

**U.S. Consumer Product Safety Commission  
LOG OF MEETING**

CPSC (b)(1) Cleared  
No Mfrs/PrvtLbrs or  
Products Identified  
Excepted by \_\_\_\_\_  
Firms Notified, \_\_\_\_\_  
Comments Processed.

**SUBJECT: Chromated Copper Arsenate (CCA) "Pressure Treated" Wood**

**Informational Meeting requested by Michael Brown, Brown and Freeston, who represents Arch, Osmose, and Chemical Specialties Inc (CSI), manufacturers of CCA-treated wood with the CPSC staff.**

**DATE OF MEETING: October 9, 2002**

**LOG ENTRY SOURCE: Patricia Bittner**

**DATE OF LOG ENTRY: October 15, 2002**

**LOCATION: CPSC Headquarters, Room 410 B/C**

**CPSC ATTENDEE(S): Michael Babich, Patricia Bittner, Mary Ann Danello, Jacquie Elder, Jacque Ferrante, Ken Giles, Kris Hatlelid, Scott Heh, Mark Levenson, Lowell Martin, Jonathan Midgett, Cheryl Osterhout, Warren Porter, Lori Saltzman, Patsy Semple, Geri Smith, Treye Thomas, Pamela Weller, Troy Whitfield, Dennis Wilson**

**NON-CPSC ATTENDEE(S): Bill Baldwin, Barbara Beck, Michael Brown, John Festa, David Fowlie, John Horton, Anne Kimball, Mel Pine, Pat Quinn, John Taylor (see attached list for affiliations and contact information)**

**SUMMARY OF MEETING:** Michael Brown, Brown and Freeson, a representative for the manufacturers of the chemical CCA (Osrose, Arch, and CSI) requested a meeting with the CPSC technical staff. The purpose of the meeting was for them to make a presentation to the CPSC staff on protocols for their planned research studies on CCA. This presentation was made by Barbara Beck, Gradient Corporation. The meeting was opened by Patricia Bittner, CPSC.

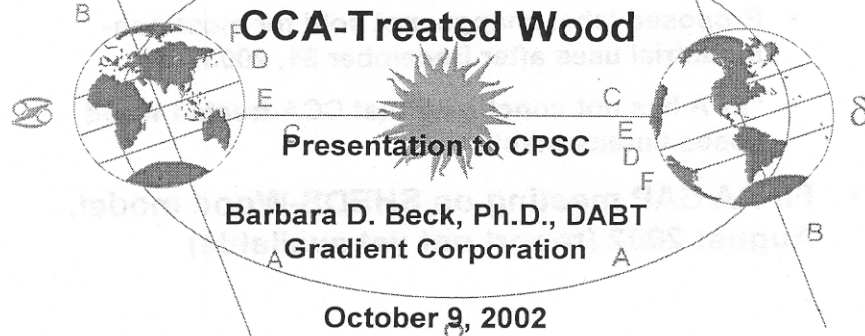
Barbara Beck, Gradient Corporation, presented information on the chronology of previous CCA human health risk assessments (HHRA). She presented Gradient Corporation's estimated cancer and non-cancer risks and the results of their sensitivity analyses. She also identified data gaps in the current HHRA that they performed and discussed several studies that will be conducted to address them. These studies include a hand and wipe study for dermal transfer coefficient; a soil bioavailability study; and a dislodgeable arsenic residue bioavailability study. A timeline for the completion of the hand and wipe studies was also presented; results are expected in June, 2003.

Copies of the slides used in the presentation are attached.

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## Research Activities to Refine Human Health Risk Assessment for CCA-Treated Wood



October 9, 2002

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## Chronology

- Agency risk assessments, including CADHS, 1987; CPSC, 1990; MEDHS, 1998; FLDEP, 2001 (Roberts & Ochoa)
- Gradient risk assessment, October 2001
- FIFRA SAP report on CCA-treated wood, December 2001

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## **Chronology (cont.)**

- **Voluntary request to amend labels, February 2002**
  - Proposed label change, not sold for most non-industrial uses after December 31, 2003
  - “EPA has not concluded that CCA-treated wood poses unreasonable risks”
- **FIFRA SAP meeting on SHEDS-Wood model, August 2002 (report not yet available)**

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## **Key Elements of Comprehensive Human Health Risk Assessment** (Gradient, 2001)

- **Residential and playground scenarios**
- **Subchronic (ages 2-6; 7-12) and chronic (ages 2-31) exposures**
- **Exposure routes included incidental ingestion, dermal contact, and inhalation**

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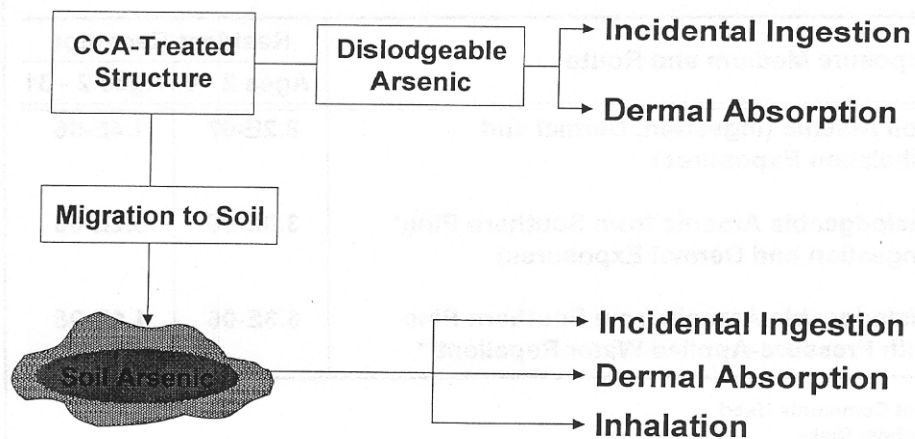
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## Key Elements of Comprehensive Human Health Risk Assessment (Gradient, 2001) (cont.)

- Risk estimates based on central tendency exposure (CTE) and reasonable maximum exposure (RME)
- Assessment of arsenic toxicity, including endocrine disruption and children's risk
- Sensitivity analysis to identify key sources of uncertainty in exposure assessment

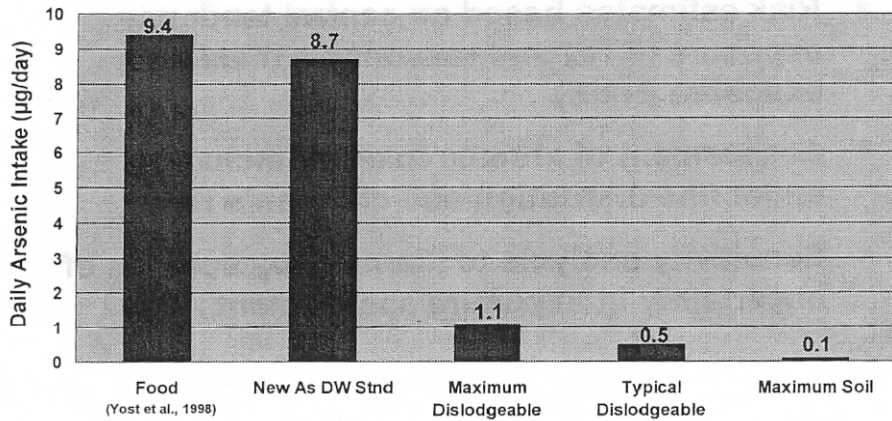
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## Exposure Pathways and Media



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## Comparison of Inorganic Arsenic Intakes for RME Child Resident Ages 2-6



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## Summary of RME Estimated Cancer Risks

Exposure Medium and Route	Resident Receptor	
	Ages 2 - 6	Ages 2 - 31
• Soil Arsenic (Ingestion, Dermal and Inhalation Exposures)	8.2E-07	1.4E-06
• Dislodgeable Arsenic from Southern Pine* (Ingestion and Dermal Exposures)	3.0E-06	5.2E-06
• Dislodgeable Arsenic from Southern Pine with Pressure-Applied Water Repellent**	6.3E-06	1.1E-05

\*Most Commonly Used

\*\*Highest Risks

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## Summary of RME Estimated Non-Cancer Risks

Exposure Medium and Route	Resident Receptor	
	Ages 2 - 6	Ages 2 - 31
• Soil Arsenic (Ingestion, Dermal and Inhalation Exposures)	4.9E-04	6.2E-03
• Dislodgeable Arsenic from Southern Pine* (Ingestion and Dermal Exposures)	1.9E-03	2.7E-02
• Dislodgeable Arsenic from Southern Pine with Pressure-Applied Water Repellent**	3.9E-03	5.8E-02

\*Most Commonly Used  
 \*\*Highest Risks

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## Sensitivity Analysis – Key Points

- Hand transfer efficiency (HTE) factor and exposure frequency have the greatest potential impact on exposure and risk
- Values used for these parameters in the HHRA not substantially less than alternative high-end values

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## Key Data Needs Identified in HHRA

- Dislodgeable arsenic from different locations in U.S. (hand loading & wipe data)
- More precise data on reduction in amount of dislodgeable arsenic over time
- Bioavailability studies of dislodgeable arsenic
- Biomonitoring studies (urine arsenic levels) in playground children

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## Key Data Gaps and Proposed Studies Identified by the FIFRA SAP (December 2001)

SAP Recommendation/ Data Gap	Proposed Studies		
	Hand & Wipe Study	Soil Bioavail. Study	Dislodgeable Bioavail. Study
Relative Bioavailability of As Complex in Soil		✓	
Relative Bioavailability of As Complex in Dislodgeable Residue			✓
Improved Exposure Parameters and Risk Assessment Methodology (i.e., PRA)	✓	✓	✓
Transfer of Dislodgeable Residue from Wood to Skin	✓		
EPC for Dislodgeable Metal Complexes in Soil & Wood	✓		

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## **Objectives of Proposed Studies/ Analyses**

### **Hand & Wipe Study**

- Compare amount of dislodgeable metal complex (represented by inorganic arsenic) removed from CCA-treated wood using wipes to amount removed *via* hand sampling to calculate a Transfer Reduction Factor (TRF)
- Estimate reduction in dislodgeable metal complex over time based on data from recently purchased and aged CCA-treated wood

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## **Objectives of Proposed Studies/ Analyses (cont.)**

### **Use of Hand & Wipe Study for Dermal Transfer Coefficient**

- Develop information from hand & wipe study to estimate maximum loading of dislodgeable metal complex on hands
- Extrapolate to total body exposure using ratio of dislodgeable residue on hands versus other body parts, as developed from Jazzercise and other studies

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## **Objectives of Proposed Studies/ Analyses (cont.)**

### **Soil Bioavailability Study**

- Using juvenile swine, determine the oral bioavailability of arsenic in soil affected by arsenic complex from CCA-treated wood, relative to the bioavailability of sodium arsenate

### **Dislodgeable Residue Bioavailability Study**

- Using juvenile swine, determine the oral bioavailability of dislodgeable arsenic complex (represented by inorganic arsenic) from CCA-treated wood, relative to the bioavailability of sodium arsenate

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## **Hand & Wipe Study**

- Modifications to protocol based on comments from CAEPA, CPSC, PMRA, and USEPA
- Pilot studies to confirm and refine protocol and enhance QA/QC procedures
- Expansion of pilot study to develop preliminary data for potential use in risk assessment
- Steering committee being formed to ensure regular communication

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## Good Laboratory Practice Standards

- GLP for hand & wipe study, including sample collection (except where not applicable)
- In “the spirit of GLP” for the bioavailability studies (not standard GLP studies)

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## Approximate Timeline for Hand & Wipe Study

Task	Start Date	Finish Date	Duration (weeks)	2002			2003							
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
Identify and ship pilot study wood; Prepare wood for sampling	10/14/02	11/15/02	5	■	■									
Conduct pilot studies; Prepare interim report	10/14/02	1/17/03	14	■	■	■								
Gradient revises protocol and obtains agency approval	1/20/03	3/14/03	8				■	■						
Recruit volunteers for full study	10/14/02	2/28/03	20	■	■	■	■							
Collect and analyze samples for full study	3/3/03	5/2/03	9						■	■				
Prepare final study report	3/3/03	6/13/03	15						■	■	■			

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