

Division of Environmental and Occupational Health School of Public Health Box 197 Mayo 420 Delaware Street S.E. Minneapolis, Minnesota 55455

April 6, 1989

Larry R. Zobel, M.D. Staff Physician 3M Center Medical Department 220-2E-02 St. Paul, MN 55144-1000

Dear Larry;

Enclosed please find the tables containing the results of the comparison with the Minnesota population. As I mentioned on the telephone, these must be interpreted cautiously because of the uncertainty regarding the Minnesota rates prior to 1959. Deaths among the study cohort occurred in 41 states; therefore, the U.S. rates may be more appropriate.

As you will see from the tables, the results are similar to those presented previously which used the U.S. rates. The only consistent finding between the two comparisons is for prostatic cancer which we addressed in our initial report. For cancer of the digestive organs and peritoneum there was a statistically significant excess (SMR=176, 95% C.L.=1.09, 2.69) for the entire cohort. However, this was not found among the Clinical Division employees. Furthermore, no single site within the gastrointestinal tract was elevated suggesting that this was probably due to chance. Also worth noting is the fact that these are not sites typically associated with chemical exposures.

If you have any questions please feel free to call me at 626-4810.

Yours sincerely.

Jack S. Mandel, Ph.D. Associate Professor

HEALTH SCIENCES

State of Minnesota v. 3M Co., Court File No. 27-CV-10-28862

Exhibit

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201HODGKIN'S DISEASE (1940-,1945-APPROXIMATE)	200LYHPHOSARCOHA AND RETICULOSARCOHA (1950-1969 ONLY)) 193CANCER OF THYROID (1950-1969 ONLY)	191ANCER OF BRAIN AND OTHER CENTRAL HERVOUS SYSTEM (1925-APPROXINATE)	190CANCER OF EYE (1950-1969 OHLY)	KIDIÆY	1997 INSER OF ETRUCK (1997 - INSERT OF ETRUCKINALE)		ב ב ב	DEDICTATE	1720 NEED OF SKILL	130CALL CARCER OF			TENCHINED OF		155ALL CANCER OF LIVER (1925-APPROXIMATE)) 153CANCER OF LARGE INTESTINE (1925-APPROXIMATE)	151CANCER OF STOMACH	150CANCER OF ESOPHAGUS (1925-APPROXIMATE)) 149CANCER OF DIGESTIVE ORGANS AND PERITOHEUM (1925-APPROXIMATE)	140CANCER OF BUCCAL CAVITY AND PHARYIN	9ALL TUBERCULOSTS	ZALL THEECTIVE AND PARASITIC DISEASE	TACE TACTOTATI TEOPLASTIS		OAH CAUSES OF		TABLE 5. OBSERVED AND EXPECTED DEATHS 95 PERCENT CONFIDENCE LIMITS (COMPARED
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0.55	0.52	0.04	0.87	0.02	0.53	0.26	0.38	0.51	0.40	0.12	4.41	0.19	4.66	0.88	0.27	2.30	0 45	1.40	0.71	0.40	4.23	0.52	0.20	0.68	16.39	89.79	EXPECTED		mz
0.00	0.00	0.00	1.15	0.00	0.00	0.00	2.61	.7,80	2.49	0.00	0.91	5.16	1.07	2.28	0.00	0.00		3 16	0.00	2,49	1.42	0.00	0.00	0.00	1.40	1.11	OBS/EXP		DARDIZED MORTALITY RATIO VALUES, MALES, CHEMICAL DEATH RATES)
0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03	2.10	0.03	0.00	0.24	0.07	0.35	0.26	0.00	0.00	0.45		0-00	0.03	0.52	0.00	0.00	0.00	0.89	0.91	٦F		RTALITY LES, CHE
6.62	7.04	93.44	6.42	181.46	6.91	14.08	14.55	19.96	13.85	29.60	2.32	28.73	2.50	8.23	13.68	8.23	6.25		n .	13.A3	3.09	7.05	18.48	5.41	2.11	1.35	Ę		RATIO (: MICAL D
0.01	0.00	5.41	0.15	11.39	0.00	0.22	0.04	17,39	0,02	1.14	0.00	0.48	0.01	0.44	0.20	0.01	0.86	0.00			י פיג פיג	0,00	0.46	0.05	2.27	1.05	CIIISQ		(SMR), DIVISION

TABLE 5. OBSERVED AND EXPECTED DEATHS BY CAUSE, STANDARDIZED MORTALITY RATIO (SMR), 95 PERCENT CONFIDENCE LIMITS AND CHI SQUARE VALUES, MALES, CHEMICAL DIVISION (COMPARED TO MINNESOTA DEATH RATES) .

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	TOTAL RESIDUAL	_959SUICIDE	BIOINTOR VEHICLE ACCIDENTS	BOTALL ACCIDENTS	BOOALL EXTERNAL CAUSES OF DEATH	***799SYNPTONS,SENILITY,AND ILL DEFINED CONDITIONS	739ALL DISEASES OF THE BOHES AND ORGANS OF MOVEHENT	709ALL DISEASES OF THE SKIN AND CELLULAR TISSUE	582CHRONIC HEPHRITIS	500ALL DISEASES OF GENTTO-URINARY SYSTEM	571CIRRHOSIS OF LIVER	531ALL GASTRIC AND DUODENAL ULCER	520ALL DISEASES OF DIGESTIVE SYSTEM	493ASTINA (1925-,1930-APPROXIMATE)	492EHPHYSEHA (1950-,1955 APPROXIMATE)	480ALL PHEUMONIA (1925-,1930-APPROXIMATE)	460ALL RESPIRATORY DISEASES (1925-,1930-APPROXIMATE)	430ALL VASCULAR LESTONS OF CNS	410ARTERIOSCLEROTIC HEART DISEASE, INCLUDING CHD (1925-APPROXIMATE)	393CHRONIC RHEUMATIC HEART DISEASE (1925-APPROXIMATE)	390ALL DISEASES OF CIRCULATORY SYSTEM	320ALL DISEASES OF HERVOUS SYSTEM AND SENSE ORGANS	3191EHTAL, PSYCHORIEUROTIC, AND PERSONALITY DISORDERS (1950-1969 ORLY)	280ALL DISEASES OF BLOOD AND BLOOD-FORMING ORGANS (1925-1930-ADDROVING	250DIABETES HELLITUS	240ALLERGIC, ENDOCRINE, NETABOLIC, NUTRITIONAL DISEASES (1950-1949 CM)	210BENIGN NEOPLASMS (PLUS UNSPECIFIED)	209ALL LYMPHOPOIETIC CANCER	208CAPICER OF OTHER LYHPHATIC TISSUE (1950-1969 ONLY)	204LEUKEHIA AHD ALEUKEHIA
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	-65 OS	10 84	38.27	20.17	E2 17	7 ()		0.91	2.16	6.88	1.12	11.45	0.43	1.95	3.09		10.58		79 90	30.73	2 1 1	7 . 2 0	0.44	3.71	4.74	0.49	6.69	1.42	2.63	
-0.02		1.26	0.89	0.88	0.60	1.94		0.00	0.00	0.44	1.78	1.05	2.34	0.51	0.97	0.81	0.66	1.15	1.04	1.08	0.94	0.54	2.28	0.81	0.84	0.00	0.90	2.11	0.00	
	0.38	0.83	0.62	0.65	0.01	0.03	0.00	0.00	0.00	0.09	0.20	0.54	0.03	0.01	0.20	0.32	0.26	0.92	0.21	0.88	0.19	0.01	0.03	0.16	0.23	0.00	0.33	0.42	0.00	
	1.57	1.83	1.24	1.18	3.36	10.78	26.14	4.04	1.70	1.27	6.44	1.83	13.02	2.86	2.84	1.66	1.36	1,43	3.03	1.30	2.73	3.00	12.68	2.36	2.16	7.50	1.95	6.15	1.40	
	0.17	1.20	0.37	0.62	0.01	0.00	0.92	0.18	1.27	1.66	0.13	0.00	10.0	0.10	0.05	0.16	0.90	1.55	0.05	0.47	0.03	0.07	0.01	0.01	0.01	0.00	0.01	0.81	1.72	

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