Trend analysis

Ranking and priority setting for chemicals (or industry)

Community projects

Environmental Justice

▶ Uses (unintended)

Permitting decisions

Toxic tort

Scoring points versus industry



Risk Screening Environmental Indicators

► Concerns with model

- Accuracy of TRI data
- Uses most sensitive chronic tox endpoint in IRIS for inhalation or oral exposure
- Metal compounds = tox endpoint of parent metal at highest chronic value for any valence
- Toxicity weighting values

Risk Screening Environmental Indicators

Example of Inhalation Toxicity Weights

Benzene	750	Lead	8,800
Mercury	6,000	Manganese	36,000
Asbestos	1,000,000	Chromium	86,000
PCBs	1,500	Nickel	36,000
Chlorine	9,000	Copper	750
MIC (Bhopal)	1,800	Zinc	51
		Arsenic	60,000
		Cadmium	90,000

EPA's "Risk Screening Environmental Indicators" (RSEI) Database

A Misleading And Inaccurate
Database

Why the RSEI database needs to be corrected

- ▶ Media use the database to undermine companies that are otherwise good environmental stewards
- ▶ EG: Carpenter Technology Corporation
 - Received negative media coverage reporting it as 7th in the nation in potential health “risk” to the community.
 - The Truth: Carpenter enjoyed an excellent reputation among the community, employees and its regulators and had reduced TRI chemical releases

Why is the RSEI Database so Misleading?

- ▶ The “*Risk* Screening Environmental Database,” despite its name, does not measure risk to individuals nor quantify risk
 - EPA disclaimers are inadequate and confusing
 - ▶ EPA describes the database as “risk related” and “risk based” but not a “quantitative assessment of risk”
 - ▶ This is a meaningless distinction to non-scientist citizens and media

Weaknesses in the RSEI database's reporting of Metals and Metal Compounds

The RSEI does not distinguish between more or less toxic forms of metals and metal compounds

- “Metal and Metal Compounds are assumed to be released in the valence state associated with the highest chronic toxicity weight”
- Releases of any chromium valence will be assumed to be Hexavalent chromium
- Assumption that all nickel emissions are toxic
- A facility that emits trivalent chromium and nickel oxide, neither of which the EPA recognizes as a a carcinogen, will appear under the RSEI to be assigned an extremely high “risk” valuation

Additional Problems with the RSEI: Use of the Toxic Release Inventory (TRI)

- ▶ EPA's model includes quantities transferred off site for recycling
- ▶ Chromium and Nickel that is productively recycled by industry is reported as a "release" and grossly mischaracterizes the risk to surrounding communities
- ▶ Industries that responsibly recycle are instead branded as polluters by the EPA and the media



What Can be Done to Correct the RSEI?

- ▶ KDCS has expressed concerns about the RSEI database to the EPA in a recent meeting
- ▶ EPA has offered to add additional caveats to the website
 - Additional website statements will not avoid or mitigate public relations damage that the program already has created

KDCS's Suggestions to correct RSEI

- ▶ Allow Companies to amend individual data
- ▶ Allow and encourage TRI reporting by metal compound Species
 - Current system is akin to reporting all organic compounds as “carbon compounds”
 - In the Alternative, Remove Metals from RSEI
 - ▶ No Data is better than bad data
- ▶ Eliminate the ranking of Companies
 - ▶ RSEI claims not to be a rating system yet incorporates or allows the development of facility rankings based on risk



Potential Remedies

- ▶ Informally request that EPA correct erroneous and misleading data in the RSEI database
- ▶ File a formal administrative appeal of the data under the Data Quality Act