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Risk Assessment of Unity Auto Mart

Ashley Wilson

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Risk Assessment of the Unity Auto Mart Site

By Ashley Wilson BICL 384-30



Aim

The aim of this project was to create a risk assessment and perspective on the risk management of the Unity Auto Mart Site.

Background

- Located in Unity Wisconsin in a mixed commercial and rural residential area.
- It is estimated to span around 25 acres.
- The site was used as a gas station from the early 1960 until 2012.
- From 1979 to 1984 a dry-cleaning business was added and operated on the site.
- Tetrachloroethene was used as a dry-cleaning chemical

Conclusions

Those being impacted are those that live within the contamination plume and use one of 17 potable wells that were found to have elevated levels of tetrachloroethene. Those exposed should be provided with filters or access to public water that is above the water quality minimum recommendations. The previous owners of the business should be held accountable and should be required to help clean up the water supply. This product should be banned in order to protect workers and prevent water contamination.

Methods

Identifying the hazards associated with the chemicals found on the site



Creating a dose-response assessment for the chemicals identified



Determining who is exposed and describing the surrounding community or targeted population



Assessing the risks for exposure and how exposure to these chemical could impact people's health



An assessment of risk management and what should be done to manage the risks the site proposes to the surrounding population or targeted population.

References

U.S. Environmental Protection Agency. (2011). Tetrachloroethene. Retrieved from <https://www.epa.gov/chemical-safety/factsheet-tetrachloroethene>

U.S. Environmental Protection Agency. (2011). Tetrachloroethene. Retrieved from <https://www.epa.gov/chemical-safety/factsheet-tetrachloroethene>

U.S. Environmental Protection Agency. (2011). Tetrachloroethene. Retrieved from <https://www.epa.gov/chemical-safety/factsheet-tetrachloroethene>

Results

- Numerous private potable wells surrounding the location were found to contain levels of tetrachloroethene that exceeded water quality standards
- Tetrachloroethene is a likely carcinogen to humans



- When consumed orally doses between 4.5 and 6 g of tetrachloroethene have been found to cause vertigo, inebriation, giddiness, nausea, sleepiness as well as loss of consciousness.
- Prolonged ingestion has also been found to cause anaphylactic reactions in children
- Unity Wisconsin is predominately white at 85.4%
- The median income is 43,194 and 17.6% of Unity families live in poverty.
- The median age of Unity is 44.1 years old.