

# Hemp Proficiency Testing

## Summary Statistics



Samples: HMNOV18-1 and HMNOV18-2

Issue Date: 1/4/2019

### By Analyte

#### HM18NOV-1 (hemp)

| Analyte          | Code | Trueness |    |           |      | Horwitz<br>%RSD | Precision |    |           |
|------------------|------|----------|----|-----------|------|-----------------|-----------|----|-----------|
|                  |      | Rob Mean | n  | Rob StDev | %RSD |                 | Rob Mean  | n  | Rob StDev |
| Δ9-THC (%)       | 001  | 0.1367   | 28 | 0.0287    | 21   | 5.38            | 6.05      | 28 | 4.08      |
| Δ9-THCA (%)      | 002  | 0.1046   | 26 | 0.0265    | 25.4 | 5.6             | 8.35      | 26 | 7.07      |
| CBD (%)          | 003  | 1.4495   | 28 | 0.1706    | 11.8 | 3.77            | 4.3       | 28 | 2.89      |
| CBDA (%)         | 004  | 4.1433   | 25 | 0.6246    | 15.1 | 3.22            | 4.52      | 25 | 3.1       |
| CBN (%)          | 005  | 0.0502   | 14 | 0.0543    | 108  | 6.25            | 7.83      | 12 | 6.98      |
| Total Δ9-THC (%) | 006  | 0.2233   | 37 | 0.0406    | 18.2 | 5               | 7.88      | 37 | 5.56      |
| Total CBD (%)    | 007  | 4.9892   | 34 | 0.8028    | 16.1 | 3.14            | 4.99      | 34 | 3.36      |
| Moisture (%)     | 500  | 8.9931   | 9  | 0.9203    | 10.2 | 2.87            | 3.81      | 7  | 3.51      |

#### HM18NOV-2 (hemp)

| Analyte     | Code | Trueness |    |           |      | Horwitz<br>%RSD | Precision |    |           |
|-------------|------|----------|----|-----------|------|-----------------|-----------|----|-----------|
|             |      | Rob Mean | n  | Rob StDev | %RSD |                 | Rob Mean  | n  | Rob StDev |
| Δ9-THC (%)  | 001  | 0.1949   | 29 | 0.0339    | 17.4 | 5.1             | 5.22      | 29 | 3.99      |
| Δ9-THCA (%) | 002  | 0.1747   | 28 | 0.0452    | 25.9 | 5.18            | 6.07      | 27 | 5.92      |

|                  |     |        |    |        |      |      |      |    |      |
|------------------|-----|--------|----|--------|------|------|------|----|------|
| CBD (%)          | 003 | 1.9769 | 28 | 0.2184 | 11   | 3.6  | 3.53 | 28 | 2.35 |
| CBDA (%)         | 004 | 6.4068 | 25 | 0.9058 | 14.1 | 3.02 | 2.81 | 25 | 1.87 |
| CBN (%)          | 005 | 0.0663 | 16 | 0.0734 | 111  | 6    | 8.05 | 13 | 7.59 |
| Total Δ9-THC (%) | 006 | 0.3335 | 38 | 0.0614 | 18.4 | 4.71 | 5.35 | 38 | 4.03 |
| Total CBD (%)    | 007 | 7.4384 | 34 | 1.0813 | 14.5 | 2.95 | 3.49 | 34 | 2.21 |
| Moisture (%)     | 500 | 8.712  | 9  | 1.593  | 18.3 | 2.88 | 2.86 | 7  | 2.29 |

### By Method Group

#### HM18NOV-1 (hemp)

| Analyte          | Code | Trueness |    |           |      | Horwitz<br>%RSD | Precision |    |           |
|------------------|------|----------|----|-----------|------|-----------------|-----------|----|-----------|
|                  |      | Rob Mean | n  | Rob StDev | %RSD |                 | Rob Mean  | n  | Rob StDev |
| Δ9-THC (%)       | LC   | 0.1336   | 24 | 0.0275    | 20.6 | 5.4             | 6.71      | 24 | 4.88      |
| Δ9-THCA (%)      | LC   | 0.1066   | 23 | 0.0271    | 25.5 | 5.58            | 9.05      | 23 | 7.65      |
| CBD (%)          | LC   | 1.4498   | 25 | 0.197     | 13.6 | 3.77            | 4.44      | 25 | 3.08      |
| CBDA (%)         | LC   | 4.1895   | 22 | 0.6357    | 15.2 | 3.22            | 4.78      | 22 | 3.24      |
| CBN (%)          | LC   | 0.041    | 8  | 0.0557    | 136  | 6.44            | 7.42      | 7  | 6.65      |
| Total Δ9-THC (%) | GC   | 0.2128   | 11 | 0.0367    | 17.2 | 5.03            | 8.55      | 11 | 5.96      |
| Total Δ9-THC (%) | LC   | 0.2281   | 23 | 0.0459    | 20.1 | 4.98            | 8.36      | 23 | 5.77      |
| Total CBD (%)    | GC   | 4.6224   | 9  | 1.2781    | 27.6 | 3.17            | 8.85      | 9  | 7.1       |
| Total CBD (%)    | LC   | 5.1028   | 22 | 0.7768    | 15.2 | 3.13            | 4.56      | 22 | 3.07      |

**HM18NOV-2 (hemp)**

| Analyte          | Code | Trueness |    |           |      | Horwitz<br>%RSD | Precision |    |           |
|------------------|------|----------|----|-----------|------|-----------------|-----------|----|-----------|
|                  |      | Rob Mean | n  | Rob StDev | %RSD |                 | Rob Mean  | n  | Rob StDev |
| Δ9-THC (%)       | LC   | 0.1895   | 25 | 0.0313    | 16.5 | 5.12            | 5.67      | 25 | 4.34      |
| Δ9-THCA (%)      | LC   | 0.1791   | 25 | 0.0463    | 25.9 | 5.17            | 6.76      | 24 | 6.32      |
| CBD (%)          | LC   | 1.9791   | 25 | 0.236     | 11.9 | 3.6             | 3.78      | 25 | 2.49      |
| CBDA (%)         | LC   | 6.4725   | 22 | 0.9015    | 13.9 | 3.02            | 3.04      | 22 | 1.94      |
| CBN (%)          | LC   | 0.057    | 8  | 0.0874    | 153  | 6.13            | 4.89      | 7  | 4.32      |
| Total Δ9-THC (%) | GC   | 0.3068   | 11 | 0.0701    | 22.9 | 4.76            | 5.46      | 11 | 4.67      |
| Total Δ9-THC (%) | LC   | 0.3438   | 24 | 0.0644    | 18.7 | 4.68            | 5.85      | 24 | 4.3       |
| Total CBD (%)    | GC   | 6.6178   | 9  | 2.1745    | 32.9 | 3.01            | 5.66      | 9  | 3.04      |
| Total CBD (%)    | LC   | 7.6172   | 22 | 1.0481    | 13.8 | 2.94            | 3.09      | 22 | 1.84      |

**By Method****HM18NOV-1 (hemp)**

| Analyte          | Code   |            | Trueness |    |           |      | Horwitz<br>%RSD | Precision |    |           |
|------------------|--------|------------|----------|----|-----------|------|-----------------|-----------|----|-----------|
|                  |        |            | Rob Mean | n  | Rob StDev | %RSD |                 | Rob Mean  | n  | Rob StDev |
| Δ9-THC (%)       | 001.10 | HPLC-UVVIS | 0.1312   | 19 | 0.0321    | 24.5 | 5.41            | 7.31      | 19 | 6.58      |
| Δ9-THCA (%)      | 002.10 | HPLC-UVVIS | 0.1083   | 18 | 0.0319    | 29.5 | 5.57            | 9.67      | 18 | 8.32      |
| CBD (%)          | 003.10 | HPLC-UVVIS | 1.4745   | 20 | 0.2131    | 14.5 | 3.76            | 4.3       | 20 | 3.19      |
| CBDA (%)         | 004.10 | HPLC-UVVIS | 4.2485   | 18 | 0.6955    | 16.4 | 3.21            | 4.19      | 18 | 2.87      |
| Total Δ9-THC (%) | 006.10 | HPLC-UVVIS | 0.2249   | 18 | 0.0519    | 23.1 | 4.99            | 9.47      | 18 | 6.95      |
| Total Δ9-THC (%) | 006.40 | GC-FID     | 0.2067   | 9  | 0.0423    | 20.4 | 5.05            | 8.2       | 9  | 6.71      |
| Total CBD (%)    | 007.10 | HPLC-UVVIS | 5.1417   | 18 | 0.8971    | 17.4 | 3.12            | 4.17      | 18 | 2.92      |

|               |        |        |        |   |        |      |      |      |   |      |
|---------------|--------|--------|--------|---|--------|------|------|------|---|------|
| Total CBD (%) | 007.40 | GC-FID | 4.7839 | 7 | 1.2082 | 25.3 | 3.16 | 8.61 | 7 | 8.05 |
| Moisture (%)  | 500.10 | Oven   | 8.9987 | 8 | 1.0266 | 11.4 | 2.87 | 4.29 | 6 | 4.6  |

**HM18NOV-2 (hemp)**

| Analyte          | Code   |            | Trueness |    |           |      | Horwitz<br>%RSD | Precision |    |           |
|------------------|--------|------------|----------|----|-----------|------|-----------------|-----------|----|-----------|
|                  |        |            | Rob Mean | n  | Rob StDev | %RSD |                 | Rob Mean  | n  | Rob StDev |
| Δ9-THC (%)       | 001.10 | HPLC-UVVIS | 0.1881   | 20 | 0.0389    | 20.7 | 5.13            | 5.72      | 20 | 4.56      |
| Δ9-THCA (%)      | 002.10 | HPLC-UVVIS | 0.1833   | 20 | 0.0546    | 29.8 | 5.15            | 6.96      | 19 | 6.43      |
| CBD (%)          | 003.10 | HPLC-UVVIS | 2.0204   | 20 | 0.236     | 11.7 | 3.59            | 3.67      | 20 | 2.36      |
| CBDA (%)         | 004.10 | HPLC-UVVIS | 6.5734   | 18 | 0.9276    | 14.1 | 3.01            | 2.74      | 18 | 1.7       |
| Total Δ9-THC (%) | 006.10 | HPLC-UVVIS | 0.3442   | 19 | 0.0778    | 22.6 | 4.68            | 6.01      | 19 | 4.36      |
| Total Δ9-THC (%) | 006.40 | GC-FID     | 0.3008   | 9  | 0.0831    | 27.6 | 4.78            | 4.77      | 9  | 3.56      |
| Total CBD (%)    | 007.10 | HPLC-UVVIS | 7.7002   | 18 | 1.1151    | 14.5 | 2.94            | 2.93      | 18 | 1.71      |
| Total CBD (%)    | 007.40 | GC-FID     | 7.0422   | 7  | 1.4079    | 20   | 2.98            | 4.95      | 7  | 2.69      |
| Moisture (%)     | 500.10 | Oven       | 8.7545   | 8  | 1.7952    | 20.5 | 2.88            | 2.89      | 6  | 2.51      |