

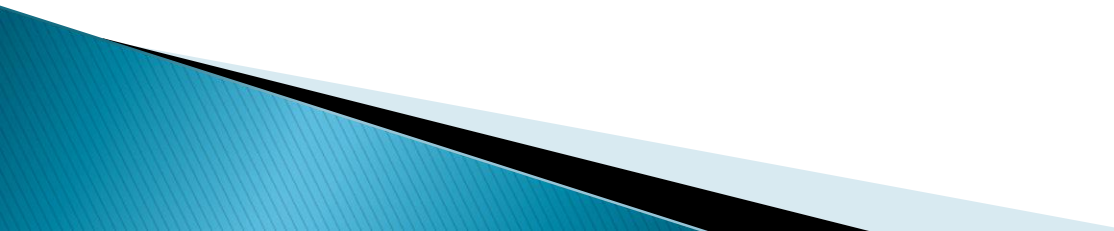
Environmental Justice Communities Exposed to Air Pollution

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Environmental Justice Fence Line Communities

- ❖ Fence line EJ communities adjacent to chemical plants, petroleum refineries, paper mills, coal mines and terminals, oil and gas drilling, production and processing facilities, LNG import and export facilities, waste management operations and many more industrial and processing facilities are frequently the recipients of toxic air emissions that impact their health and quality of life.
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Toxic Air Emission Sources

- ❖ The air emission events that impact EJ communities are associated with normal facility operations, as well as accidental releases, upset conditions and start up and shut down activities.
- ❖ Multiple toxic chemicals are released into the air on an ongoing basis during normal facility operations. These chemicals cross the fence line and result in chronic long term exposure.
- ❖ During accidental releases, upset conditions and start up and shut down activities, chemicals are released, cross the fence line and result in acute exposure, which occurs on top of the chronic exposure conditions.

Chemicals in the Ambient Air of EJ Communities

- ❖ Air samples collected by agencies and on behalf of EJ communities demonstrate chemicals released by facilities on an ongoing basis and chemicals released during accidental releases and upset conditions have crossed the facilities' fence lines and impacted the people in the residential areas and children in schools in the fence line communities.
- ❖ A community surrounded by petroleum refineries, petrochemical plants and marine loading facilities experienced accidental releases, upset conditions and maintenance conditions resulting in releases of excess emissions into the air on two thirds of the days. Frequently multiple events occurred on a single day, which released a large number of chemicals from the multiple releases.
- ❖ When the EPA monitored the air quality in the community using the Trace Atmospheric Gas Analyses (TAGA) unit, the EPA confirmed the presence of the chemicals in the community and the hot spots in the community correlated with the locations where the community had reported odor events. In addition, air samples collected on behalf of the community also confirmed the chemicals in the ambient air in the community.

Environmental Justice Communities Adjacent to Cancer Alley Facilities in Louisiana

- ❖ The chemical in the ambient air in the EJ communities adjacent to industrial facilities along Cancer Alley have been correlated to citizens complaints and health impacts experienced by EJ community members. Some of the EJ communities experience health impacts from emissions associated with accidental releases and upset conditions as frequently as once every three days.
- ❖ The data on chemicals in the ambient air correlate with regulatory agency ambient air monitoring results, accidental release reports, TRI data, EPA TAGA monitoring and community sampling and data from regulatory agency ambient air monitoring demonstrates chemicals and concentrations of chemicals in the ambient air in the EJ communities and correlate with the health impacts experienced by the communities.

Mercury Emissions from Mercury Cell Chlor-Alkali Units

- ❖ Emissions of Mercury off site from facilities with Mercury Cell Chlor-Alkali Units at facilities along Cancer Alley and Calcasieu Parish Louisiana as well as units in other states were confirmed by ambient air monitoring performed on behalf of the communities. The Mercury emissions were also verified by monitoring performed by the EPA TAGA unit. The data was helpful in speeding up the phasing out of the Mercury Cell Chlor-Alkali Units.
- ❖ The Mercury contamination in the environment as a result of industrial uses of Mercury from the industrial facilities has resulted in bioaccumulation in flora and fauna and serve as completed human pathways of exposure that continues even after the Chlor-Alkali Units were no longer in operation.

Mossville, Calcasieu Parish Louisiana

- ❖ The EJ community of Mossville is surrounded by 14 industrial facilities consisting of petrochemical facilities, petroleum refineries, a coal fired power plant, and vinyl chloride manufacturing facilities. In a health survey of the community it was determined that 32 chemicals released by the 14 industrial facilities were associated with the medical conditions being reported by the community. This indicated the cumulative impacts of exposure to multiple chemicals must be considered by the regulatory agencies in dealing with the permitting, operations and emissions from the industrial facilities.

Dioxin in the Blood of EJ Communities

- ❖ Historical and continuing ongoing exposures to dioxin emissions have resulted in blood dioxin levels in EJ communities living around vinyl chloride manufacturing facilities, wood treating facilities that use Pentachlorophenol, and military bases that handled and stored agent orange. The blood dioxin levels in the EJ communities have been demonstrated to range from 3.0 times to as high as 11.3 times the national control group average in EJ communities around the Dioxin releasing facilities.
- ❖ Dioxin was also found in the attic dust of individuals whose blood was tested. The attic dust Dioxin concentrations ranged from 23.5 to as high as 174 times EPA residential soil standard.
- ❖ There is a desperate need to reduce Dioxin emissions and require monitoring blood dioxin levels in EJ community members prior to construction and operation of new vinyl chloride facilities as well as during the operational life of vinyl chloride facilities and wood treating facilities that utilize pentachlorophenol.

Inspections in Response to Community Complaints

- ❖ Agencies are frequently very slow in responding to odor complaints filed by EJ community members. When inspectors do conduct inspections in response to EJ community complaints, they indicate the lack of odors at the time of their inspection. In some cases interacting with the agency has finally resulted in the inspectors requesting of the facility they are inspecting facility activities that were going on at the time the odor complaint was submitted.

Minimization of EJ Communities in Areas of Proposed New Facilities

- ❖ When operators of new facilities apply for air permits, some operators minimize the EJ populations in the area of the proposed facility and lack consideration of the exposure to toxic chemicals that will potentially occur.
- ❖ The regulatory agencies should verify the EJ information submitted and consider the potential exposure to the EJ communities as a result of issuing air permits to industrial facilities as well as waste processing and disposal facilities.
- ❖ Frequently the regulatory process does little to protect the EJ communities and allows and enables the communities to be exposed to toxic chemicals released by facilities in their neighborhoods.

Ambient Air Monitoring Programs

- ❖ One of the most beneficial ambient air program in EJ communities was the program established in the Rubbertown Area of Louisville, KY.
- ❖ Air monitoring was performed every 12 days at a number of locations around the industrial area which had residential neighborhoods mixed in with the industrial facilities. The data was used to identify the chemicals released in concentrations in excess of air standards and the industrial facilities that released the toxic chemicals. The STAR program was established to reduce the emissions of the most toxic substances.
- ❖ The work of the community organization REACT and my technical assistance to the community were cited by EPA as a model to engage the community, and the importance of the community involvement in accomplishing emission reductions.

Ambient Air Monitoring

- ❖ On the national level ambient air monitoring programs collect data once every six days. The program collects ambient information on the same date around the country. The industry knows when the six day collection is occurring. The industry avoids performing dirty tasks on the sixth day.
- ❖ When the TAGA unit is monitoring in an industrial area, the industrial facilities know the unit is in action in their area. It is amazing how few accidental releases and upset conditions occur and are reported during the period when the TAGA unit is active.
- ❖ From a different perspective, on the sixth day of ambient air monitoring and the days the TAGA unit is in action, the toxic chemicals in the air represent the best case operating conditions. That said, the chemicals in the ambient air detected by ambient monitoring, demonstrates that EJ communities are being exposed to a host of toxic chemicals and in some cases above acceptable standards during these monitoring periods.

Shale Play Development

- ❖ The new Shale play industrial development is centered around 41 Shale Plays and Hydraulic Fracturing in the United States. Air emissions of methane and a very large number of toxic chemicals used in the fracking process and in the processing of the crude oil and natural gas have had severe impacts on the health and quality of life for communities living in close proximity to well pads, compressor stations, separators, gathering facilities, storage facilities and other units.
- ❖ Recent EPA regulations have given the air regulatory agencies authority over shale development. In some cases there are conflicts between the environmental agencies and oil and gas agencies who have historically had total control of oil and gas development.
- ❖ The toxic chemicals being released as a result of Shale development have impacted an entirely new population of community members across the United States. These communities near the multitude of facilities and units spread through the shale development area need the air agencies to appropriately regulate the air emissions from all of the infrastructure associated with Shale development.

State Review of Oil and Natural Gas Environmental Regulations (STRONGER)

- ❖ In 2014, STRONGER developed Air Guidelines to assist and measure state regulatory authorities' implementation of the EPA final rules for oil and natural gas sector.
- ❖ On August 16, 2012, EPA published 3 final rules for the Oil and Natural Gas Sector – NSRS OOOO for the control of VOC and SO₂ emissions and NESHAP HH/HHH for the control of hazardous air pollutant emissions.
- ❖ I chaired the STRONGER Air Guidelines work group. The Guidelines were finalized in 2014 and a review of the Pennsylvania Department of Environmental Protection air program based on the Stronger Air Guidelines was performed in mid July 2015.
- ❖ The report of the review is in progress.

Consider the Environmental Justice Communities on the Fence Lines

- ❖ The environmental air agencies should consider EJ communities when the agencies are reviewing permit applications for new or modified facilities.
 - ❖ The agencies should also consider the EJ communities when performing facility inspections and responding to complaints.
 - ❖ Please look beyond the fence lines to the EJ communities living in close proximity to industrial facilities. Most of the EJ communities were living there before the industrial facilities were constructed.
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