

Pima County Beryllium Monitoring Network

Pima County Department
of
Environmental Quality
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Overview of Presentation

- Background regarding Brush Ceramics
- Background on monitoring project
- Monitoring network
- Evaluation of data
- Current status



Background Regarding Brush Ceramics

- Formerly known as Brush Wellman
- Tucson facility built specifically by Brush in 1980
- Brush uses beryllium (Be) in the manufacturing of ceramic products for use in electronics
- Brush has used Be since it started operations
- Brush is subject to federal air quality standards for Be at their stack



Background Regarding Brush Ceramics

- Brush has been permitted by Pima County since it began operations
- Initial permit issued in 1980 and renewed annually until 1994
- Changes in state law in 1994 created new permitting requirements for all facilities
- New draft permit goes to public comment in 1999



Background Regarding Brush Ceramics

- Extensive public comment and input received and permit re-drafted several times
- Permit issued November 2006
- Permit appealed by community groups because of air monitoring issues
- Community groups believe monitoring should be made a permit condition
- Permit upheld by Pima County Air Quality Board



Background on Air Monitoring Project

- Be air monitoring requested by community during permitting process
- Limited authority for Pima County to require ambient air monitoring
- Voluntary agreement reached between Pima County and Brush to conduct monitoring project
- Pima County to maintain and operate monitors while Brush contributes funding
- Pima County utilizing the services of Dr. Eric Betterton, Professor, University of Arizona, Department of Atmospheric Sciences



Background on Air Monitoring Project

- Advantages to voluntary agreement:
 - Pima County operates and maintains monitors (operational integrity)
 - Days and frequency of monitoring controlled by Pima County (flexibility)
 - Pima County has a better ability to access property to locate monitors
 - Open access to Pima County information (public records)
 - Pima County has a better ability to disseminate results



Monitoring Network

- Goal of project is to determine levels of Be in ambient air over a five year period (coincides with permit term)
- Results will support air permitting efforts
- Results will be shared with the public, air quality experts, health officials, SUSL, and elected officials



Monitoring Network

- Pima County network expands the existing network previously operated by SUSD
- Four existing SUSD sites will be expanded to include two new sites
- One site will be a co-location site for QA/QC purposes
- Existing Pima County monitoring site outside the Brush area will be used as background site






Monitoring Network

- Existing Sites
 - SUSD Transportation Building
 - Los Niños Elementary School
 - Los Amigos Elementary School
 - Ocotillo Elementary School (co-location)
- New Sites
 - Sunnyside High School
 - Chaparral Middle School
- Background Site
 - Santa Clara Elementary School



Brush Ceramics Facility & Monitoring Sites

-  Brush Ceramics Facility
-  Major Streets
-  Monitoring Locations

- 1 Transportation Department
- 2 Los Ninos Elementary School
- 3 Los Amigos Elementary School
- 4 Ocotillo Elementary School (co-locate)
- 5 Sunnyside High School
- 6 Chaparral Middle School
- BG Santa Clara

November 2006

Prepared By Pima County
Department of Environmental Quality

Comments
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Monitoring Network

- Sampling will be rotated through the network
- Each monitor will be on one in every six days
- Monitors are high volume particulate samplers with modified motors
- Monitors meet EPA requirements for sampling
- Monitor operates by timer and operates 24 hours straight
- Air is vacuumed into the unit at a specified flow rate through a size selective inlet



Monitoring Network

- Particulate matter is collected on a filter which is gathered each day
- Filter is weighed before and after the sample run
- Filters are shipped to an independent laboratory for analysis every 30 days
- Laboratory analyzes only $\frac{1}{2}$ the filter, with the other $\frac{1}{2}$ being retained by PDEQ as a back up
- Laboratory results are sent to PDEQ and checked then reported on our website







Evaluation of Data

- Currently there is no standard for Be in the ambient air
- Be occurs naturally in soils and will be detected
- PDEQ will be sharing the data with Dr. Betterton, PC Health Department, EPA, and the Sonora Environmental Research Institute (SERI) to assist in evaluating the data
- Evaluation will be focused on trend analysis



Evaluation of Data

- Dr. Betterton and staff from SERI recommend using a modified Be laboratory method
- Modified method uses a stronger acid in the analytical method which increases the detection of Be in the sample
- Modified method is expected to produce different results from the method used by SUSD
- The degree they may differ is unknown though not expected to be dramatic



Evaluation of Data

- Data will be made available to the public on PDEQ's website as soon as it is checked
- Reports and discussion of the data will also be developed and shared with the public including PDEQ's website



Current Status

- Monitors have all been installed and calibrated
- SUSD staff are assisting in the project by collecting filters
- SUSD staff have all been trained by PDEQ staff
- Monitoring began July 11, 2007
- 89 valid samples were collected with 7 samples being rejected due to equipment failure and operational error
- Sample recovery rate is 92.7% which exceeds EPA's requirement of 75%



Current Status

- Data not accepted due to:
 - Power outages during monsoon storms (4 samples)
 - Operator error such as hood not being closed properly or filters being damaged (3 samples)
- Filters currently being stored
- Laboratory selection process has been completed



Current Status

- Schneider Laboratories Inc will be performing the analyses
- Samples to be shipped in approximately 10 days
- Results for the first 86 samples to be expected in 3 to 4 weeks
- Results will be posted on PDEQ's Website
<http://www.deq.pima.gov>



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