

MAL-5A

**American Society of Brewing Chemists**  
**MALT CHECK SERVICE**

5/31/2017

| <i>Sub #</i> | <i>Moisture (%)</i> | <i>% Extract - Fine Ground (D.B.)</i> | <i>% Extract - Coarse Ground (D.B.)</i> | <i>% Fine - Coarse Difference</i> | <i>Conversion Time (min)</i> | <i>Clarity of Wort (visual)</i> | <i>Color of Wort, 1/2" cell (ASBC)</i> | <i>Diastatic Power, Salt Ext. (Deg.)</i> | <i>Alpha-amylase, Salt Ext.</i> | <i>Soluble Protein</i> | <i>Total Malt Protein</i> | <i>Soluble/Total Protein (D.B.)</i> |
|--------------|---------------------|---------------------------------------|-----------------------------------------|-----------------------------------|------------------------------|---------------------------------|----------------------------------------|------------------------------------------|---------------------------------|------------------------|---------------------------|-------------------------------------|
| B 18         | 4.2                 | 78.9                                  | 78.0                                    | 0.9                               | <5                           | LIGHTLY HAZ                     | 1.96                                   |                                          |                                 | 6.01                   | 12.6                      | 47.8                                |
| B 25         | 4.2                 | 79.5                                  | 78.8                                    | 0.7                               |                              |                                 | 2.12                                   | 192                                      | 67.0                            | 6.08                   | 12.7                      | 48.0                                |
| B 27         | 3.7                 | 79.5                                  | 78.6                                    | 0.9                               |                              | LIGHTLY HAZ                     | 2.80                                   | * 272                                    | 71.2                            | 5.55                   | 13.1                      | 42.2                                |
| B 30         | 4.0                 | 79.6                                  | 78.9                                    | 0.5                               |                              |                                 | 1.96                                   | 193                                      | 70.9                            | 5.80                   | 12.3                      | 47.1                                |
| B 31         | 4.1                 |                                       |                                         |                                   |                              | RY SLIGH HA                     | 2.03                                   |                                          |                                 | 6.24                   | 12.8                      | 48.8                                |
| B 42         | 4.0                 | 79.8                                  | 79.2                                    | 0.6                               |                              |                                 | 2.43                                   | 184                                      | * 94.9                          | 5.87                   | 13.1                      | 44.8                                |
| B 43         | 4.0                 | 79.6                                  | 78.5                                    | 1.1                               | 5                            | HAZY                            | 1.82                                   | 192                                      | 60.2                            | 6.02                   | 12.6                      | 47.8                                |
| B 54         | 3.6                 | 79.9                                  | 78.7                                    | 1.1                               | 5                            | HAZY                            | 1.77                                   | 201                                      | 69.3                            | 6.14                   | 12.6                      | 48.7                                |
| B 55         | 4.0                 | 79.6                                  | 78.8                                    | 0.8                               |                              |                                 | 1.99                                   | 199                                      | 79.5                            | 5.66                   | 12.3                      | 46.0                                |
| B 109        | 4.3                 | 80.0                                  |                                         |                                   |                              |                                 | 2.37                                   | 193                                      | 74.9                            | 6.42                   | 13.0                      | 49.5                                |
| B 129        | 4.0                 | 80.0                                  | 79.0                                    | 1.0                               | 5                            | LIGHTLY HAZ                     | 1.79                                   | 198                                      | 65.1                            | 6.09                   | 12.9                      | 48.0                                |
| B 152        | 4.0                 | 79.6                                  | 78.5                                    | 1.1                               |                              | CLEAR                           | 1.82                                   | 218                                      | 68.1                            | 6.45                   | 13.1                      | 49.2                                |
| B 168        | * 5.4               | 80.4                                  | 79.4                                    | 1.0                               |                              | CLEAR                           | 2.30                                   |                                          |                                 |                        |                           |                                     |
| B 169        | 3.8                 | 79.0                                  | 78.1                                    | 0.9                               | 5                            | BRIGHT                          | 1.76                                   | 181                                      | 62.3                            | 5.73                   | 12.8                      | 44.9                                |
| B 180        | 4.0                 | 80.2                                  | 79.1                                    | 1.1                               | 5                            | HAZY                            | 1.85                                   | 190                                      | 68.5                            | 6.11                   | 12.8                      | 47.8                                |
| B 189        | 4.0                 | 80.4                                  | 79.3                                    | 1.1                               | 5                            | HAZY                            | 1.82                                   | 218                                      | 71.8                            | 5.86                   | 12.5                      | 46.8                                |
| B 208        | 4.1                 | 79.5                                  |                                         |                                   |                              | CLEAR                           | 2.55                                   | 208                                      | 72.7                            | 5.87                   | 13.0                      | 45.2                                |
| B 213        | 3.8                 | 79.1                                  | 78.3                                    | 0.8                               |                              |                                 | 1.76                                   | 217                                      | 75.5                            | 6.25                   | 12.5                      | 50.0                                |
| B 218        | 3.9                 | 79.4                                  | 77.5                                    | * 1.9                             | 10                           | OPALESCENT                      | 1.90                                   | 178                                      | 72.0                            | * 13.10                | * 6.1                     | 47.0                                |
| <b>N</b>     | <b>18</b>           | <b>18</b>                             | <b>16</b>                               | <b>15</b>                         |                              |                                 | <b>19</b>                              | <b>15</b>                                | <b>15</b>                       | <b>17</b>              | <b>17</b>                 | <b>18</b>                           |
| <b>Mean</b>  | <b>4.0</b>          | <b>79.7</b>                           | <b>78.7</b>                             | <b>0.9</b>                        |                              |                                 | <b>2.04</b>                            | <b>197.4</b>                             | <b>69.9</b>                     | <b>6.01</b>            | <b>12.7</b>               | <b>47.2</b>                         |
| <b>Min</b>   | <b>3.6</b>          | <b>78.9</b>                           | <b>77.5</b>                             | <b>0.5</b>                        |                              |                                 | <b>1.76</b>                            | <b>178</b>                               | <b>60.2</b>                     | <b>5.55</b>            | <b>12.3</b>               | <b>42.2</b>                         |
| <b>Max</b>   | <b>4.3</b>          | <b>80.4</b>                           | <b>79.4</b>                             | <b>1.1</b>                        |                              |                                 | <b>2.80</b>                            | <b>218</b>                               | <b>79.5</b>                     | <b>6.45</b>            | <b>13.1</b>               | <b>50.0</b>                         |
| <b>Std</b>   | <b>0.2</b>          | <b>0.4</b>                            | <b>0.5</b>                              | <b>0.2</b>                        |                              |                                 | <b>0.31</b>                            | <b>12.9</b>                              | <b>5.0</b>                      | <b>0.25</b>            | <b>0.3</b>                | <b>2.0</b>                          |

\* Not Included in Mean

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| Sub # | Growth of Acrospires |         |         |       |           | Screen Assortment |          |          |            | FAN<br>(ppm) | Absolute<br>Viscosity | Turbidity<br>(NTU) | Beta Glucan<br>wort (mg/L) |
|-------|----------------------|---------|---------|-------|-----------|-------------------|----------|----------|------------|--------------|-----------------------|--------------------|----------------------------|
|       | 0-1/4                | 1/4-1/2 | 1/2-3/4 | 3/4-1 | Overgrown | On 7/64"          | On 6/64" | On 5/64" | Thru 5/64" |              |                       |                    |                            |
| B 18  |                      |         |         |       |           |                   |          |          |            | 247.0        | 1.47                  |                    |                            |
| B 25  | 1                    | 3       | 8       | 55    | 33        | 68.1              | 26.9     | 3.6      | 1.5        | 249.0        | 1.47                  | 13.0               | 110                        |
| B 27  |                      |         |         |       |           | 63.0              | 31.9     | 3.6      | 1.5        | 230.0        | 1.51                  | 17.7               | * 178                      |
| B 30  | 0                    | 1       | 2       | 82    | 15        | 70.5              | 24.7     | 3.9      | 0.9        | 260.0        | 1.46                  | 13.2               | 109                        |
| B 31  |                      |         |         |       |           |                   |          |          |            |              |                       | 16.0               | 143                        |
| B 42  |                      |         |         |       |           |                   |          |          |            | 263.0        | 1.48                  |                    | 110                        |
| B 43  | 1                    | 2       | 6       | 86    | 5         | 71.0              | 24.6     | 3.7      | 0.7        | 256.0        | 1.47                  | 14.7               | 89                         |
| B 54  |                      |         |         |       |           | 63.4              | 29.3     | 6.0      | 1.3        | 257.0        | 1.47                  | 13.9               | 101                        |
| B 55  |                      |         |         |       |           |                   |          |          |            | 252.0        | 1.48                  |                    | 71                         |
| B 109 | 0                    | 4       | 14      | 38    | 44        | 69.5              | 25.9     | 3.4      | 1.2        | 293.0        | 1.47                  | 21.5               | 112                        |
| B 129 | 0                    | 2       | 5       | 81    | 12        | 64.6              | 28.9     | 5.2      | 1.3        | 293.0        | 1.49                  | 14.8               | 114                        |
| B 152 |                      |         |         |       |           | 61.9              | 31.6     | 5.5      | 0.9        | 279.0        |                       | 15.2               | 106                        |
| B 168 |                      |         |         |       |           |                   |          |          |            | 231.0        | 1.48                  | 21.0               | 136                        |
| B 169 | 1                    | 2       | 2       | 85    | 10        | 62.0              | 31.9     | 3.0      | 1.7        |              | 1.50                  | 19.5               | 96                         |
| B 180 | 0                    | 3       | 7       | 75    | 15        | 65.4              | 28.4     | 4.6      | 1.6        | 293.0        | 1.48                  | 14.3               | 85                         |
| B 189 |                      |         |         |       |           | 69.9              | 25.4     | 4.2      | 0.5        | 254.0        | 1.49                  | 15.1               | 98                         |
| B 208 |                      |         |         |       |           | 68.1              | 27.4     | 3.5      | 1.0        | 264.0        |                       |                    | 102                        |
| B 213 |                      |         |         |       |           | 63.0              | 30.8     | 5.2      | 1.0        | 265.0        |                       | 14.0               | 102                        |
| B 218 |                      |         |         |       |           |                   |          |          |            | 256.0        | 1.46                  | 10.9               | 101                        |
| N     | 7                    | 7       | 7       | 7     | 7         | 13                | 13       | 13       | 13         | 17           | 15                    | 15                 | 17                         |
| Mean  | 0.4                  | 2.4     | 6.3     | 71.7  | 19.1      | 66.2              | 28.3     | 4.3      | 1.2        | 261.3        | 1.48                  | 15.7               | 104.9                      |
| Min   | 0.0                  | 1.0     | 2.0     | 38.0  | 5.0       | 61.9              | 24.6     | 3.0      | 0.5        | 230.0        | 1.46                  | 10.9               | 71.0                       |
| Max   | 1.0                  | 4.0     | 14.0    | 86.0  | 44.0      | 71.0              | 31.9     | 6.0      | 1.7        | 293.0        | 1.51                  | 21.5               | 143.0                      |
| Std   | 0.5                  | 1.0     | 4.1     | 18.3  | 14.0      | 3.4               | 2.7      | 0.9      | 0.4        | 19.1         | 0.01                  | 3.0                | 16.9                       |

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