

Science Background Research: Maquiladoras Case Study

Task 1: *Stop and Jot*

Environmental Justice Case Study: Maquiladora Workers and Border Issues

**Adapted from text by Elyse Bolterstein, from the University of Michigan Environmental Justice Case Studies*

<http://umich.edu/~snre492/Jones/maquiladora.htm>

Working Conditions

The 948,658 Mexicans that work in the maquiladoras must endure a terrible working environment that includes inadequate training, exposure to many potentially hazardous materials, and inadequate information and protective equipment (Sawicki, 98). In a recent survey by the Comité de Apoyo Fronterizo Obrero Regional, 177 workers from 77 maquiladoras in Tijuana and Tecate, Mexico described their work experiences.

- One-fifth of the workers surveyed reported illnesses believed to be caused by working conditions.
- 53% of the workers interviewed claimed not to have received any written information from their employers that explained the hazards of some of the materials used on the job.

Stop and Jot 1: *Nearly a million Mexicans work in maquiladoras along the border. The author writes about the “terrible working environment.” What makes the working environment terrible?*

Environment

Hazardous conditions within the maquiladoras are just the beginning of the problem. The presence of the maquiladoras combined with loosely enforced Mexican environmental laws and a lack of suitable waste storage and treatment facilities, cause the border area to be among the most polluted in Mexico. Even in the event that one of the factories is shut down for environmental reasons, that does not necessarily mean an end to the factory’s pollution to the surrounding community. Metales y Derivados, a lead-smelting facility in Tijuana, was shut down in 1994 when its owners failed to comply with toxic waste disposal laws. However, the waste was never properly treated and/or relocated and is currently leaking through its containers, seeping into the ground, and contaminating community’s water supply (Global Exchange, 2000).

Stop and Jot 2.1: *The former lead-smelting facility Metales y Derivados was shut down 25 years ago. What has happened to the waste from that facility?*

Stop and Jot 2.2: *What connections can you make between the waste from Metales y Derivados and what you've learned in past science units. (Hint: Think back to what you learned about pollution in the Savin Hill Cove expedition and what you learned about mining waste in the Life Cycle of a Computer expedition.)*

Air pollution is a great concern along the border. Border residents are exposed daily to extremely high air-pollutant levels including high levels of carbon monoxide. Deteriorating water quality is another concern along the border. There is a considerable amount of pollution that is dumped into the Rio Grande, poisoning wildlife and communities all along the river and causing a much greater Hepatitis A risk (Public Citizen, 1998b).

Stop and Jot 3.1: *What is the air pollutant being released as many Maquiladora facilities?*

Stop and Jot 3.2: *The author writes about how pollution dumped in one part of the Rio Grande can poison wildlife all along the river. What connections can you make to what you learned in science about **biodiversity** and the **interconnectedness** of organisms in an ecosystem?*

Task 2: Lead and the Human Body

One of the most **infamous** maquiladoras (infamous = famous for a bad reason) is Metales y Derivados, which was a facility that released a toxic element called Lead.

Study the image from Tech Insider provided in [this article](#), “Here’s how lead is poisoning American Children” by Julia Calderone and Skye Gould in Business Insider, and in the boxes below summarize **four** ways that lead poisoning can impact the human body:

Task 3: Deepening Your Understanding of the Human Body

*In the notes on the previous page you provided examples of ways that lead poisoning can impact different **body systems**. In order to fully understand how lead impacts how our bodies, it is helpful to know how different body systems are supposed to work normally.*

*On Google Classroom you should see two videos posted from the Scholastic Study Jams collection, one about the **Nervous System** and one about the **Circulatory System**. Choose one video to watch to build your background knowledge about how the human body works.*

Name of Body System: _____

Film Notes:

Connecting Back to Lead Poisoning:

Looking back at the image on page 3, how does lead change how this body system functions?