

Table S3: F test results to determine if the variances of pre-mine and post-mine log10 transformed discharge populations are different and the null hypothesis, H₀, can be rejected. Three effects to variance are observed; 1.) decrease suggests the post-mine log10 discharge variance is less than the pre-mine log10 discharge variance, 2.) increase suggests the post-mine log10 discharge variance is greater than the pre-mine log10 discharge variance and 3.) no change. Data compared to published critical values of F distribution at alpha = 0.05 and 0.01 and fit to a two-tailed test.

| Site ID | s1 | n1 | s2 | n2 | F | critical value (α/2) | | critical value (α/2) | | Decision | Effect to Variance |
|---------|------|-----|------|-----|------|----------------------|------|----------------------|------|-----------------------------------|--------------------|
| 1 | 0.85 | 62 | 0.8 | 90 | 1.13 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 2 | 1.27 | 73 | 1.33 | 79 | 1.10 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 3 | 1.05 | 40 | 1 | 80 | 1.10 | 0.025 | 1.82 | 0.005 | 2.19 | accept H ₀ | No change |
| 4 | 1.22 | 71 | 0.66 | 93 | 3.42 | 0.025 | 1.67 | 0.005 | 1.96 | reject H ₀ at α = 0.01 | Decrease |
| 5 | 1.17 | 67 | 1.45 | 94 | 1.54 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 6 | 0.91 | 116 | 1.01 | 117 | 1.23 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 7 | 1.05 | 43 | 1.38 | 35 | 1.73 | 0.025 | 1.94 | 0.005 | 2.40 | accept H ₀ | No change |
| 8 | 0.75 | 44 | 0.92 | 38 | 1.50 | 0.025 | 1.94 | 0.005 | 2.40 | accept H ₀ | No change |
| 9 | 0.36 | 10 | 0.4 | 15 | 1.23 | 0.025 | 3.87 | 0.005 | 6.23 | accept H ₀ | No change |
| 10 | 1.3 | 51 | 1.41 | 109 | 1.18 | 0.025 | 1.80 | 0.005 | 2.18 | accept H ₀ | No change |
| 11 | 1.08 | 62 | 1.34 | 114 | 1.54 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 12 | 1.05 | 48 | 1.11 | 115 | 1.12 | 0.025 | 1.80 | 0.005 | 2.18 | accept H ₀ | No change |
| 13 | 0.83 | 45 | 1.01 | 111 | 1.48 | 0.025 | 1.80 | 0.005 | 2.18 | accept H ₀ | No change |
| 14 | 1.93 | 82 | 1.24 | 91 | 2.42 | 0.025 | 1.67 | 0.005 | 1.96 | reject H ₀ at α = 0.01 | Decrease |
| 15 | 1.39 | 82 | 1.01 | 105 | 1.89 | 0.025 | 1.67 | 0.005 | 1.96 | reject H ₀ at α = 0.05 | Decrease |
| 16 | 1.08 | 147 | 0.55 | 31 | 3.86 | 0.025 | 1.87 | 0.005 | 2.30 | reject H ₀ at α = 0.01 | Decrease |
| 17 | 0.98 | 101 | 0.63 | 39 | 2.42 | 0.025 | 1.94 | 0.005 | 2.42 | reject H ₀ at α = 0.01 | Decrease |
| 18 | 1.5 | 131 | 0.67 | 36 | 5.01 | 0.025 | 1.87 | 0.005 | 2.30 | reject H ₀ at α = 0.01 | Decrease |
| 19 | 1.37 | 114 | 1.01 | 71 | 1.84 | 0.025 | 1.67 | 0.005 | 1.96 | reject H ₀ at α = 0.05 | Decrease |
| 20 | 1.14 | 89 | 0.63 | 66 | 3.27 | 0.025 | 1.67 | 0.005 | 1.96 | reject H ₀ at α = 0.01 | Decrease |
| 21 | 0.6 | 62 | 0.48 | 68 | 1.56 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 22 | 1.09 | 48 | 0.62 | 67 | 3.09 | 0.025 | 1.74 | 0.005 | 2.08 | reject H ₀ at α = 0.01 | Decrease |
| 23 | 1.27 | 257 | 0.51 | 72 | 6.20 | 0.025 | 1.58 | 0.005 | 1.83 | reject H ₀ at α = 0.01 | Decrease |
| 24 | 1.12 | 118 | 0.98 | 76 | 1.31 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 25 | 0.95 | 83 | 0.86 | 58 | 1.22 | 0.025 | 1.80 | 0.005 | 2.18 | accept H ₀ | No change |
| 26 | 0.67 | 112 | 0.82 | 57 | 1.50 | 0.025 | 1.74 | 0.005 | 2.08 | accept H ₀ | No change |
| 27 | 1.47 | 85 | 1.34 | 32 | 1.20 | 0.025 | 1.94 | 0.005 | 2.42 | accept H ₀ | No change |
| 28 | 0.92 | 88 | 0.76 | 32 | 1.47 | 0.025 | 1.94 | 0.005 | 2.42 | accept H ₀ | No change |
| 29 | 0.86 | 56 | 0.69 | 62 | 1.55 | 0.025 | 1.74 | 0.005 | 2.08 | accept H ₀ | No change |
| 30 | 0.78 | 111 | 0.48 | 36 | 2.64 | 0.025 | 1.94 | 0.005 | 2.42 | reject H ₀ at α = 0.01 | Decrease |
| 31 | 0.81 | 35 | 1.11 | 100 | 1.88 | 0.025 | 1.94 | 0.005 | 2.42 | accept H ₀ | No change |
| 32 | 0.69 | 40 | 0.6 | 104 | 1.32 | 0.025 | 1.82 | 0.005 | 2.19 | accept H ₀ | No change |
| 33 | 0.79 | 97 | 0.85 | 64 | 1.16 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 34 | 0.83 | 130 | 0.6 | 64 | 1.91 | 0.025 | 1.58 | 0.005 | 1.83 | reject H ₀ at α = 0.01 | Decrease |
| 35 | 0.96 | 188 | 1 | 85 | 1.09 | 0.025 | 1.53 | 0.005 | 1.75 | accept H ₀ | No change |
| 36 | 1.07 | 49 | 0.61 | 79 | 3.08 | 0.025 | 1.74 | 0.005 | 2.08 | reject H ₀ at α = 0.01 | Decrease |
| 37 | 0.95 | 61 | 0.86 | 72 | 1.22 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 38 | 1.05 | 99 | 1.07 | 70 | 1.04 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 39 | 0.96 | 56 | 0.76 | 59 | 1.60 | 0.025 | 1.88 | 0.005 | 2.30 | accept H ₀ | No change |
| 40 | 0.92 | 55 | 0.63 | 48 | 2.13 | 0.025 | 1.88 | 0.005 | 2.30 | reject H ₀ at α = 0.05 | Decrease |
| 41 | 0.79 | 103 | 0.71 | 34 | 1.24 | 0.025 | 1.94 | 0.005 | 2.42 | accept H ₀ | No change |
| 42 | 1 | 39 | 0.63 | 31 | 2.52 | 0.025 | 2.07 | 0.005 | 2.63 | reject H ₀ at α = 0.05 | Decrease |
| 43 | 1.15 | 109 | 0.78 | 48 | 2.17 | 0.025 | 1.80 | 0.005 | 2.18 | reject H ₀ at α = 0.05 | Decrease |
| 44 | 1.03 | 108 | 1.11 | 56 | 1.16 | 0.025 | 1.74 | 0.005 | 2.08 | accept H ₀ | No change |
| 45 | 1.17 | 128 | 1.08 | 55 | 1.17 | 0.025 | 1.72 | 0.005 | 2.06 | accept H ₀ | No change |
| 46 | 0.86 | 39 | 0.92 | 40 | 1.14 | 0.025 | 2.07 | 0.005 | 2.63 | accept H ₀ | No change |
| 47 | 0.84 | 39 | 1.12 | 37 | 1.78 | 0.025 | 2.07 | 0.005 | 2.63 | accept H ₀ | No change |
| 48 | 0.82 | 31 | 0.57 | 34 | 2.07 | 0.025 | 2.07 | 0.005 | 2.63 | reject H ₀ at α = 0.05 | Decrease |
| 49 | 0.75 | 30 | 0.55 | 38 | 1.86 | 0.025 | 2.14 | 0.005 | 2.73 | accept H ₀ | No change |
| 50 | 1.5 | 104 | 1.37 | 52 | 1.20 | 0.025 | 1.80 | 0.005 | 2.18 | accept H ₀ | No change |
| 51 | 0.69 | 146 | 1.46 | 81 | 4.48 | 0.025 | 1.53 | 0.005 | 1.75 | reject H ₀ at α = 0.01 | Increase |
| 52 | 0.85 | 114 | 1.04 | 81 | 1.50 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 53 | 0.76 | 47 | 0.99 | 74 | 1.70 | 0.025 | 1.80 | 0.005 | 1.96 | accept H ₀ | No change |
| 54 | 0.78 | 52 | 0.72 | 72 | 1.17 | 0.025 | 1.74 | 0.005 | 2.08 | accept H ₀ | No change |
| 55 | 1.02 | 61 | 0.92 | 66 | 1.23 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 56 | 0.91 | 61 | 1.15 | 74 | 1.60 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 57 | 0.62 | 48 | 1.06 | 77 | 2.92 | 0.025 | 1.80 | 0.005 | 2.18 | reject H ₀ at α = 0.01 | Increase |
| 58 | 1.17 | 23 | 0.85 | 39 | 1.89 | 0.025 | 2.20 | 0.005 | 2.82 | accept H ₀ | No change |
| 59 | 1.3 | 41 | 0.56 | 40 | 5.39 | 0.025 | 2.01 | 0.005 | 2.52 | reject H ₀ at α = 0.01 | Decrease |
| 60 | 0.99 | 30 | 1.28 | 45 | 1.67 | 0.025 | 2.03 | 0.005 | 2.56 | accept H ₀ | No change |
| 61 | 1.43 | 75 | 1.36 | 142 | 1.11 | 0.025 | 1.53 | 0.005 | 1.75 | accept H ₀ | No change |
| 62 | 0.86 | 49 | 0.95 | 81 | 1.22 | 0.025 | 1.80 | 0.005 | 2.18 | accept H ₀ | No change |
| 63 | 0.74 | 45 | 0.55 | 106 | 1.81 | 0.025 | 1.74 | 0.005 | 2.08 | reject H ₀ at α = 0.05 | Decrease |
| 64 | 0.7 | 29 | 1.09 | 70 | 2.42 | 0.025 | 1.96 | 0.005 | 2.45 | reject H ₀ at α = 0.05 | Increase |
| 65 | 1.26 | 32 | 0.77 | 63 | 2.68 | 0.025 | 1.82 | 0.005 | 2.19 | reject H ₀ at α = 0.01 | Decrease |
| 66 | 0.81 | 39 | 0 | 64 | | | | | | | Decrease |
| 67 | 1.18 | 95 | 1.2 | 127 | 1.03 | 0.025 | 1.58 | 0.005 | 1.83 | accept H ₀ | No change |
| 68 | 1.09 | 29 | 0.91 | 57 | 1.43 | 0.025 | 2.01 | 0.005 | 2.50 | accept H ₀ | No change |
| 69 | 0.76 | 19 | 0.76 | 51 | 1.00 | 0.025 | 2.33 | 0.005 | 3.11 | accept H ₀ | No change |
| 70 | 1.01 | 60 | 0.64 | 46 | 2.49 | 0.025 | 1.88 | 0.005 | 2.30 | reject H ₀ at α = 0.01 | Decrease |
| 71 | 0.88 | 100 | 0.73 | 61 | 1.45 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 72 | 0.91 | 77 | 0.72 | 62 | 1.60 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 73 | 1.01 | 53 | 0.63 | 54 | 2.57 | 0.025 | 1.88 | 0.005 | 2.30 | reject H ₀ at α = 0.01 | Decrease |
| 74 | 1.04 | 114 | 0.55 | 45 | 3.58 | 0.025 | 1.80 | 0.005 | 2.18 | reject H ₀ at α = 0.01 | Decrease |
| 75 | 0.94 | 137 | 0.68 | 60 | 1.91 | 0.025 | 1.72 | 0.005 | 2.06 | reject H ₀ at α = 0.05 | Decrease |
| 76 | 0.78 | 118 | 0.67 | 60 | 1.36 | 0.025 | 1.80 | 0.005 | 2.18 | accept H ₀ | No change |
| 77 | 0.92 | 117 | 0.6 | 55 | 2.35 | 0.025 | 1.80 | 0.005 | 2.18 | reject H ₀ at α = 0.01 | Decrease |
| 78 | 0.92 | 53 | 0.59 | 59 | 2.43 | 0.025 | 1.88 | 0.005 | 2.30 | reject H ₀ at α = 0.05 | Decrease |
| 79 | 0.67 | 84 | 0.74 | 65 | 1.22 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 80 | 1.27 | 88 | 1.13 | 99 | 1.26 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |
| 81 | 1.11 | 94 | 0.57 | 124 | 3.79 | 0.025 | 1.53 | 0.005 | 1.75 | reject H ₀ at α = 0.01 | Decrease |
| 82 | 0.54 | 27 | 1.16 | 22 | 4.61 | 0.025 | 2.25 | 0.005 | 2.93 | reject H ₀ at α = 0.01 | Increase |
| 83 | 0.57 | 27 | 1.1 | 36 | 3.72 | 0.025 | 2.13 | 0.005 | 2.73 | reject H ₀ at α = 0.01 | Increase |
| 84 | 0.6 | 51 | 0.56 | 36 | 1.15 | 0.025 | 2.01 | 0.005 | 2.52 | accept H ₀ | No change |
| 85 | 0.67 | 16 | 0.49 | 37 | 1.87 | 0.025 | 2.31 | 0.005 | 3.01 | accept H ₀ | No change |
| 86 | 1.14 | 86 | 1.46 | 43 | 1.64 | 0.025 | 1.74 | 0.005 | 2.08 | accept H ₀ | No change |
| 87 | 1.04 | 153 | 1.4 | 41 | 1.81 | 0.025 | 1.61 | 0.005 | 1.87 | reject H ₀ at α = 0.05 | Increase |
| 88 | 1.25 | 84 | 1.29 | 70 | 1.07 | 0.025 | 1.67 | 0.005 | 1.96 | accept H ₀ | No change |