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MEMORANDUM

TO: Dan Ziarkowski, Chief
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FROM: William S. Bosan, Ph.D.
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DATE: May 17, 2005

SUBJECT: Review of the Ambient Air Monitoring Program Results for Vinyl Chloride,
BKK Landfill, West Covina, California.

Document Reviewed

The Human and Ecological Risk Division (HERD) has reviewed the most recent (as of April 7, 2005) ambient air data for vinyl chloride measured at the closest residential areas adjacent to the BKK Landfill.

Background

On December 21, 2004, BKK issued letters to three residents in the Nogales End area notifying them that the average 24-hour ambient air concentration of vinyl chloride over the preceding 12 months exceeded 0.05 parts-per-billion (ppb). DTSC directed its on-site contractor to identify the causes of the release and to take action to reduce levels of vinyl chloride at the perimeter of the facility (Nogales End). On March 21, 2005, BKK issued additional letters to 3 residential property owners on Mariena Street, 3 property owners on Myra Court and 2 property owners on Nogales Street with the same notification. Ambient air results from the Miranda Fence Station, near the City of

Walnut, showed much lower vinyl chloride concentrations than reported for the Nogales End.

Scope of Review

The ambient air data for vinyl chloride were reviewed and evaluated in terms of potential human health risks, especially for the residents of the Nogales End.

Comments

Based on the ambient air data collected from January 2004 through April 7, 2005, the 24-hour average vinyl chloride concentration in ambient air at the Nogales End was approximately 0.07 ppb. Based on the results obtained to date, the levels of vinyl chloride measured at the Nogales End do not pose an immediate threat to the health of residents in that area. The Proposition 65 Action Level of 0.05 ppb vinyl chloride corresponds to a probability of one person in one hundred thousand people (1E-05) developing cancer when exposed for a lifetime of 70 years. This level of risk would be considered negligible given the health protective lifetime exposure assumption. Although the 24-hour average concentration of vinyl chloride (0.07) from January 2004 through April 7, 2005 slightly exceeded the 0.05 ppb Action Level, there would be no real increase in risk for the residents living near the Nogales End Station, i.e., the lifetime risk of cancer would still be 1E-05.

The estimated cancer risk from exposure to vinyl chloride is health protective in that it assumes that residents are exposed to the annual 24-hour average concentration measured at the Nogales End Station for a period of 70 years. In reality, the exposure point concentrations indoors would be less than the fence line levels measured, since the nearest residents are actually downwind of the Nogales End Monitoring Station. The vinyl chloride concentrations in ambient air decrease substantially with distance from the facility. For example, the 24-hour average concentration of vinyl chloride measured at Amar and Nogales was 0.02 ppb. An estimated 1E-05 risk further assumes that an individual will be exposed continuously, 24-hours per day, 7-days per week for a lifetime of 70 years. Using more reasonable exposure assumptions, the estimated cancer risk would be one order of magnitude lower.

The following monitoring stations are part of the ongoing BKK Ambient Air Monitoring Program:

- Monitoring Station 1, Microwave Tower
- Monitoring Station 2, Azusa Spillway
- Monitoring Station 3, Nogales End
- Monitoring Station 6, Lynn Court

- Monitoring Station 7, Walnut Village
- Monitoring Station 8, Miranda Fence
- Monitoring Station 9, Melissa at Marcella
- Monitoring Station 10, Marlena
- Monitoring Station 11, Amar at Nogales
- Monitoring Station 12, Lorraine Cul de Sac

Only the Nogales End station had an average 24-hour vinyl chloride concentration exceeding the 0.05 ppb vinyl chloride action level. All other monitoring stations had average 24-hour vinyl chloride concentrations well below the 0.05 ppb action level and associated lifetime cancer risks well below the level of concern. Based on historical monitoring records from 2000 up to the present, the majority of results for Monitoring Stations 1, 2, 6, 7, 9, 10, 11 and 12 have been reported as “not detected.” From January 2004 through April 7, 2005, approximately one-half of the results reported for the Miranda Fence Monitoring Station were “not detected.” The average 24-hour ambient air concentration of vinyl chloride for Miranda Fence (0.01 ppb) between January 2004 and April 7, 2005 was well below the 0.05 ppb action level and represents an estimated lifetime cancer risk well below the level of concern.

Although there is no increased risk of cancer for the residents near the Nogales End Station at this time, the ambient air data show that, on occasion, the vinyl chloride concentrations have exceeded the 0.05 ppb Action Level over the last one and one-half years. Consequently, continued monitoring is recommended to ensure that the health of residents is not endangered by vinyl chloride emissions from BKK. Because vinyl chloride is a known human carcinogen, the long-term goal should be “non-detect” in ambient air.

Conclusions

Based on the results obtained to date, the levels of vinyl chloride measured at the Nogales End do not pose an immediate threat to the health of residents in that area. Although the 24-hour average concentration of vinyl chloride (0.07) slightly exceeded the 0.05 ppb Action Level, there would be no real, long-term increase in risk for the residents near the Nogales End, i.e., the lifetime risk of cancer would still be 1E-05. Because the levels of vinyl chloride have occasionally exceeded the 0.05 ppb Action Level during the last one and one-half years of monitoring, continued monitoring of ambient air is recommended, with the long-term goal of achieving no detections in ambient air. If you have any questions or comments, please contact me at (818) 551-2839 or bbosan@dtsc.ca.gov.

Reviewed by: Stephen DiZio, Ph.D.
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