

| Name of Variable = pollution | |
|---|----------|
| Period(s) of Differencing | 12 |
| Mean of Working Series | 0.197637 |
| Standard Deviation | 32.5308 |
| Number of Observations | 48 |
| Observation(s) eliminated by differencing | 12 |

| Autocorrelation Check for White Noise | | | | | | | | | |
|---------------------------------------|------------|----|------------|------------------|-------|--------|--------|--------|--------|
| To Lag | Chi-Square | DF | Pr > ChiSq | Autocorrelations | | | | | |
| 6 | 4.46 | 6 | 0.6141 | -0.224 | 0.032 | -0.049 | -0.094 | -0.014 | -0.147 |
| 12 | 9.10 | 12 | 0.6947 | -0.003 | 0.021 | -0.005 | 0.006 | 0.001 | -0.263 |

Variable press has been differenced.

| Correlation of pollution and press | |
|---|----------|
| Period(s) of Differencing | 12 |
| Variance of input = | 7.620022 |
| Number of Observations | 48 |
| Observation(s) eliminated by differencing | 12 |

Variable wnd_spd has been differenced.

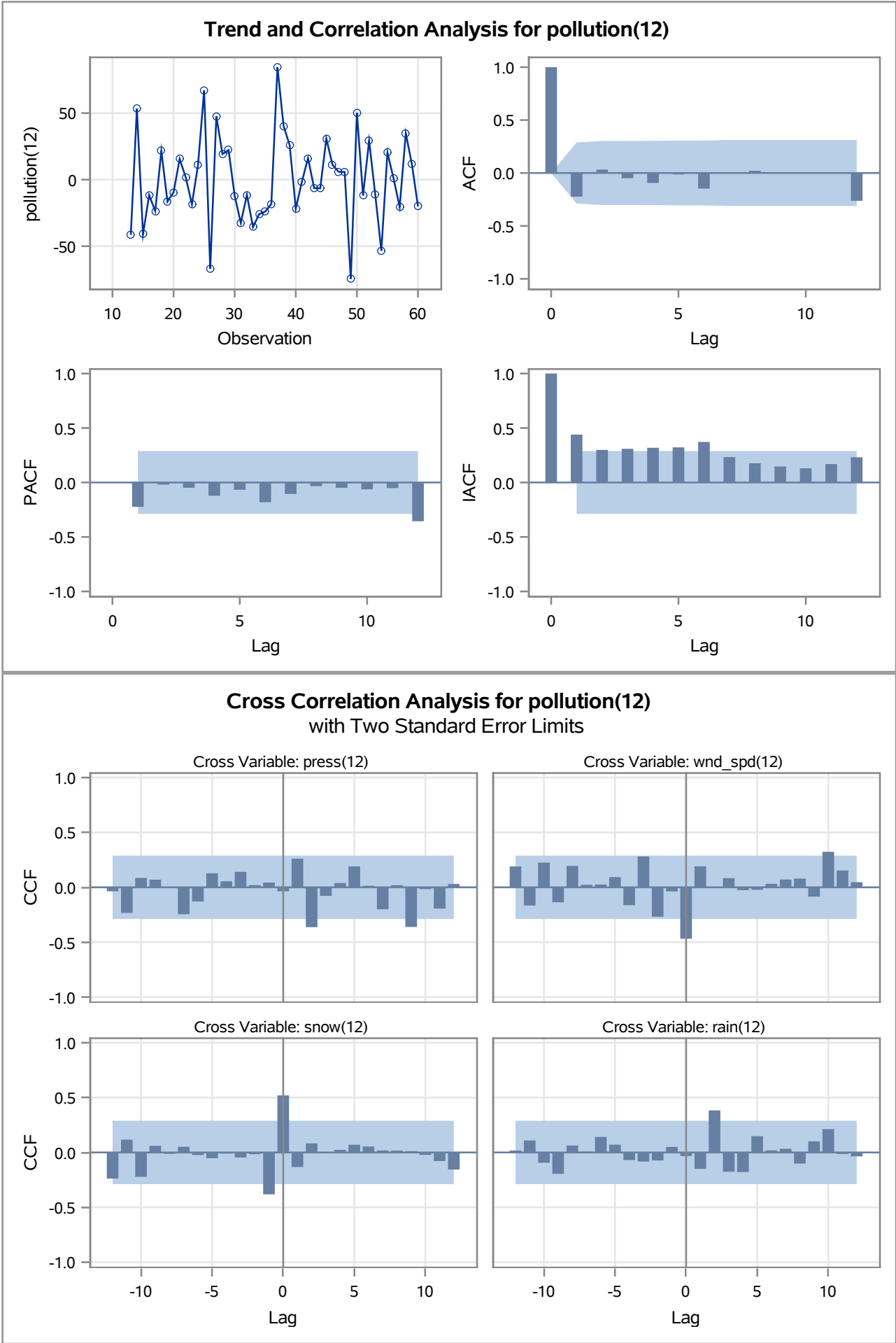
| Correlation of pollution and wnd_spd | |
|---|----------|
| Period(s) of Differencing | 12 |
| Variance of input = | 273.9999 |
| Number of Observations | 48 |
| Observation(s) eliminated by differencing | 12 |

Variable snow has been differenced.

| Correlation of pollution and snow | |
|---|----------|
| Period(s) of Differencing | 12 |
| Variance of input = | 24.27074 |
| Number of Observations | 48 |
| Observation(s) eliminated by differencing | 12 |

Variable rain has been differenced.

| Correlation of pollution and rain | |
|---|--------|
| Period(s) of Differencing | 12 |
| Variance of input = | 57.489 |
| Number of Observations | 48 |
| Observation(s) eliminated by differencing | 12 |

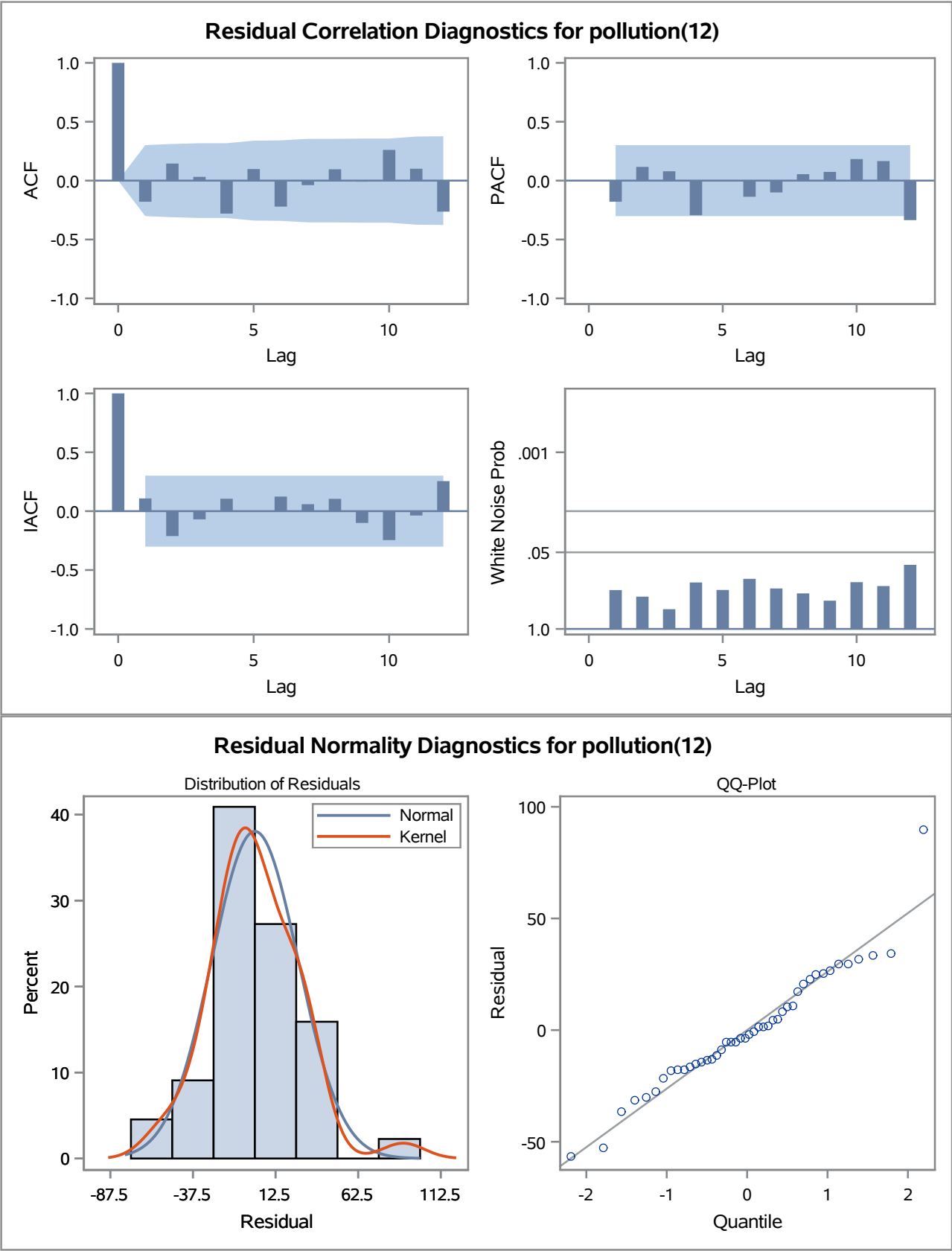


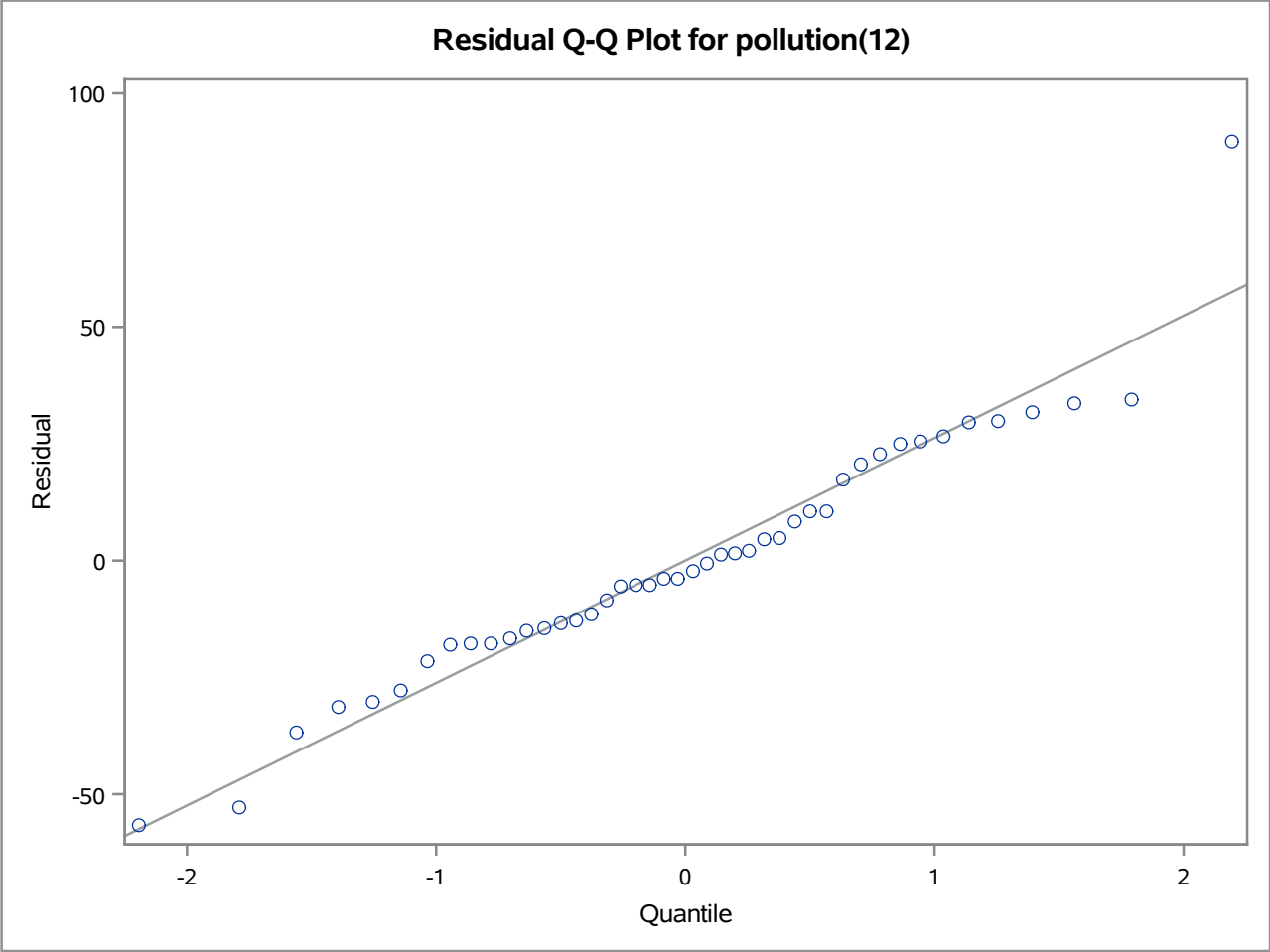
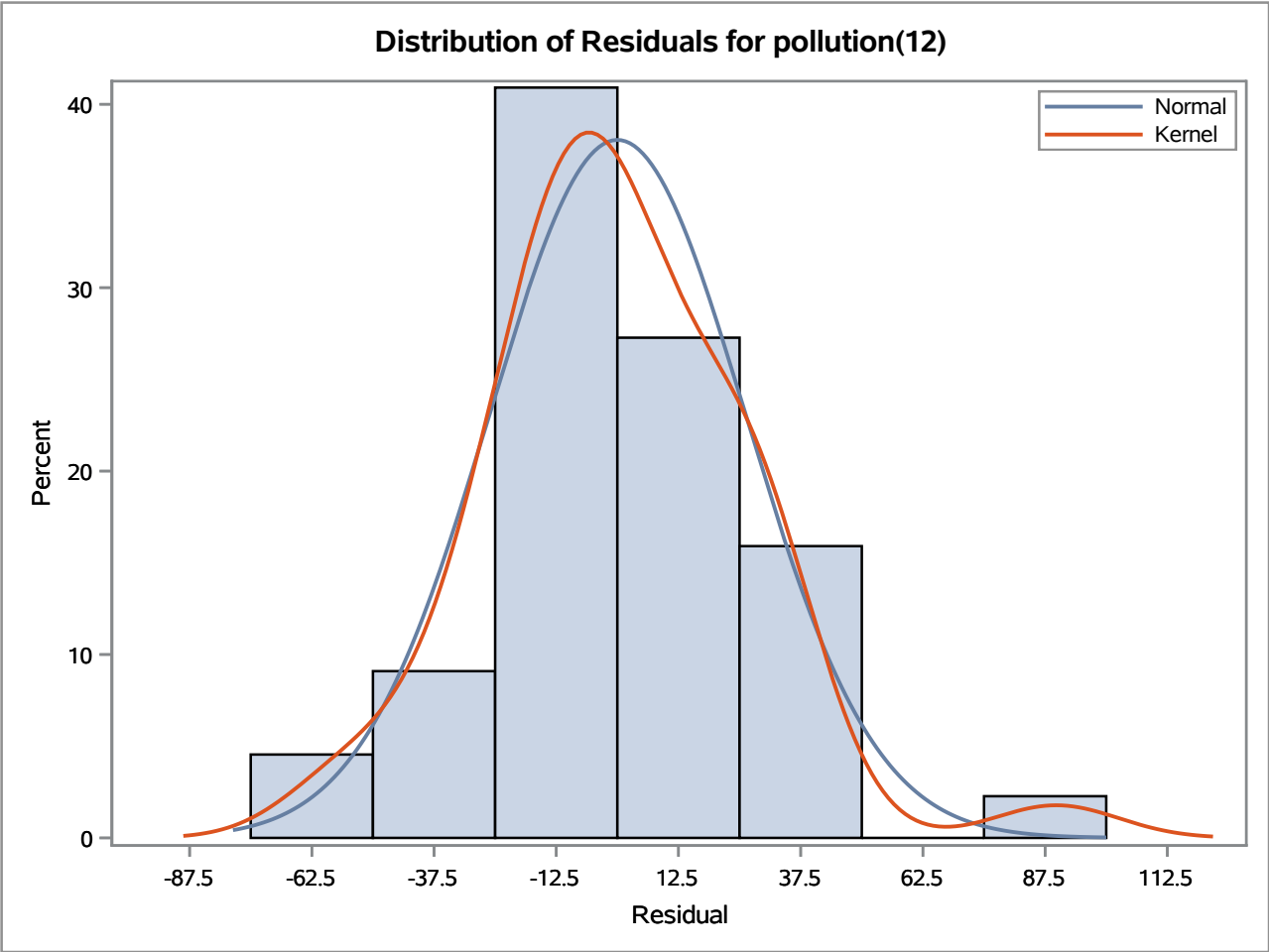
| Maximum Likelihood Estimation | | | | | | | |
|-------------------------------|----------|----------------|---------|----------------|-----|-----------|-------|
| Parameter | Estimate | Standard Error | t Value | Approx Pr > t | Lag | Variable | Shift |
| MU | -1.55642 | 4.30452 | -0.36 | 0.7177 | 0 | pollution | 0 |
| NUM1 | -0.14925 | 1.67951 | -0.09 | 0.9292 | 0 | press | 1 |
| NUM2 | -0.74770 | 0.31261 | -2.39 | 0.0168 | 0 | wnd_spd | 0 |
| NUM3 | 2.59254 | 1.06170 | 2.44 | 0.0146 | 0 | snow | 0 |
| NUM4 | -0.49080 | 0.56618 | -0.87 | 0.3860 | 0 | rain | 4 |

| | |
|----------------------------|----------|
| Constant Estimate | -1.55642 |
| Variance Estimate | 757.2657 |
| Std Error Estimate | 27.51846 |
| AIC | 421.2664 |
| SBC | 430.1873 |
| Number of Residuals | 44 |

| Correlations of Parameter Estimates | | | | | | |
|-------------------------------------|--------------|------------|--------------|-----------|-----------|--|
| Variable Parameter | pollution MU | press NUM1 | wnd_spd NUM2 | snow NUM3 | rain NUM4 | |
| pollution MU | 1.000 | 0.135 | 0.198 | 0.039 | 0.135 | |
| press NUM1 | 0.135 | 1.000 | 0.351 | -0.118 | 0.191 | |
| wnd_spd NUM2 | 0.198 | 0.351 | 1.000 | 0.229 | -0.194 | |
| snow NUM3 | 0.039 | -0.118 | 0.229 | 1.000 | -0.151 | |
| rain NUM4 | 0.135 | 0.191 | -0.194 | -0.151 | 1.000 | |

| Autocorrelation Check of Residuals | | | | | | | | | |
|------------------------------------|------------|----|------------|------------------|--------|--------|--------|--------|--------|
| To Lag | Chi-Square | DF | Pr > ChiSq | Autocorrelations | | | | | |
| 6 | 9.63 | 6 | 0.1411 | -0.179 | 0.145 | 0.032 | -0.280 | 0.098 | -0.221 |
| 12 | 19.30 | 12 | 0.0816 | -0.038 | 0.096 | -0.009 | 0.261 | 0.101 | -0.264 |
| 18 | 26.71 | 18 | 0.0846 | 0.126 | -0.206 | -0.112 | -0.011 | -0.169 | 0.081 |
| 24 | 34.01 | 24 | 0.0844 | 0.010 | 0.012 | 0.156 | -0.212 | 0.098 | -0.026 |





| Model for variable pollution | |
|------------------------------|----------|
| Estimated Intercept | -1.55642 |
| Period(s) of Differencing | 12 |

| Input Number 1 | |
|---------------------------|----------|
| Input Variable | press |
| Shift | 1 |
| Period(s) of Differencing | 12 |
| Overall Regression Factor | -0.14925 |

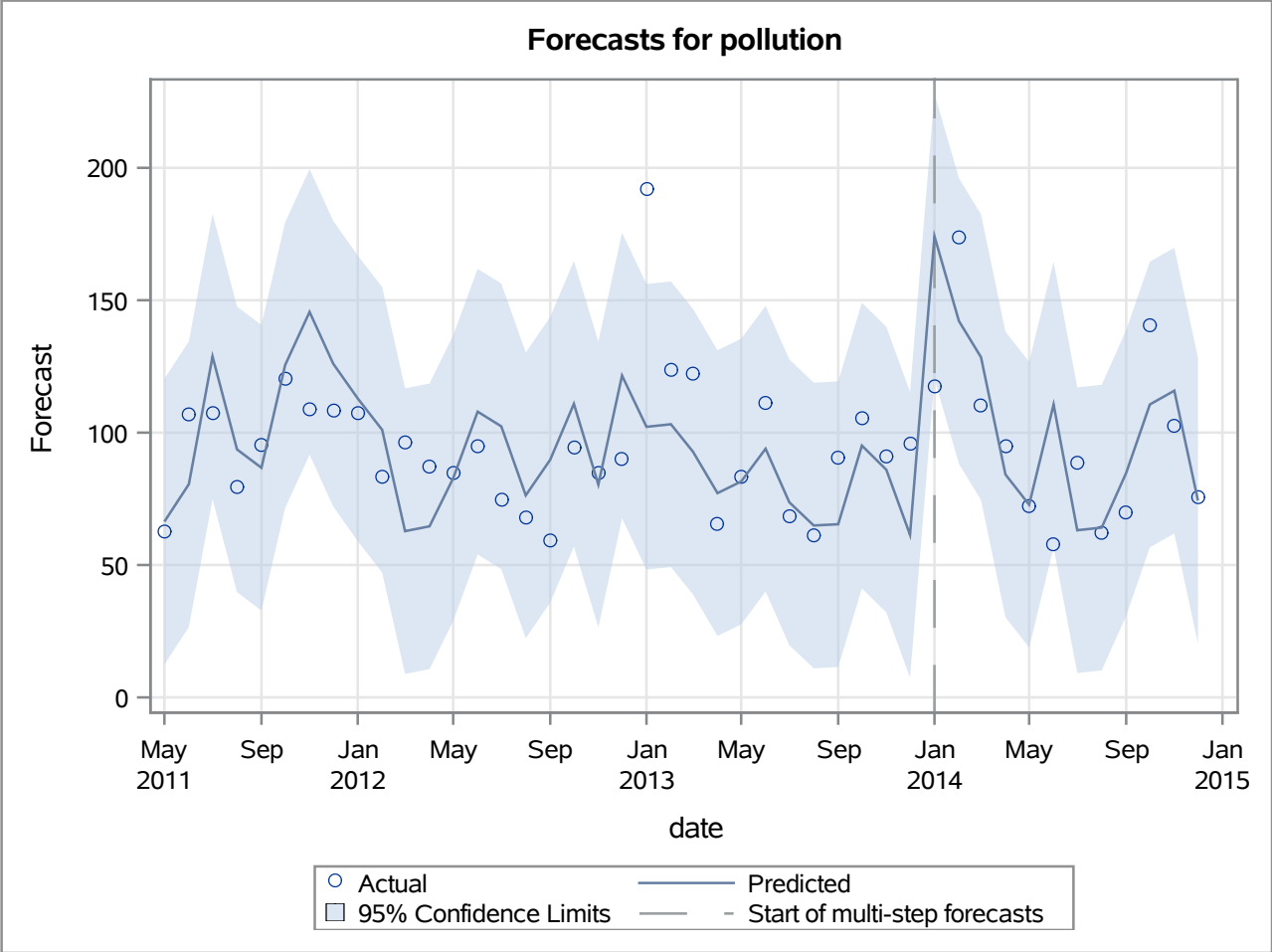
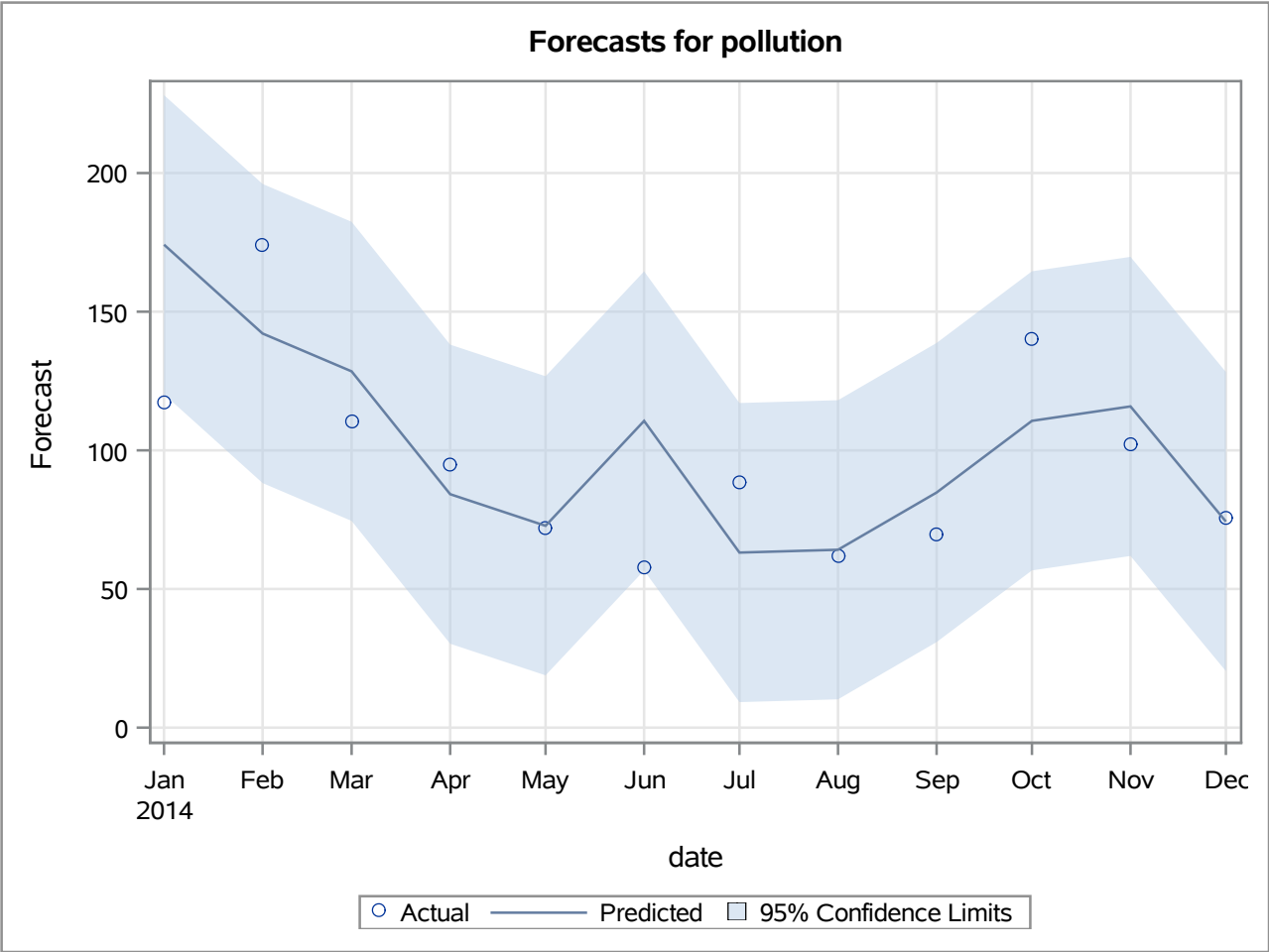
| Input Number 2 | |
|---------------------------|---------|
| Input Variable | wnd_spd |
| Period(s) of Differencing | 12 |
| Overall Regression Factor | -0.7477 |

| Input Number 3 | |
|---------------------------|----------|
| Input Variable | snow |
| Period(s) of Differencing | 12 |
| Overall Regression Factor | 2.592544 |

| Input Number 4 | |
|---------------------------|---------|
| Input Variable | rain |
| Shift | 4 |
| Period(s) of Differencing | 12 |
| Overall Regression Factor | -0.4908 |

| Forecasts for variable pollution | | | | | | |
|----------------------------------|----------|-----------|-----------------------|----------|----------|----------|
| Obs | Forecast | Std Error | 95% Confidence Limits | | Actual | Residual |
| 17 | 66.3879 | 27.5185 | 12.4527 | 120.3231 | 62.5121 | -3.8758 |
| 18 | 80.5261 | 27.5185 | 26.5909 | 134.4613 | 107.1111 | 26.5850 |
| 19 | 128.7697 | 27.5185 | 74.8345 | 182.7049 | 107.1384 | -21.6312 |
| 20 | 93.6574 | 27.5185 | 39.7222 | 147.5926 | 79.2366 | -14.4209 |
| 21 | 86.7182 | 27.5185 | 32.7830 | 140.6534 | 95.1403 | 8.4221 |
| 22 | 125.5110 | 27.5185 | 71.5758 | 179.4462 | 120.2406 | -5.2704 |
| 23 | 145.5798 | 27.5185 | 91.6446 | 199.5150 | 108.8708 | -36.7089 |
| 24 | 126.0168 | 27.5185 | 72.0816 | 179.9520 | 108.3737 | -17.6432 |
| 25 | 112.9215 | 27.5185 | 58.9864 | 166.8567 | 107.4435 | -5.4780 |
| 26 | 101.0374 | 27.5185 | 47.1022 | 154.9726 | 83.2730 | -17.7644 |

| Forecasts for variable pollution | | | | | | |
|----------------------------------|----------|-----------|--------------------------|----------|----------|----------|
| Obs | Forecast | Std Error | 95% Confidence Limits | | Actual | Residual |
| 27 | 62.7869 | 27.5185 | 8.8517 | 116.7221 | 96.3360 | 33.5491 |
| 28 | 64.6127 | 27.5185 | 10.6775 | 118.5479 | 87.3972 | 22.7845 |
| 29 | 82.7651 | 27.5185 | 28.8299 | 136.7002 | 84.7782 | 2.0132 |
| 30 | 107.9221 | 27.5185 | 53.9869 | 161.8573 | 94.9861 | -12.9360 |
| 31 | 102.3649 | 27.5185 | 48.4297 | 156.3001 | 74.6707 | -27.6942 |
| 32 | 76.3075 | 27.5185 | 22.3723 | 130.2427 | 67.7137 | -8.5938 |
| 33 | 89.7789 | 27.5185 | 35.8437 | 143.7141 | 59.5014 | -30.2775 |
| 34 | 110.8656 | 27.5185 | 56.9304 | 164.8007 | 94.3293 | -16.5363 |
| 35 | 80.3943 | 27.5185 | 26.4591 | 134.3295 | 84.8806 | 4.4863 |
| 36 | 121.5453 | 27.5185 | 67.6101 | 175.4805 | 90.1169 | -31.4284 |
| 37 | 102.1867 | 27.5185 | 48.2515 | 156.1219 | 191.9745 | 89.7878 |
| 38 | 103.1651 | 27.5185 | 49.2299 | 157.1003 | 123.6176 | 20.4524 |
| 39 | 92.7690 | 27.5185 | 38.8338 | 146.7042 | 122.2379 | 29.4689 |
| 40 | 77.1569 | 27.5185 | 23.2217 | 131.0921 | 65.6542 | -11.5027 |
| 41 | 81.5282 | 27.5185 | 27.5930 | 135.4634 | 83.1801 | 1.6519 |
| 42 | 93.9103 | 27.5185 | 39.9751 | 147.8455 | 111.1069 | 17.1967 |
| 43 | 73.6991 | 27.5185 | 19.7639 | 127.6343 | 68.3347 | -5.3645 |
| 44 | 64.9224 | 27.5185 | 10.9872 | 118.8576 | 61.1586 | -3.7638 |
| 45 | 65.4023 | 27.5185 | 11.4671 | 119.3375 | 90.3694 | 24.9671 |
| 46 | 95.1071 | 27.5185 | 41.1720 | 149.0423 | 105.5901 | 10.4829 |
| 47 | 85.9830 | 27.5185 | 32.0478 | 139.9182 | 90.7931 | 4.8100 |
| 48 | 61.4387 | 27.5185 | 7.5036 | 115.3739 | 95.8629 | 34.4242 |
| 49 | 174.1722 | 27.5185 | 120.2370 | 228.1074 | 117.4422 | -56.7300 |
| 50 | 142.1345 | 27.5185 | 88.1993 | 196.0697 | 173.8378 | 31.7033 |
| 51 | 128.4794 | 27.5185 | 74.5442 | 182.4146 | 110.3374 | -18.1420 |
| 52 | 84.1852 | 27.5185 | 30.2500 | 138.1204 | 94.8361 | 10.6509 |
| 53 | 72.7872 | 27.5185 | 18.8520 | 126.7224 | 72.0605 | -0.7267 |
| 54 | 110.6142 | 27.5185 | 56.6791 | 164.5494 | 57.6875 | -52.9267 |
| 55 | 63.1282 | 27.5185 | 9.1930 | 117.0634 | 88.6142 | 25.4861 |
| 56 | 64.1433 | 27.5185 | 10.2081 | 118.0784 | 62.0121 | -2.1312 |
| 57 | 84.7878 | 27.5185 | 30.8526 | 138.7230 | 69.8056 | -14.9823 |
| 58 | 110.6381 | 27.5185 | 56.7029 | 164.5732 | 140.3669 | 29.7289 |
| 59 | 115.8394 | 27.5185 | 61.9042 | 169.7746 | 102.3486 | -13.4908 |
| 60 | 74.3200 | 27.5185 | 20.3848 | 128.2552 | 75.6882 | 1.3682 |



| Outlier Detection Summary | |
|---------------------------|------|
| Maximum number searched | 2 |
| Number found | 2 |
| Significance used | 0.05 |

| Outlier Details | | | | |
|-----------------|----------|-----------|------------|-------------------|
| Obs | Type | Estimate | Chi-Square | Approx Prob>ChiSq |
| 37 | Additive | 73.25891 | 16.35 | <.0001 |
| 54 | Additive | -52.92675 | 4.62 | 0.0316 |