

QUARTERLY PROGRESS REPORT
October 1, 2003 to December 31, 2003

PROJECT TITLE: Extent of CCA-Treated Wood Used for Commercial Mulch

PRINCIPAL INVESTIGATOR: Dr. Helena Solo-Gabriele, Ph.D., P.E.

AFFILIATION: University of Miami, Dept. of Civil, Arch., and Environ. Engrg.

ASSOCIATE INVESTIGATOR: Dr. Timothy Townsend, Ph.D., P.E.

AFFILIATION: University of Florida, Dept. of Environ. Engrg. Sci., Solid & Haz. Wst. Prog.

COMPLETION DATE: October 31, 2003

“YEAR 6” Research

Title: Environmental Impacts of CCA-Treated Wood
(September 1, 2001 to May 31, 2003)

Project Administration

1. The final report for this project has been drafted. The title of the report is, “Arsenic and Chromium Speciation in Leachates from CCA-Treated Wood.” This report has been posted on the web and has been sent to the TAG. A paper copy has been sent to the Center. The deadline for comments on this report was extended to February 22, 2004 which is shortly after the date of our upcoming TAG meeting.

RCRA Sponsored Project

Title: Management and Disposal Options for CCA-Treated Wood Waste
(July 1, 2003 to June 30, 2003)

Project Administration

1. The final report for this project has been drafted. The title of the report is, “Management and Disposal Options for CCA-Treated Wood Waste.” This report will be revised shortly after the FICISS conference scheduled for February 2004.

“YEAR 7” Research

Title: Extent of CCA-Treated Wood Used for Commercial Mulch
(July 1, 2002 to June 30, 2004)

Project Administration

1. A subcontract in the amount of \$3,000 has been requested for U. Florida for Dr. Townsend’s contribution associated with the education program for the stains.
2. Letters were sent to TAG members concerning the upcoming TAG meeting. The letters included an agenda, FICISS conference brochures, maps/directions, and other relevant information concerning the meeting. An email message was also sent to TAG members as follow up to the letters.
3. The web site (www.ccaresearch.org) was updated to include information needed for the upcoming TAG meeting.
4. An email message advertising the TAG meeting and the FICISS conference was sent to several hundred individuals who have expressed interest in CCA treated wood research in the past.

Research Activities

1. Sample collection for this project has been completed with over 35 mulch samples collected from the South Florida area. All samples have been analyzed for particle size distribution and SPLP. All of the samples have been ashed and an initial visual identification was conducted on all samples. The plan is to “redo” the visual identification in a consistent manner as conducted for the “Year 8” mulch project. Besides the “redo” on the visual identification, the only pending laboratory work focuses on the digestion and analysis of the remaining ashed samples (about 15 samples).
2. To date laboratory results for 22 samples have been completed, 20 of these samples are mulch samples. One is a soil wood blend and one was composed of refuse derived fuel. Of the 20 mulch samples, 7 were non-colored and 13 were red colored. Of the 7 non-colored samples, only one contained CCA (approx 0.7% by weight). Of the 13 red colored samples, 6 contained CCA (between 3 and 12%). The arsenic concentrations of these red colored mulch samples ranged from 70 to 200 mg/kg. All of the red mulches that had CCA also contained plywood.
3. Questionnaires have been sent out to 100 cogeneration facilities and 300 wood processing/C&D facilities to inquire about sorting practices for wood waste. To date a total of 39 questionnaires (3 cogen and 36 C&D) have been returned
4. A total of 31 stain packages have been distributed to date. The plan is to bring additional stain packages to the upcoming FICISS conference for distribution.

“YEAR 8” Research

Title: Environmental Impacts of CCA Contaminated Mulch
(July 1, 2003 to October 31, 2004)

Research Activities

1. Mulch sample collection for phase I has been completed. An additional 57 samples have been collected (beyond the samples collected for the year 7 project). These samples have been collected from throughout Florida (Pensacola, Jacksonville, Gainesville, Tallahassee, Orlando, West Palm Beach and the Florida Keys). All samples have been visually characterized and have been analyzed for particle size distribution. Processing has begun for SPLP analysis of all the mulch samples. Six samples have been ashed to date.
2. A new larger muffle furnace was purchased for the project in an effort to process samples at a faster rate. This furnace has since been received, installed, and is currently in use. As a result of this new furnace the ashing time for each sample has been reduced from 12 days to 4.
3. A set of 6 mulch leachate collection vessels have been build for phase II of the project. The red colorant for phase II has been received and tested on wood chips. Samples of untreated and CCA-treated wood waste from a local wood waste recycling facility were collected on September 30, 2003. These samples were separated into CCA-treated and non-CCA treated piles using the PAN indicator stains. The samples have since been mulched, thoroughly mixed and samples have been analyzed for arsenic from each batch. The untreated wood pile measured at less than 1 mg/kg arsenic whereas the CCA-treated

pile measured at less than 2300 mg/kg. The testing method involved ashing the samples, digestion, followed by analysis using a flame AA. The next step is to add colorant to the wood chips and then place them in the mulch leachate-collection vessels.

Project Administration

1. The primary contract has been executed during this reporting period.
2. A subcontract for Dr. Townsend's portion of the work has been initiated.
3. Three UM students and one UF student have been assigned to this project. The UM students include Gary Jacobi who is responsible for ashing the samples, Laura Lugo who is responsible for describing the samples in terms of plywood content and size distribution, and Tomoyuki "Shiba" Shibata who is responsible for the mulch leaching studies. Brajesh Dubey is the UF conducts the analysis on the ash samples and is responsible for the SPLP results.
4. A pre-proposal was submitted to the FCSHWM on December 15, 2003. The title of the pre-proposal was, "Arsenic-Specific Stain for Identifying CCA-Treated Wood."

Information Dissemination

1. Timothy Townsend and Brajesh Dubey presented information focusing on CCA-treated wood at the FDEP Solid Waste Workshop in Clearwater, Florida on October 8 – 9, 2003. They also distributed stain packets at the meeting.
2. Timothy Townsend and Helena Solo-Gabriele provided Powerpoint presentations before the FDEP Rule Development Workshop held on November 18, 2003 in Orlando, Florida. Tim Townsend presented data focusing on leaching and impacts to groundwater from CCA-treated wood. Helena Solo-Gabriele provided a summary of methods for sorting CCA-treated wood from other wood types. Stain packets were also distributed at the meeting.
3. The web site, www.ccaresearch.org continues to be updated.

COURTESY REPORT For Complimentary Studies

Project Administration

1. Dr. Solo-Gabriele continues to work on the project funded by Florida International University (FIU) and the National Institutes of Environmental Health Sciences (NIEHS). The title of the project is, "Impacts of arsenic from CCA-treated wood within marine and terrestrial environments." The "sand boxes" have been completed and rainfall, runoff, and infiltration samples have been collected for a period of over a year.
2. Dr. Solo-Gabriele is currently collaborating with Dr. Stuart Shalat of Rutgers University and Dr. Lora Fleming of the University of Miami Medical School on an epidemiologic study evaluating the impacts of CCA-treated playgrounds on children. Sampling of playgrounds and children has been initiated. Three children have participated in the study to date.
3. Drs. Solo-Gabriele and Townsend have been assisting with the planning of a conference titled, "Environmental Impacts of Preservative-Treated Wood." This conference is scheduled for February 8-10, 2004. The conference will be sponsored by the Florida

Interdisciplinary Center for Environmentally Sound Solutions (FICCESS). Drs. Solo-Gabriele and Townsend continue to participate in conference calls and continue to correspond with the Technical Advisory Committee.

4. A proposal was submitted in collaboration with the Town of Medley to the FDEP Innovative Recycling Grants Program. The title of the proposal is, “Augmented Sorting of Recovered Wood Waste Using Stain and X-ray Technologies.”