



DU PONT HUMAN RESOURCES
Wilmington, Delaware 19898

cc: A.J. Playtis
G.A. Ploeger
W.E. Fayerweather
(letter only)

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CONFIDENTIAL

**Y.L. POWER, M.D.
WASHINGTON WORKS
POLYMERS**

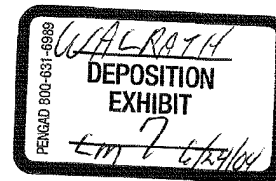
**WASHINGTON WORKS - SURVEILLANCE DATA
MORTALITY AND CANCER INCIDENCE**

As requested, attached for Washington Works are results of cancer incidence surveillance for 1956-1989 and mortality surveillance for 1957-1991. These data are generated from Du Pont's Company-wide epidemiologic surveillance program.

To assist in your interpretation and evaluation of the findings, I've included a description of the methodology used. Accompanying the surveillance tables is a summary of the major findings. If these findings include a statistically significant excess(es), further follow-up may be recommended.

Please call me at 773-4552 after you have had a chance to review the surveillance results so we can discuss what additional follow-up, if any, is warranted.

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INTERPRETATION OF EPIDEMIOLOGIC SURVEILLANCE DATA

Enclosed are tables for your site showing (1) cancer incidence surveillance from 1956 through 1989 among active employees and (2) mortality surveillance from 1957 through 1991 among active employees and pensioners. For each specific cause, the number of observed cases/deaths (OBS) is compared to the number expected (EXP) based on the experience of the entire Company. Comparison is made by the ratio of the observed to the expected numbers of cases/deaths (OBS/EXP). Accompanying each table is descriptive text which summarizes the major findings.

Sources of Surveillance Data

Since 1956, cancer cases that occur among active employees in the U.S. are recorded in the Du Pont Cancer Registry. Through 1988, cases have been reported to the Registry primarily by diagnoses entered on Accident and Health Insurance (A&H) claims and by death certificates that accompany life insurance claims filed by beneficiaries of deceased employees. Since 1988, insurance claims data are being used to ascertain diagnoses of cancer among active employees. Beginning in 1977, registry data sources were supplemented by Cancer Registry Report forms submitted by Company physicians. The Cancer Registry does not include cases diagnosed among employees whose cancer was first diagnosed after retirement or after employment termination due to reasons other than pension.

Deaths that occur among active and pensioned employees in the U.S. are recorded in the Du Pont Mortality Registry that was initiated in 1957. Deaths are identified through life insurance claims filed by beneficiaries of deceased employees. Deaths that occur among employees terminated without pension are not included since there is no uniform mechanism for identification of these deaths.

Methods

To determine expected numbers of cases/deaths for the standardized analysis, cancer incidence and mortality rates for Du Pont employees (and pensioners for mortality), specific for 5-year age categories, sex and payroll class (i.e. wage or salary roll), are computed for each cause category shown in the enclosed tables. Then, the Company-wide incidence/mortality rates are multiplied by the cumulative midyear population of employees (and pensioners, where applicable) from each location, specific for age, sex and payroll class, over the entire study period. The sum of the products over all age groups is the expected number of cases or deaths.

Standardized analyses are preferred because they provide age-adjusted expected numbers and are based on actual plant populations. In isolated cases where accurate population data are not available, proportionate incidence or mortality analyses are presented. In these analyses, the observed distribution of cases/deaths by cause is compared with that expected derived from proportions which occur

by cause is compared with that expected derived from proportions which occur throughout the entire Company. Proportions can be misleading, however, as it is possible to have an unusual distribution of cases/deaths without there being any excess rate for any specific cause. For example, if a plant has a lower death rate from heart disease than the rate in the Company as a whole, the proportion of deaths from other causes would be inflated (compared to that of the entire Company) in order that proportions for all causes add up to 100 percent.

Tests of Statistical Significance

To test whether the observed to expected ratios (OBS/EXP) given in the tables differ significantly from 1.00, we determine the probability that the difference between the observed and expected numbers occurred by chance alone. This probability value is obtained from the Poisson probability distribution. The difference is considered statistically significant if the probability value is less than 0.10 using the two-tailed test. In the two-tailed test, statistically significant deficits as well as excesses are denoted. Statistical significance is tested only if either the observed or expected number of cases or deaths is 4 or more.

Interpretation of Statistically Significant Results

The designation of a statistically significant excess often suggests the need for further investigation to determine whether the excess may have occurred because of some agent at the plant. However, an excess may also occur because of environmental and other factors associated with increased risks, such as smoking, diet, alcohol, ethnic origin, socioeconomic status or genetic factors.

Chance alone may account for a statistically significant difference. When the level of statistical significance is set at 0.10, one should expect to find a statistically significant difference in about 10 out of every 100 comparisons due to chance alone, even when no specific causative factor is responsible.

The magnitude of the difference, expressed as the ratio of observed to expected numbers (OBS/EXP), must also be considered in data interpretation. The OBS/EXP ratio and its corresponding probability value should be considered together in assessment of the difference between an observed and expected number.

It may be that the observed number for a particular cause is greater than the expected number, but the difference is not statistically significant. In this instance it does not necessarily follow that a particular agent at the plant may not be associated with the moderate excess. If the number of persons at the plant exposed to the agent is small, excess morbidity or mortality in that group would be difficult to detect because of dilution by data from the rest of the plant. Also, it may be too soon for effects of an agent to be manifested by excess morbidity or mortality.

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WASHINGTON WORKS

Cancer Incidence

No statistically significant excess was observed in the overall cancer experience of employees at Washington Works from 1956-1989.

There was, however, a statistically significant excess of cancers of the buccal cavity and pharynx among male wage (8 cases and 2.8 expected) and all male employees. This elevation was reported in the 1956-1987 surveillance and no additional cases have occurred since that time.

A statistically significant excess of kidney and other urinary cancers was observed among all male employees (9 cases versus 4.5 expected). This excess was also present in the 1956-1987 report, among male salary as well as all male employees. One case has been diagnosed during 1988-1989.

A bladder cancer excess reported during 1956-1987 among male wage employees is no longer statistically significant. No new cases have been reported during 1988-1989.

The earlier finding of an elevation in multiple myeloma among all men is no longer statistically significant. No new cases have been reported during 1988-1989.

A new finding is a statistically significant elevation in leukemia among male wage (7 cases versus 3.01 expected) and all male employees (9 cases versus 4.56 expected). This increase results from an additional 3 cases having been diagnosed among male wage employees since the last report. A recent case-control study of leukemia at Washington Works found no association between work in any area at the plant and development of leukemia.

No statistically significant deficits were observed in the overall or site-specific cancer experience of employees at Washington Works during 1956-1989.

Cancer experience among female employees was not unusual.

OBSERVED AND EXPECTED CANCER INCIDENCE USING POPULATION BASED RATES
 WASHINGTON (PARKERSBURG) - PLANT (LOCATION CODE = 013)
 1956 - 1989, MALES

| CAUSE OF CANCER | SALARY ROLL | | | WAGE ROLL | | | WAGE + SALARY | | |
|---------------------------------|-------------|----------|---------|-----------|----------|---------|---------------|----------|---------|
| | OBSERVED | EXPECTED | OBS/EXP | OBSERVED | EXPECTED | OBS/EXP | OBSERVED | EXPECTED | OBS/EXP |
| BUCCAL CAVITY & PHARYNX | 1 | 1.59 | 0.63 | 8 | 2.77 | 2.89 * | 9 | 4.36 | 2.06 * |
| ESOPHAGUS | 0 | 0.49 | 0.00 | 0 | 1.21 | 0.00 | 0 | 1.71 | 0.00 |
| STOMACH | 0 | 0.79 | 0.00 | 0 | 1.69 | 0.00 | 0 | 2.48 | 0.00 |
| SMALL AND LARGE INTESTINE | 9 | 5.56 | 1.62 | 6 | 7.35 | 0.82 | 15 | 12.91 | 1.16 |
| RECTUM | 2 | 1.95 | 1.03 | 3 | 3.42 | 0.88 | 5 | 5.38 | 0.93 |
| LIVER AND BILIARY PASSAGES | 0 | 0.47 | 0.00 | 2 | 1.10 | 1.82 | 2 | 1.57 | 1.28 |
| PANCREAS | 1 | 1.23 | 0.82 | 2 | 2.26 | 0.89 | 3 | 3.48 | 0.86 |
| PERITONEUM | 0 | 0.15 | 0.00 | 1 | 0.10 | 0.59 | 1 | 0.25 | 4.00 |
| UNSPEC. DIGESTIVE ORGANS | 0 | 0.03 | 0.00 | 0 | 0.01 | 0.00 | 0 | 0.03 | 0.00 |
| NOSE, NASAL CAVITIES, ETC. | 1 | 0.13 | 7.51 | 0 | 0.54 | 0.00 | 1 | 0.68 | 1.48 |
| LARYNX | 1 | 0.70 | 1.44 | 3 | 2.07 | 1.45 | 4 | 2.77 | 1.44 |
| LUNG, BRONCHUS, & TRACHEA | 8 | 7.62 | 1.05 | 12 | 15.43 | 0.78 | 20 | 23.05 | 0.87 |
| MEDIASTINUM & UNSPEC. | 0 | 0.12 | 0.00 | 0 | 0.18 | 0.00 | 0 | 0.30 | 0.00 |
| PLEURA | 0 | 0.13 | 0.00 | 1 | 0.33 | 3.06 | 1 | 0.45 | 2.21 |
| BREAST | 0 | 0.12 | 0.00 | 0 | 0.10 | 0.00 | 0 | 0.22 | 0.00 |
| PROSTATE | 1 | 2.93 | 0.34 | 3 | 4.23 | 0.71 | 4 | 7.16 | 0.56 |
| TESTIS | 2 | 1.20 | 1.66 | 2 | 1.74 | 1.15 | 4 | 2.94 | 1.36 |
| OTHER MALE GENITAL ORGANS | 0 | 0.02 | 0.00 | 0 | 0.23 | 0.00 | 0 | 0.25 | 0.00 |
| KIDNEY & OTHER URINARY | 5 | 2.08 | 2.40 | 4 | 2.45 | 1.63 | 9 | 4.53 | 1.98 * |
| BLADDER | 0 | 2.12 | 0.00 | 8 | 4.47 | 1.79 | 8 | 6.58 | 1.22 |
| MALIGNANT MELANOMA | 7 | 3.68 | 1.90 | 5 | 6.86 | 0.73 | 12 | 10.54 | 1.14 |
| EYE | 0 | 0.12 | 0.00 | 0 | 0.23 | 0.00 | 0 | 0.35 | 0.00 |
| BRAIN & OTHER NERVOUS SYSTEM | 1 | 1.59 | 0.83 | 3 | 3.30 | 0.91 | 4 | 4.89 | 0.82 |
| THYROID | 0 | 0.52 | 0.00 | 1 | 1.49 | 0.67 | 1 | 2.01 | 0.50 |
| OTHER ENDOCRINE GLANDS | 1 | 0.22 | 4.60 | 1 | 0.23 | 4.35 | 2 | 0.45 | 4.47 |
| BONE | 0 | 0.16 | 0.00 | 1 | 0.32 | 3.12 | 1 | 0.48 | 2.08 |
| CONNECTIVE TISSUE | 0 | 0.76 | 0.00 | 1 | 1.25 | 0.80 | 1 | 2.00 | 0.50 |
| LYMPHOSARCOMA & RETICULOSARCOMA | 1 | 1.23 | 0.81 | 0 | 1.36 | 0.00 | 1 | 2.59 | 0.39 |
| HODGKIN'S DISEASE | 2 | 0.97 | 2.07 | 2 | 2.40 | 0.83 | 4 | 3.36 | 1.19 |
| OTHER LYMPHOMA | 2 | 0.90 | 2.23 | 5 | 2.10 | 2.39 | 7 | 2.99 | 2.34 * |
| MULTIPLE MYELOMA | 2 | 0.49 | 4.05 | 2 | 0.94 | 2.12 | 4 | 1.44 | 2.78 * |
| LEUKEMIA | 2 | 1.56 | 1.28 | 7 | 3.01 | 2.33 * | 9 | 4.56 | 1.97 * |
| MYCOSIS FUNGOIDES | 1 | 0.12 | 0.00 | 0 | 0.00 | - | 0 | 0.12 | 0.00 |
| OTHER HEMATOPOIETIC SYSTEM | 1 | 0.18 | 5.48 | 0 | 0.22 | 0.00 | 1 | 0.41 | 2.46 |
| OTHER & UNKNOWN | 2 | 1.65 | 1.21 | 1 | 2.30 | 0.43 | 3 | 3.95 | 0.76 |
| TOTAL ALL CAUSES | 52 | 43.56 | 1.19 | 84 | 77.69 | 1.08 | 136 | 121.26 | 1.12 |

STAT SIGNIFICANT EXCESS (*) / DEFICIT (#) AT 2-TAILED 0.10 LEVEL
 (CALCULATED ONLY WHERE EITHER OBS OR EXP GE 4)

NOTE: OTHER SKIN CANCER NOT INCLUDED IN THIS REPORT

OBSERVED AND EXPECTED CANCER INCIDENCE USING POPULATION BASED RATES
 WASHINGTON (PARKERSBURG) - PLANT (LOCATION CODE = 013)
 1956 - 1989, FEMALES

| CAUSE OF CANCER | SALARY ROLL | | | WAGE ROLL | | | WAGE + SALARY | | |
|----------------------------------|-------------|----------|---------|-----------|----------|---------|---------------|----------|---------|
| | OBSERVED | EXPECTED | OBS/EXP | OBSERVED | EXPECTED | OBS/EXP | OBSERVED | EXPECTED | OBS/EXP |
| BUCCAL CAVITY & PHARYNX | 0 | 0.04 | 0.00 | 0 | 0.07 | 0.00 | 0 | 0.12 | 0.00 |
| ESOPHAGUS | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 |
| STOMACH | 0 | 0.10 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.10 | 0.00 |
| SMALL AND LARGE INTESTINE | 0 | 0.35 | 0.00 | 0 | 0.13 | 0.00 | 0 | 0.48 | 0.00 |
| RECTUM AND BILINARY PASSAGES | 0 | 0.15 | 0.00 | 0 | 0.11 | 0.00 | 0 | 0.27 | 0.00 |
| LIVER AND BILINARY PASSAGES | 0 | 0.00 | 0.00 | 0 | 0.05 | 0.00 | 0 | 0.05 | 0.00 |
| PANCREAS | 0 | 0.05 | 0.00 | 0 | 0.02 | 0.00 | 0 | 0.07 | 0.00 |
| PERITONEUM | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 |
| NOSE, NASAL CAVITIES, ETC. | 0 | 0.01 | 0.00 | 0 | 0.01 | 0.00 | 0 | 0.01 | 0.00 |
| LARYNX | 0 | 0.02 | 0.00 | 0 | 0.01 | 0.00 | 0 | 0.04 | 0.00 |
| LUNG, BRONCHUS, & TRACHEA | 0 | 0.47 | 0.00 | 0 | 0.07 | 0.00 | 0 | 0.55 | 0.00 |
| BREAST | 2 | 2.78 | 0.72 | 3 | 1.71 | 1.75 | 5 | 4.49 | 1.11 |
| CERVIX | 0 | 1.62 | 0.00 | 0 | 1.39 | 2.88 | 4 | 3.01 | 1.33 |
| OTHER FEMALE GENITAL ORGANS | 0 | 1.03 | 0.00 | 0 | 0.30 | 0.00 | 0 | 1.33 | 0.00 |
| KIDNEY & OTHER URINARY | 0 | 0.02 | 0.00 | 0 | 0.11 | 0.00 | 0 | 0.13 | 0.00 |
| BLADDER | 0 | 0.08 | 0.00 | 0 | 0.02 | 0.00 | 0 | 0.10 | 0.00 |
| MALIGNANT MELANOMA | 2 | 0.43 | 4.70 | 1 | 0.22 | 4.48 | 3 | 0.65 | 4.63 |
| EYE | 0 | 0.01 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.01 | 0.00 |
| BRAIN & OTHER NERVOUS SYSTEM | 0 | 0.11 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.11 | 0.00 |
| THYROID | 1 | 0.32 | 3.16 | 0 | 0.02 | 0.00 | 1 | 0.34 | 2.96 |
| OTHER ENDOCRINE GLANDS | 0 | 0.00 | 0.00 | 0 | 0.09 | 0.00 | 0 | 0.09 | 0.00 |
| BONE | 0 | 0.08 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.08 | 0.00 |
| CONNECTIVE TISSUE | 0 | 0.09 | 0.00 | 0 | 0.07 | 13.39 | 1 | 0.16 | 6.12 |
| LYMPHOSARCOMA & RETTICULOSARCOMA | 0 | 0.14 | 0.00 | 0 | 0.06 | 0.00 | 0 | 0.20 | 0.00 |
| HODGKIN'S DISEASE | 0 | 0.17 | 0.00 | 0 | 0.03 | 0.00 | 0 | 0.20 | 0.00 |
| OTHER LYMPHOMA | 0 | 0.14 | 0.00 | 0 | 0.14 | 0.00 | 0 | 0.28 | 0.00 |
| MULTIPLE MYELOMA | 2 | 0.09 | 21.28 | 0 | 0.00 | 0.00 | 2 | 0.09 | 21.28 |
| LEUKEMIA | 0 | 0.10 | 0.00 | 0 | 0.10 | 0.00 | 0 | 0.20 | 0.00 |
| MYCOSIS FUNGOIDES | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 |
| OTHER & UNKNOWN | 0 | 0.16 | 0.00 | 0 | 0.13 | 0.00 | 0 | 0.29 | 0.00 |
| TOTAL ALL CAUSES | 7 | 8.57 | 0.82 | 9 | 4.87 | 1.85 | 16 | 13.44 | 1.19 |

STAT SIGNIFICANT EXCESS (*) / DEFICIT (#) AT 2-TAILED 0.10 LEVEL
 (CALCULATED ONLY WHERE EITHER OBS OR EXP GE 4)

NOTE: OTHER SKIN CANCER NOT INCLUDED IN THIS REPORT

WASHINGTON WORKSMortality

Statistically significant deficits are again observed in the overall mortality experience of male wage and all male employees at Washington Works, for 1957-1991.

Statistically significant deficits are seen for all malignant neoplasms among male wage (60 deaths versus 78.4 expected) and all male employees (99 deaths versus 124.8 expected). In addition, male wage employees show a statistically significant deficit of respiratory cancer deaths (19 deaths versus 28.6 expected) and all male employees have a significant deficit of digestive cancer deaths (22 deaths versus 32.0 expected).

There is a statistically significant deficit of deaths from cerebrovascular disease among male wage employees (6 deaths versus 13.9 expected) and all male employees (12 deaths versus 20.8 expected). The deficit in male wage employees was reported in the 1957-1987 report.

A significant deficit is seen among all male employees for suicide (3 observed versus 10.8 expected).

Among female employees, there is a statistically significant excess of 'residual' causes of death (4 deaths versus 1.05 expected).

OBSERVED AND EXPECTED DEATHS USING POPULATION-BASED RATES
 WASHINGTON (PARKERSBURG) - PLANT (LOCATION CODE = 013)
 1927 - 1951, MALES

| CAUSE OF DEATH | SALARY ROLL | | | WAGE ROLL | | | WAGE + SALARY | | |
|---------------------------------------|-------------|----------|---------|-----------|----------|---------|---------------|----------|---------|
| | OBSERVED | EXPECTED | OBS/EXP | OBSERVED | EXPECTED | OBS/EXP | OBSERVED | EXPECTED | OBS/EXP |
| MALIGNANT NEOPLASMS | 1 | 0.89 | 1.13 | 2 | 1.52 | 1.32 | 3 | 2.41 | 1.25 |
| BUCCAL CAVITY & PHARYNX | 9 | 12.48 | 0.72 | 13 | 19.53 | 0.67 | 22 | 32.01 | 0.69 # |
| DIGESTIVE ORGANS | 15 | 14.76 | 1.02 | 19 | 28.60 | 0.66 # | 34 | 43.36 | 0.78 |
| RESPIRATORY SYSTEM | 0 | 0.10 | 0.00 | 0 | 0.09 | 0.00 | 0 | 0.19 | 0.00 |
| BREAST | 4 | 3.56 | 1.12 | 3 | 5.54 | 0.54 | 7 | 9.11 | 0.77 |
| GENITAL ORGANS | 0 | 2.65 | 0.00 | 4 | 3.68 | 1.09 | 4 | 6.33 | 0.63 |
| URINARY ORGANS | 5 | 5.28 | 0.95 | 9 | 8.66 | 1.04 | 14 | 13.93 | 1.00 |
| LYMPHATIC, ETC. | 5 | 6.71 | 0.75 | 10 | 10.75 | 0.93 | 15 | 17.46 | 0.86 |
| OTHER & UNSPECIFIED | 39 | 46.43 | 0.84 | 60 | 78.37 | 0.77 # | 99 | 124.80 | 0.79 # |
| TOTAL MALIGNANT NEOPLASMS | 6 | 6.98 | 0.86 | 6 | 13.86 | 0.43 # | 12 | 20.84 | 0.58 # |
| CEREBROVASCULAR DISEASE | 2 | 0.70 | 2.85 | 2 | 0.78 | 2.57 | 4 | 1.48 | 2.70 |
| DISEASES OF THE HEART | 55 | 49.70 | 1.11 | 83 | 89.73 | 0.92 | 138 | 139.43 | 0.99 |
| CHRONIC RHEUMATIC HEART DISEASE | 1 | 0.30 | 3.30 | 0 | 0.54 | 0.00 | 1 | 0.85 | 1.18 |
| ARTERIOSCLEROTIC HEART DISEASE | 0 | 1.10 | 0.00 | 1 | 1.93 | 0.52 | 1 | 3.03 | 0.33 |
| CHRONIC ENDOCARDITIS | 14 | 8.99 | 1.56 | 18 | 16.35 | 1.10 | 32 | 25.34 | 1.26 |
| HYPERTENSIVE HEART DISEASE | 0 | 0.02 | 0.00 | 0 | 0.02 | 0.00 | 0 | 0.04 | 0.00 |
| OTHER HEART DISEASE | 2 | 0.44 | 4.53 | 0 | 0.64 | 0.00 | 2 | 1.09 | 1.84 |
| OTHER CARDIOVASCULAR DISEASE | 6 | 3.35 | 1.79 | 4 | 5.17 | 0.77 | 10 | 8.52 | 1.77 |
| RHEUMATIC FEVER | 0 | 0.02 | 0.00 | 0 | 0.02 | 0.00 | 0 | 0.04 | 0.00 |
| HYPERTENSION WITHOUT MENTION OF HEART | 2 | 0.46 | 4.31 | 0 | 0.67 | 0.00 | 2 | 1.33 | 1.77 |
| GENERALIZED ARTERIOSCLEROSIS | 0 | 3.26 | 0.92 | 4 | 8.81 | 0.45 | 7 | 12.07 | 0.58 |
| OTHER | 3 | 3.53 | 1.70 | 9 | 15.17 | 0.59 | 15 | 18.70 | 0.80 |
| EXTERNAL CAUSES OF DEATH | 0 | 3.03 | 0.00 | 3 | 7.75 | 0.39 | 3 | 10.78 | 0.28 # |
| MOTOR VEHICLE ACCIDENTS | 0 | 0.34 | 0.00 | 1 | 2.65 | 0.38 | 1 | 2.99 | 0.33 |
| SUICIDE | 0 | 3.26 | 0.92 | 4 | 8.81 | 0.45 | 7 | 12.07 | 0.58 |
| HOMICIDE | 0 | 0.03 | 0.00 | 0 | 0.09 | 0.00 | 0 | 0.12 | 0.00 |
| OTHER ACCIDENTS | 5 | 2.36 | 2.12 | 4 | 4.23 | 0.95 | 9 | 6.59 | 1.37 |
| OTHER CAUSES | 0 | 0.73 | 0.00 | 1 | 1.81 | 0.55 | 1 | 2.54 | 0.39 |
| INFLUENZA | 0 | 0.03 | 0.00 | 0 | 0.22 | 0.00 | 0 | 0.26 | 0.00 |
| PNEUMONIA | 2 | 1.03 | 1.95 | 2 | 2.62 | 0.76 | 4 | 3.84 | 1.10 |
| NEPHRITIS & NEPHROSIS | 0 | 0.42 | 0.00 | 0 | 0.76 | 0.00 | 0 | 1.18 | 0.00 |
| TUBERCULOSIS OF RESPIRATORY SYSTEM | 0 | 0.06 | 0.00 | 0 | 0.01 | 0.00 | 0 | 0.07 | 0.00 |
| DIABETES MELLITUS | 0 | 0.23 | 0.00 | 1 | 0.31 | 3.21 | 1 | 0.55 | 1.83 |
| PEPTIC ULCER | 2 | 1.81 | 1.11 | 1 | 3.48 | 0.29 | 3 | 5.29 | 0.57 |
| APPENDICITIS | 1 | 1.08 | 0.92 | 3 | 2.47 | 1.21 | 4 | 3.55 | 1.13 |
| HERNIA & INTESTINAL OBSTRUCTION | 1 | 1.27 | 0.79 | 1 | 2.84 | 0.35 | 2 | 4.11 | 0.49 |
| CIRRHOSIS OF THE LIVER | 12 | 13.16 | 0.91 | 19 | 23.32 | 0.81 | 31 | 36.48 | 0.85 |
| EMPHYSEMA | 0 | 0.62 | 0.00 | 2 | 1.47 | 1.36 | 2 | 2.09 | 0.95 |
| SYMPTOMS & ILL-DEFINED CONDITIONS | 159 | 151.48 | 1.05 | 225 | 286.08 | 0.79 # | 384 | 437.56 | 0.88 # |
| RESIDUAL UNSPECIFIED | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 |
| TOTAL ALL CAUSES | 159 | 151.48 | 1.05 | 225 | 286.08 | 0.79 # | 384 | 437.56 | 0.88 # |

STAT SIG EXCESS (*) / DEFICIT (#) AT 2-TAILED 0.10 LEVEL (CALCULATED ONLY WHERE EITHER OBS OR EXP GE 4)

OBSERVED AND EXPECTED DEATHS USING POPULATION-BASED RATES
 WASHINGTON (PARKERSBURG) - PLANT (LOCATION CODE = 013)
 1957 - 1991, FEMALES

| CAUSE OF DEATH | SALARY ROLL | | | WAGE ROLL | | | WAGE + SALARY | | |
|---------------------------------------|-------------|----------|---------|-----------|----------|---------|---------------|----------|---------|
| | OBSERVED | EXPECTED | OBS/EXP | OBSERVED | EXPECTED | OBS/EXP | OBSERVED | EXPECTED | OBS/EXP |
| MALIGNANT NEOPLASMS | 0 | 0.02 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.02 | 0.00 |
| BUCCAL CAVITY & PHARYNX | 0 | 0.44 | 0.00 | 0 | 0.24 | 0.00 | 0 | 0.09 | 0.00 |
| DIGESTIVE ORGANS | 0 | 0.48 | 0.00 | 0 | 0.18 | 0.00 | 0 | 0.09 | 0.00 |
| RESPIRATORY SYSTEM | 0 | 0.98 | 0.00 | 1 | 0.65 | 1.53 | 1 | 1.63 | 0.61 |
| BREAST | 0 | 0.41 | 0.00 | 0 | 0.13 | 0.00 | 0 | 0.54 | 0.00 |
| GENITAL ORGANS | 0 | 0.05 | 0.00 | 0 | 0.08 | 0.00 | 0 | 0.12 | 0.00 |
| URINARY ORGANS | 0 | 0.35 | 0.00 | 0 | 0.26 | 0.00 | 0 | 0.61 | 0.00 |
| LYMPHATIC, ETC. | 1 | 0.42 | 2.39 | 0 | 0.13 | 0.00 | 1 | 0.55 | 1.83 |
| OTHER & UNSPECIFIED | 1 | 3.15 | 0.32 | 1 | 1.67 | 0.60 | 2 | 4.61 | 0.42 |
| TOTAL MALIGNANT NEOPLASMS | 0 | 0.35 | 0.00 | 0 | 0.24 | 0.00 | 0 | 0.60 | 0.00 |
| CEREBROVASCULAR DISEASE | 0 | 0.09 | 0.00 | 0 | 0.00 | - | 0 | 0.09 | 0.00 |
| CHRONIC RHEUMATIC HEART DISEASE | 2 | 0.71 | 2.80 | 0 | 0.22 | 0.00 | 2 | 0.24 | 2.14 |
| ARTERIOSCLEROTIC HEART DISEASE | 0 | 0.01 | 0.00 | 0 | 0.00 | - | 0 | 0.01 | 0.00 |
| CHRONIC ENDOCARDITIS | 0 | 0.04 | 0.00 | 0 | 0.00 | - | 0 | 0.04 | 0.00 |
| HYPERTENSIVE HEART DISEASE | 2 | 0.23 | 8.57 | 0 | 0.07 | 0.00 | 2 | 0.31 | 6.49 |
| OTHER HEART DISEASE | 0 | 0.00 | - | 0 | 0.00 | - | 0 | 0.00 | - |
| OTHER CARDIOVASCULAR DISEASE | 0 | 0.01 | 0.00 | 0 | 0.01 | 0.00 | 0 | 0.01 | 0.00 |
| RHEUMATIC FEVER | 0 | 0.10 | 0.00 | 0 | 0.03 | 0.00 | 0 | 0.13 | 0.00 |
| HYPERTENSION WITHOUT MENTION OF HEART | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.02 | 0.00 |
| GENERALIZED ARTERIOSCLEROSIS | 0 | 0.10 | 0.00 | 0 | 0.03 | 0.00 | 0 | 0.13 | 0.00 |
| OTHER | 1 | 0.54 | 1.86 | 0 | 0.34 | 0.00 | 1 | 0.88 | 1.14 |
| EXTERNAL CAUSES OF DEATH | 0 | 0.12 | 0.00 | 0 | 0.16 | 0.00 | 0 | 0.28 | 0.00 |
| MOTOR VEHICLE ACCIDENTS | 0 | 0.11 | 0.00 | 0 | 0.27 | 0.00 | 0 | 0.37 | 0.00 |
| SUICIDE | 0 | 0.11 | 0.00 | 0 | 0.04 | 0.00 | 0 | 0.15 | 0.00 |
| HOMICIDE | 0 | 0.01 | 0.00 | 0 | 0.00 | - | 0 | 0.01 | 0.00 |
| OTHER ACCIDENTS | 0 | 0.09 | 0.00 | 0 | 0.04 | 0.00 | 0 | 0.12 | 0.00 |
| OTHER CAUSES | 0 | 0.00 | - | 0 | 0.03 | 0.00 | 0 | 0.03 | 0.00 |
| INFLUENZA | 0 | 0.00 | 0.00 | 0 | 0.00 | - | 0 | 0.00 | 0.00 |
| PNEUMONIA | 0 | 0.00 | 0.00 | 0 | 0.00 | - | 0 | 0.00 | 0.00 |
| NEPHRITIS & NEPHROSIS | 0 | 0.00 | - | 0 | 0.00 | - | 0 | 0.00 | 0.00 |
| TUBERCULOSIS OF RESPIRATORY SYSTEM | 0 | 0.04 | 0.00 | 0 | 0.01 | 0.00 | 0 | 0.04 | 0.00 |
| DIABETES MELLITUS | 0 | 0.01 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.01 | 0.00 |
| PEPTIC ULCER | 0 | 0.00 | - | 0 | 0.00 | - | 0 | 0.00 | - |
| APPENDICITIS | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 |
| HERNIA & INTESTINAL OBSTRUCTION | 0 | 0.06 | 0.00 | 0 | 0.01 | 0.00 | 0 | 0.07 | 0.00 |
| CIRRHOSIS OF THE LIVER | 0 | 0.04 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.04 | 0.00 |
| EMPHYSEMA | 1 | 0.11 | 9.39 | 0 | 0.03 | 0.00 | 1 | 0.14 | 7.08 |
| SYMPTOMS & ILL-DEFINED CONDITIONS | 2 | 0.73 | 2.73 | 2 | 0.32 | 6.31 | 4 | 1.05 | 3.81 * |
| RESIDUAL | 0 | 0.02 | 0.00 | 0 | 0.09 | 0.00 | 0 | 0.11 | 0.00 |
| UNSPECIFIED | 9 | 6.68 | 1.35 | 3 | 3.58 | 0.84 | 12 | 10.26 | 1.17 |
| TOTAL ALL CAUSES | 0 | 0.02 | 0.00 | 0 | 0.09 | 0.00 | 0 | 0.11 | 0.00 |

STAT SIG EXCESS (*) / DEFICIT (#) AT 2-TAILED 0.10 LEVEL (CALCULATED ONLY WHERE EITHER OBS OR EXP GE 4)