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DIVISION OF SAFETY AND HYGIENE
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Richard F. Conest, Governor
246 N. High St., Col. O 43215
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January 26, 1988

Legal Section
Industrial Commission of Ohio
246 North High Street
Columbus, Ohio 43215
Attention: Judy Spencer

RE: OD28445-22
Calvin Edler
BOC Lordstown Assembly
~~General Motors Corp.~~
P.O. Box 1406
Warren, Ohio 44482

Dear Ms. Spencer:

On October 16, 1987 a visit was made to the BOC General Motors Assembly Plant in Lordstown, Ohio in an effort to gather industrial hygiene information relative to the above cited occupational disease claim. It was noticed that the claimants name was misspelled in the claim file. The claimant and the company spell his name Edler not Elder.

The claimant alleges that his medically diagnosed condition of sore throat, vomiting, dizziness, headaches and loss of appetite was caused by exposure to fumes from automotive carpets, gasoline, transmission fluid and windshield washer fluid.

The claimant's work history with General Motors was provided by the company and is detailed in Table 1. The relevant period seems to be from March 12, 1986 to July 1, 1986. On March 12 the claimant was transferred to a job as assembler on the chassis final line of the passenger plant. Within one month he was complaining of a sore throat. By July 1, 1986 when he took sick leave, the claimant was complaining of sore throat, vomiting, dizziness, headaches and loss of appetite. His job consisted of climbing into the back seat of each car and securing the front seat to the body.

There was concern that residual vapors from the 1,1,1-trichloroethane solvent used in the manufacture of the automotive carpet was being released. Other components of the carpet should not be volatile according to the material safety data sheets in the facsimile file. The carpets are shipped to the Lordstown plant and placed into the cars approximately three to four hours before the claimant worked on those cars. All four samples obtained by the company for 1,1,1-trichloroethane on March 24, 1987 showed "none detected" in the air. Of course, one day's sampling does not mean that the airborne concentration is that low every day. The symptoms of exposure to 1,1,1-trichloroethane are primarily that of anesthesia.¹ Exposure of animals at high concentrations for a long period of time has caused some liver and lung changes.¹ Extensive testing and human experience indicate that 1,1,1-trichloroethane is probably the least toxic of the chlorinated solvents.²

The claimant alleged that the carpets were releasing formaldehyde vapors also. According to the carpet manufacturer, J.P. Stevens & Co., Inc., no formaldehyde or formaldehyde products were used in their automotive carpet.

After the cars left Mr. Edler's work area, a small amount of gasoline and windshield washer fluid was added to the cars. The transmission was filled with transmission fluid. A one foot deep and one foot wide drain covered with a metal grating ran the length of this area. A constant stream of water moved through the drain to wash away any spills. This fluid filling area was approximately 50 feet from the claimant's work area. The drain sloped away from the area where the claimant worked so that any spills were carried away from him.

The company took two air samples on two occasions to quantify the concentration of gasoline in air at the filling area. On April 24, 1986 the results were none detected and 63 parts of gasoline per million parts of air (ppm). On June 24, 1986 both samples revealed a concentration of none detected. These samples were all taken during the claimant's tenure installing seats. During the investigation, the employee filling gasoline tanks was asked how often spills occur. During her two years at that work station she could recall only two sizable gasoline spills. No fluids were observed on the floor during the investigation.

Gasoline acts generally as an anesthetic and mucous membrane irritant. Inhalation is the most important route of occupational entry. The most common symptoms of excessive gasoline vapors are headaches, blurred vision, dizziness, and nausea.³ "Reported responses to gasoline vapors are: 160-270 ppm causes eye and throat irritation in several hours; 500-900 ppm causes eye, nose and throat irritation, and dizziness in one hour; and 2000 ppm produces mild anesthesia in 30 minutes."³ Inhalation during bulk handling⁴ of gasoline has not produced any measurable physiological effects.

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The company has not sampled the air for transmission fluid. In general, lubricating oils have a low order of toxicity although it is conceivable certain additives may have a greater toxicity than the oil. The skin is usually the target organ of lubricating oils and additives. Since the volatility of these additives is usually low and they are not sprayed into the air, the airborne concentration is probably low.

The windshield washer fluid is a mixture of 60% water and 40% methanol. The claimant was exposed to unknown concentrations of methanol. Chronic poisoning from exposure to methanol vapor may cause conjunctivitis, headache, giddiness, insomnia, gastric disturbances and failure of vision. According to the National Institute for Occupational Safety and Health the signs and symptoms most characteristic of methanol poisoning are visual disturbances and metabolic acidosis.

Sincerely,



Gary Swinehart
Industrial Hygienist

Table 1. Work history for Calvin Edler at Lordstown Assembly.

<u>Date</u>	<u>Plant</u>	<u>Area</u>	<u>Job</u>
9/18/84	Van plant	chassis	assembler
9/19/84	Van plant	body shop	spotwelder
10/05/84	Laid off		
5/02/85	Van plant	chassis	assembler
9/18/85	Car plant	body shop	spotwelder
1/08/86	Laid off		
1/27/86	Car plant	chassis, final line	assembler
2/17/86	Car plant	body shop	spotwelder
3/12/86	Car plant	chassis, final line	assembler
7/01/86	Sick leave		
7/28/86	Rehired		
9/25/86	Laid off		
5/26/87	Rehired		
6/08/87	Van plant	body shop	assembler
6/09/87	Change of classification		replacement operator
8/24/87	Entry to job bank		

References

1. Documentation of the Threshold Limit Values, American Conference of Governmental Industrial Hygienists, p. 382, 1986.
2. Torkelson, T.R. and V.K. Rowe, "Halogenated Aliphatic Hydrocarbons", in Patty's Industrial Hygiene and Toxicology, 3rd Edition, Eds. G. Clayton and F. Clayton, Vol. 2B, John Wiley & Sons, New York, p. 3503, 1981.
3. Documentation of the Threshold Limit Values, American Conference of Governmental Industrial Hygienists, p. 283, 1986.
4. Sandmeyer, E.E., "Aromatic Hydrocarbons", in Patty's Industrial Hygiene and Toxicology, 3rd Edition, Eds. G. Clayton and F. Clayton, Vol. 2B, John Wiley & Sons, New York, p. 3385, 1981.
5. Eckardt, R.E., "Petroleum and Petroleum Products," Encyclopaedia of Occupational Health and Safety, International Labor Office, Geneva, p. 1652, 1983.
6. Documentation of the Threshold Limit Values, American Conference of Governmental Industrial Hygienists, p. 372, 1986.

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