Regression Analysis: total\_lmp\_rt versus load, Average of ... wind, time

Method

|  |  |
| --- | --- |
| Categorical predictor coding | (1, 0) |

Analysis of Variance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | DF | Adj SS | Adj MS | F-Value | P-Value |
| Regression | 28 | 8067.4 | 288.121 | 5.94 | 0.000 |
| load | 1 | 420.2 | 420.159 | 8.66 | 0.004 |
| Average of Temp | 1 | 1.3 | 1.289 | 0.03 | 0.871 |
| Average of Humidity | 1 | 14.3 | 14.321 | 0.30 | 0.588 |
| Average of Precipitation | 1 | 110.6 | 110.637 | 2.28 | 0.134 |
| wind | 1 | 89.8 | 89.821 | 1.85 | 0.176 |
| time | 23 | 2868.2 | 124.704 | 2.57 | 0.001 |
| Error | 115 | 5582.3 | 48.542 |  |  |
| Total | 143 | 13649.7 |  |  |  |
|  |  |  |  |  |  |

Model Summary

|  |  |  |  |
| --- | --- | --- | --- |
| S | R-sq | R-sq(adj) | R-sq(pred) |
| 6.96718 | 59.10% | 49.15% | 36.15% |
|  |  |  |  |

Coefficients

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Term | Coef | SE Coef | T-Value | P-Value | VIF |
| Constant | -80.4 | 45.8 | -1.76 | 0.082 |  |
| load | 0.0588 | 0.0200 | 2.94 | 0.004 | 20.46 |
| Average of Temp | -0.078 | 0.477 | -0.16 | 0.871 | 34.27 |
| Average of Humidity | 0.417 | 0.767 | 0.54 | 0.588 | 81.88 |
| Average of Precipitation | -17.6 | 11.6 | -1.51 | 0.134 | 35.09 |
| wind | 0.932 | 0.685 | 1.36 | 0.176 | 14.22 |
| time |  |  |  |  |  |
| 1 | -2.89 | 4.08 | -0.71 | 0.480 | 1.97 |
| 2 | -2.28 | 4.14 | -0.55 | 0.582 | 2.03 |
| 3 | -1.96 | 4.14 | -0.47 | 0.636 | 2.03 |
| 4 | -2.39 | 4.05 | -0.59 | 0.556 | 1.94 |
| 5 | -2.84 | 4.14 | -0.69 | 0.494 | 2.03 |
| 6 | -0.54 | 5.14 | -0.11 | 0.916 | 3.13 |
| 7 | -5.95 | 6.23 | -0.95 | 0.342 | 4.60 |
| 8 | -8.97 | 6.60 | -1.36 | 0.177 | 5.16 |
| 9 | -5.14 | 6.87 | -0.75 | 0.456 | 5.59 |
| 10 | -11.23 | 6.98 | -1.61 | 0.110 | 5.77 |
| 11 | -11.36 | 6.90 | -1.64 | 0.103 | 5.65 |
| 12 | -9.60 | 6.80 | -1.41 | 0.160 | 5.47 |
| 13 | -9.38 | 6.76 | -1.39 | 0.168 | 5.41 |
| 14 | -12.80 | 6.52 | -1.96 | 0.052 | 5.03 |
| 15 | -12.45 | 6.26 | -1.99 | 0.049 | 4.65 |
| 16 | -4.43 | 6.30 | -0.70 | 0.483 | 4.69 |
| 17 | 9.74 | 6.74 | 1.44 | 0.151 | 5.38 |
| 18 | -7.96 | 7.04 | -1.13 | 0.261 | 5.87 |
| 19 | -5.48 | 7.08 | -0.77 | 0.440 | 5.93 |
| 20 | -3.18 | 6.74 | -0.47 | 0.638 | 5.37 |
| 21 | -7.72 | 6.01 | -1.28 | 0.201 | 4.27 |
| 22 | -8.23 | 4.99 | -1.65 | 0.102 | 2.95 |
| 23 | -5.10 | 4.30 | -1.19 | 0.238 | 2.19 |

Regression Equation

|  |  |  |  |
| --- | --- | --- | --- |
| time |  |  |  |
| 0 | total\_lmp\_rt | = | -80.4 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 1 | total\_lmp\_rt | = | -83.3 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 2 | total\_lmp\_rt | = | -82.7 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 3 | total\_lmp\_rt | = | -82.4 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 4 | total\_lmp\_rt | = | -82.8 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 5 | total\_lmp\_rt | = | -83.2 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 6 | total\_lmp\_rt | = | -81.0 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 7 | total\_lmp\_rt | = | -86.4 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 8 | total\_lmp\_rt | = | -89.4 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 9 | total\_lmp\_rt | = | -85.5 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 10 | total\_lmp\_rt | = | -91.6 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 11 | total\_lmp\_rt | = | -91.8 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 12 | total\_lmp\_rt | = | -90.0 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 13 | total\_lmp\_rt | = | -89.8 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 14 | total\_lmp\_rt | = | -93.2 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 15 | total\_lmp\_rt | = | -92.9 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 16 | total\_lmp\_rt | = | -84.8 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 17 | total\_lmp\_rt | = | -70.7 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 18 | total\_lmp\_rt | = | -88.4 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 19 | total\_lmp\_rt | = | -85.9 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 20 | total\_lmp\_rt | = | -83.6 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 21 | total\_lmp\_rt | = | -88.1 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 22 | total\_lmp\_rt | = | -88.6 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |
|  |  |  |  |
| 23 | total\_lmp\_rt | = | -85.5 + 0.0588 load - 0.078 Average of Temp + 0.417 Average of Humidity - 17.6 Average of Precipitation + 0.932 wind |

Fits and Diagnostics for Unusual Observations

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Obs | total\_lmp\_rt | Fit | Resid | Std Resid |  |
| 17 | 52.74 | 37.17 | 15.57 | 2.49 | R |
| 18 | 80.03 | 53.09 | 26.94 | 4.31 | R |
| 25 | 48.33 | 27.15 | 21.18 | 3.40 | R |
| 42 | 71.45 | 55.17 | 16.27 | 2.62 | R |
| 69 | 58.36 | 43.96 | 14.40 | 2.30 | R |
| 80 | 58.11 | 40.53 | 17.59 | 2.84 | R |
| 90 | 36.95 | 55.64 | -18.69 | -2.99 | R |
| 114 | 32.34 | 47.52 | -15.18 | -2.44 | R |
| 130 | 59.02 | 38.62 | 20.39 | 3.28 | R |
| 142 | 51.78 | 36.22 | 15.56 | 2.48 | R |

*R  Large residual*