Supplement of

Recent degradation of interior Alaska permafrost mapped with ground surveys, geophysics, deep drilling, and repeat airborne lidar

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Table S1. A summary of the cores collected during this study.

**Creamer’s Field transect**

64.8677N, 147.7383W

| Distance: 1 m | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description                  |
|--------------|------------------|-------------------|-------------------------------------|-----------------------------|
| 2/25/2014    | 75               | 90                | 743.1                               | Organics with ice           |
| Geoprobe     | 120              | 135               | 223.4                               | Organics with ice           |
|              | 180              | 195               | 376.5                               | Organics with ice           |
|              | 240              | 255               | 40.7                                | Silt with no visible ice    |
|              | 270              | 285               | 38.5                                | Sandy silt with no visible ice |
|              | 300              | 315               | 32.1                                | Sandy silt with no visible ice |
|              | 345              | 360               | 37.5                                | Silt with no visible ice    |
|              | 390              | 405               | 25                                  | Silty sand                  |
|              | 435              | 450               | 28.9                                | Silty sand                  |
|              | 510              | 525               | 29.5                                | Silty sand                  |
### 64.8679N, 147.7384W

| Date       | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) | Description                   |
|------------|------------------|-------------------|-----------------------------------|-------------------------------|
| 2/25/2014  | 45               | 60                | 281.7                             | Thawed; Organics with ice     |
| Geoprobe   | 60               | 255               | N/A                               | Ice wedge ice                 |
|            | 270              | 285               | 54.3                              | Silty sand                    |
|            | 300              | 315               | 30.8                              | Silty sand                    |
|            | 375              | 390               | 26.2                              | Sand                          |
|            | 435              | 450               | 27.8                              | Sand                          |

### 64.8683N, 147.7389W

| Date       | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) | Frozen bulk density (kg/m³) | Description                       |
|------------|------------------|-------------------|-----------------------------------|-----------------------------|-----------------------------------|
| 5/2/2017   | 0                | 15                | 85.8                              | 1079                         | Peat                              |
| SIPRE      | 15               | 30                | 80.3                              | 1113                         | Peat                              |
|            | 30               | 54                | 71.3                              | 973                          | Peat                              |
|            | 54               | 71                | 81.0                              | 1155                         | Peat                              |
|            | 71               | 92                | 72.6                              | 946                          | Peat                              |
|            | 92               | 106               | 79.6                              | 1046                         | Peat                              |
|            | 106              | 127               | 81.8                              | 1012                         | Peat                              |
|            | 127              | 145               | 93.3                              | 1095                         | Peat                              |
|            | 145              | 161               | 79.6                              | 1017                         | Peat                              |
|            | 161              | 178               | 86.4                              | 1040                         | Peat with minor ice visible       |
|            | 178              | 196               | 84.6                              | 1039                         | Peat with minor ice visible       |
|            | 196              | 220               | 79.3                              | 1034                         | Peat with minor ice visible       |
|            | 220              | 234               | 77.3                              | 1140                         | Peat with minor ice visible       |
|            | 234              | 249               | 79.8                              | 1117                         | Peat with minor ice visible       |
|            | 249              | 268               | 68.4                              | 1090                         | Silt with minor ice visible       |
|            | 268              | 297               | 32.1                              | 776                          | Silt with minor ice visible       |
|            | 297              | 317               | 63.2                              | 1043                         | Silty sand                        |
|            | 317              | 337               | 51.1                              | 1297                         | Sand                              |
|            | 337              | 351               | 71.0                              | 1389                         | Sand                              |
|            | 351              | 368               | 49.4                              | 1240                         | Sand                              |
| Distance: 269 m | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Frozen bulk density (kg/m³) | Description                        |
|---------------|------------------|------------------|-------------------------------------|----------------------------|-----------------------------------|
| 5/3/2017      | 0                | 8                | 71.7                                | 754                        | Peat with visible ice             |
|               | 8                | 21               | 95.2                                | 1045                       | Peat with visible ice             |
|               | 21               | 35               | 86.6                                | 1083                       | Peat with visible ice             |
|               | 35               | 49               | 78.4                                | 1269                       | Peat with visible ice             |
|               | 49               | 63               | 81.1                                | 1202                       | Peat with visible ice             |
|               | 63               | 75               | 93.7                                | 1096                       | Peat with visible ice             |
|               | 75               | 80               | 254.1                               | 3159                       | Peat with visible ice             |
|               | 80               | 96               | 80.1                                | 895                        | Peat with visible ice             |
|               | 96               | 110              | 81.9                                | 904                        | Peat with visible ice             |
|               | 110              | 127              | 87.1                                | 925                        | Peat with visible ice             |
|               | 127              | 144              | 83.7                                | 912                        | Silt with minor ice visible       |
|               | 144              | 159              | 86.5                                | 958                        | Silt with minor ice visible       |
|               | 159              | 173              | 81.9                                | 943                        | Silt with minor ice visible       |
|               | 173              | 185              | 95.5                                | 1100                       | Silt with minor ice visible       |
|               | 185              | 197              | 88.8                                | 1009                       | Silt with minor ice visible       |
|               | 197              | 213              | 95.9                                | 1090                       | Silt with minor ice visible       |
|               | 213              | 230              | 92.9                                | 1051                       | Silt with minor ice visible       |
|               | 230              | 255              | 71.4                                | 865                        | Silt with minor ice visible       |
|               | 255              | 273              | 86.3                                | 1058                       | Silt with minor ice visible       |
|               | 273              | 289              | 86.4                                | 1200                       | Silt with minor ice visible       |
|               | 289              | 306              | 87.8                                | 1230                       | Silt with minor ice visible       |
|               | 306              | 322              | 86.9                                | 1231                       | Silt with minor ice visible       |
|               | 322              | 332              | 89.3                                | 1109                       | Silt with minor ice visible       |
|               | 332              | 342              | 92.6                                | 1221                       | Silt with minor ice visible       |
### 64.8701N, 147.7393W

| Distance: 272 m | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description          |
|----------------|------------------|-------------------|-------------------------------------|----------------------|
| 2/27/2014      | 30               | 45                | 446                                 | Peat with visible ice|
|                | 90               | 105               | 519.7                               | Peat with visible ice|
|                | 135              | 150               | 488.5                               | Peat with visible ice|
|                | 195              | 210               | 486.4                               | Peat with visible ice|
|                | 285              | 300               | 130.6                               | Silt with visible ice|
|                | 345              | 360               | 210.8                               | Silt with visible ice|

### 64.8703N, 147.7394W

| Distance: 297 m | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description                                      |
|----------------|------------------|-------------------|-------------------------------------|-------------------------------------------------|
| 3/4/2014       | 105              | 120               | 579.4                               | Organics with visible ice                        |
| Geoprobe       | 225              | 240               | 1230                                | Organics with visible ice                        |
|                | 285              | 300               | 37.1                                | Silt with organics and visible ice               |
|                | 324              | 339               | 112.8                               | Silt with visible ice                            |
|                | 369              | 384               | 112.2                               | Silt with visible ice                            |
|                | 390              | 405               | 86.55                               | Silt with visible ice                            |
|                | 405              | 420               | 107.9                               | Silt with no visible ice                         |
|                | 426              | 441               | 93.1                                | Silt with no visible ice                         |
|                | 444              | 459               | 53.1                                | Silt with no visible ice                         |
|                | 480              | 495               | 36.8                                | Sandy silt                                       |
|                | 510              | 525               | 36                                  | Sandy silt                                       |
|                | 540              | 555               | 43.1                                | Sandy silt                                       |
|                | 600              | 615               | 42.1                                | Silt with no visible ice                         |
|                | 645              | 660               | 36.4                                | Silt with no visible ice                         |
|                | 720              | 735               | 51.4                                | Silt with no visible ice                         |
|                | 750              | 765               | 33.5                                | Sand                                             |
|                | 810              | 825               | 44.6                                | Silty sand with organics                         |
|                | 855              | 870               | 32.6                                | Sand                                             |
|                | 930              | 945               | 33.9                                | Sandy silt with gravel                           |
| Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description                        |
|-----------------|-------------------|---------------------------------------|-------------------------------------|
| 21              | 36                | 307.1                                 | Organics with visible ice           |
| 90              | 105               | 244                                   | Organics with visible ice           |
| 150             | 165               | 101.6                                 | Silt with visible ice               |
| 180             | 195               | 98.7                                  | Silt with no visible ice            |
| 204             | 219               | 139.6                                 | Silt with no visible ice            |
| 225             | 240               | 52.4                                  | Silt with no visible ice            |
| 279             | 294               | 179                                   | Silt with organics and no visible ice|
| 294             | 309               | 84.8                                  | Silt with visible ice               |
| 315             | 330               | 114.1                                 | Silt with organics and visible ice  |
| 360             | 465               | 91.4                                  | Silt with minor visible ice         |
| 390             | 405               | 182                                   | Silt with no visible ice            |
| 414             | 429               | 131.1                                 | Silt with minor visible ice         |
| 450             | 465               | 107.5                                 | Silt with no visible ice            |
| 510             | 525               | 94.4                                  | Silt with no visible ice            |
| 570             | 585               | 94.3                                  | Silt with no visible ice            |
| 615             | 630               | 182.9                                 | Silt with no visible ice            |
| 660             | 675               | 219.7                                 | Silt with no visible ice            |
| 690             | 705               | 36.7                                  | Sandy silt with no visible ice      |
**Farmer's Loop transect 1**

64.8767, 147.6751 W

| Date     | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description                      |
|----------|------------------|-------------------|--------------------------------------|----------------------------------|
| 3/25/2014| 75               | 90                | 29.2                                 | Silt with no visible ice         |
|          | 90               | 105               | 82.7                                 | Peaty silt                       |
| Geoprobe | 120              | 135               | 44.4                                 | Peaty silt with visible ice      |
|          | 165              | 180               | 22.7                                 | Silt with no visible ice         |
|          | 225              | 240               | 48.4                                 | Silt with no visible ice         |
|          | 279              | 294               | 115.7                                | Silt with visible ice            |
|          | 312              | 327               | 45.3                                 | Silt with no visible ice         |
|          | 327              | 342               | 123.4                                | Silt with minor peat             |
|          | 360              | 375               | 46.2                                 | Silt with no visible ice         |
|          | 420              | 435               | 98                                   | Silt with no visible ice         |
|          | 450              | 465               | 98.9                                 | Silt with minor peat             |
|          | 480              | 495               | 95.1                                 | Silt with no visible ice         |
|          | 510              | 525               | 65                                   | Silt with no visible ice         |
|          | 570              | 585               | 77.2                                 | Silt with no visible ice         |
|          | 591              | 606               | 256.2                                | Peat                             |
|          | 645              | 660               | 41.3                                 | Silt with no visible ice         |
|          | 675              | 690               | 49.8                                 | Silt with no visible ice         |
|          | 705              | 720               | 36.9                                 | Silt with no visible ice         |
|          | 765              | 780               | 34.1                                 | Silt with no visible ice         |
|          | 840              | 855               | 94.6                                 | Silt with no visible ice         |
|          | 930              | 945               | 32.3                                 | Silt with no visible ice         |
|          | 1050             | 1065              | 38.5                                 | Silt with no visible ice         |
|          | 1110             | 1125              | 37.6                                 | Silt with no visible ice         |
|          | 1170             | 1185              | 36.1                                 | Silt with no visible ice         |
|          | 1215             | 1230              | 34.5                                 | Silt with no visible ice         |
|          | 1260             | 1275              | 47.2                                 | Silt with no visible ice         |
|          | 1335             | 1350              | 38.1                                 | Silt with no visible ice         |
| Distance: 87 m | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Frozen bulk density (kg/m³) | Description                        |
|----------------|------------------|-------------------|-------------------------------------|----------------------------|-----------------------------------|
| 5/3/2017       | 0                | 16                | 88.2                                 | 1032                       | Peat                              |
| SIPRE          | 16               | 32                | 56.3                                 | 1364                       | Silt with peat                    |
|                | 32               | 46                | 76.6                                 | 1176                       | Silt with peat                    |
|                | 46               | 62                | 79.1                                 | 1360                       | Thawed silty peat                 |
|                | 62               | 73                | 63.0                                 | 1038                       | Thawed silty peat                 |
|                | 73               | 84                | 59.5                                 | 1133                       | Thawed silty peat                 |
|                | 84               | 102               |                                      |                            | Missing; thawed silty mud         |
|                | 102              | 116               | 87.5                                 | 1267                       | Silt with minor ice visible       |
|                | 116              | 128               | 75.0                                 | 1647                       | Silt with minor ice visible       |
|                | 128              | 136               | 98.4                                 | 2104                       | Silt with minor ice visible       |
|                | 136              | 149               | 57.9                                 | 1653                       | Silt with minor ice visible       |
|                | 149              | 160               | 88.5                                 | 1519                       | Silt with minor ice visible       |
|                | 160              | 171               | 84.3                                 | 1523                       | Silt with minor ice visible       |
|                | 171              | 182               | 83.2                                 | 1548                       | Silt with minor ice visible       |
|                | 182              | 191               | 74.7                                 | 1424                       | Silt with minor ice visible       |
| Distance: 94 m | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description                  |
|---------------|-----------------|------------------|-------------------------------------|------------------------------|
| 4/22/2014     | 90              | 105              | 59.9                                | Silt with no visible ice     |
| Geoprobe      | 114             | 129              | 201.9                               | Peat                         |
|               | 135             | 150              | 68.6                                | Silt with no visible ice     |
|               | 180             | 195              | 77.6                                | Silt with no visible ice     |
|               | 210             | 225              | 111.8                               | Peaty silt with visible ice  |
|               | 225             | 240              | 66.8                                | Silt with minor visible ice  |
|               | 255             | 270              | 31.6                                | Silt with no visible ice     |
|               | 300             | 315              | 83.3                                | Peaty silt with visible ice  |
|               | 375             | 390              | 95.3                                | Peaty silt with visible ice  |
|               | 390             | 405              | 111.3                               | Peaty silt with visible ice  |
|               | 420             | 435              | 87.4                                | Silt with no visible ice     |
|               | 465             | 480              | 54.5                                | Silt with no visible ice     |
|               | 495             | 510              | 40.4                                | Silt with no visible ice     |
|               | 510             | 525              | 75.9                                | Silt with minor visible ice  |
|               | 540             | 555              | 34.1                                | Silt with no visible ice     |
|               | 585             | 600              | 46.7                                | Silt with minor visible ice  |
|               | 615             | 630              | 104.2                               | Silt with minor visible ice  |
|               | 645             | 660              | 46.4                                | Peaty silt with visible ice  |
|               | 690             | 705              | 46.7                                | Silt with no visible ice     |
|               | 735             | 750              | 37.2                                | Silt with minor visible ice  |
|               | 750             | 765              | 33.2                                | Silt with minor visible ice  |
|               | 810             | 825              | 99.4                                | Peaty silt with visible ice  |
|               | 825             | 840              | 79.7                                | Silt with minor visible ice  |
|               | 855             | 870              | 34.2                                | Silt with minor visible ice  |
|               | 870             | 885              | 42.8                                | Silt with minor visible ice  |
|               | 960             | 975              | 35.6                                | Silt with minor visible ice  |
| Date       | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description                                      |
|-----------|------------------|-------------------|-------------------------------------|-------------------------------------------------|
| 4/2/2014  | 60               | 75                | 341                                 | Organics with visible ice                       |
| Geoprobe  | 105              | 120               | 514.1                               | Organics with visible ice                       |
|           | 195              | 210               | 355.6                               | Organics with visible ice                       |
|           | 420              | 435               | 52.3                                | Silt with minor visible ice                     |
|           | 456              | 471               | 37.6                                | Silt with minor visible ice                     |
|           | 480              | 495               | 82.5                                | Silt with no visible ice                        |
|           | 540              | 555               | 117                                 | Organic rich silt                               |
|           | 570              | 585               | 78                                  | Silt with minor visible ice                     |
|           | 600              | 615               | 59.6                                | Silt with minor visible ice                     |
|           | 615              | 630               | 40.6                                | Silt with minor visible ice                     |
|           | 660              | 675               | 330.9                               | Peat with visible ice                           |
|           | 705              | 720               | 338.5                               | Peat with visible ice                           |
|           | 780              | 795               | 43.4                                | Silt with minor visible ice                     |
|           | 840              | 855               | 39.6                                | Silt with minor visible ice                     |
|           | 900              | 915               | 40.1                                | Silt with minor visible ice                     |
|           | 945              | 960               | 47.7                                | Silt with minor visible ice                     |
|           | 1020             | 1022              | 14                                  | Wood fragment 14C age: 10,360 +/- 260; δ13C: -27.7 per mil; Lab Sample name: GX-33790; Field sample name: FLT1306-34-34.5 |
|           | 1050             | 1065              | 64.4                                | Silt with minor visible ice                     |
|           | 1080             | 1095              | 41.8                                | Silt with minor visible ice                     |
|           | 1155             | 1170              | 79.9                                | Silt with minor visible ice                     |
|           | 1230             | 1245              | 35                                  | Silt with minor visible ice                     |
|           | 1275             | 1290              | 30.8                                | Silt with minor visible ice                     |
|           | 1290             | 1305              | 39.6                                | Silt with minor visible ice                     |
|           | 1365             | 1380              | 20.6                                | Silt with minor visible ice                     |
| Distance: 358 m | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description |
|----------------|------------------|-------------------|--------------------------------------|-------------|
| 3/26/2014      | 120              | 135               | 324.4                                | Organics with visible ice |
| Geoprobe       | 225              | 240               | 187.8                                | Silt with organics |
|                | 360              | 375               | 54.9                                 | Silt |
|                | 420              | 435               | 45                                   | Silt with minor ice |
|                | 450              | 465               | 41                                   | Silt |
|                | 471              | 486               | 216.7                                | Peat layer |
|                | 480              | 495               | 95.1                                 | Silt |
|                | 525              | 540               | 781.2                                | Peat with visible ice |
|                | 645              | 660               | 62.6                                 | Peat with visible ice |
|                | 667              | 669               |                                      | Wood fragment $^{14}$C age: 10,160 +/- 160; $\delta^{13}$C: -28.0 per mil; Lab sample name: GX-33790; Field sample name: FLT1358#8-21-21.5 |
|                | 750              | 765               | 234                                  | Peat with minor visible ice |
|                | 834              | 849               | 301.4                                | Silt with visible ice |
|                | 915              | 930               | 161.2                                | Soft thawed silt |
|                | 1020             | 1035              | 213.1                                | Soft thawed silt |
Farmer's Loop transect 2

64.8744N, 147.6774W

| Distance: 50 m | Start (cm) | End (cm) | Gravimetric moisture content (g/g) % | Description                  |
|---------------|------------|----------|-------------------------------------|------------------------------|
| 5/5/2014      | 30         | 45       | 26.6                                | Organics                     |
| Geoprobe      | 90         | 105      | 48.5                                | Silt with no visible ice     |
|               | 120        | 135      | 34.7                                | Silt with no visible ice     |
|               | 150        | 165      | 50.8                                | Silt with no visible ice     |
|               | 195        | 210      | 42.0                                | Silt with no visible ice     |
|               | 315        | 330      | 52.4                                | Silt with no visible ice     |
|               | 360        | 375      | 71.4                                | Silt with no visible ice     |
|               | 435        | 450      | 95.6                                | Silt with minor visible ice  |
|               | 540        | 555      | 40.5                                | Silt with no visible ice     |
|               | 585        | 600      | 29.9                                | Silt with no visible ice     |
|               | 675        | 690      | 31.9                                | Silt with no visible ice     |
|               | 735        | 750      | 35.9                                | Silt with no visible ice     |
|               | 780        | 795      | 36.5                                | Silt with no visible ice     |
|               | 825        | 840      | 38.4                                | Silt with no visible ice     |
|               | 870        | 885      | 43.9                                | Silt with no visible ice     |
|               | 900        | 915      | 43.2                                | Silt with no visible ice     |
|               | 960        | 975      | 55.0                                | Silt with minor visible ice  |
### 64.8745N, 147.6779W

| Date        | Start (cm) | End (cm) | Description                      |
|-------------|------------|----------|----------------------------------|
| 5/25/2018   | 0          | 15       | Organics                         |
| SIPRE       | 15         | 60       | Sandy silt with no visible ice   |
|             | 60         | 84       | Silt with peat                   |
|             | 84         | 117      | Thawed silty peat                |
|             | 117        | 165      | Silt with visible ice            |
|             | 174        | 222      | Silt with visible ice            |
|             | 222        | 345      | Silt with visible ice            |

### 64.8746N, 147.6806W

| Date        | Start (cm) | End (cm) | Gravimetric moisture content (g/g) % | Frozen bulk density (kg/m^3) | Description                      |
|-------------|------------|----------|--------------------------------------|-----------------------------|----------------------------------|
| 5/3/2017    | 0          | 22       | 43.8                                 | 950                         | Organics                         |
| SIPRE       | 22         | 36       | 73.1                                 | 1515                        | Silt with visible ice            |
|             | 36         | 48       | 33.8                                 | 1607                        | Silt with visible ice            |
|             | 48         | 61       | 51.4                                 | 1708                        | Silt with visible ice            |
|             | 61         | 76       | 52.3                                 | 1494                        | Silt with visible ice            |
|             | 76         | 90       | 46.0                                 | 1537                        | Silt with visible ice            |
|             | 90         | 106      | 148.3                                | 1294                        | Silt with visible ice            |
|             | 106        | 123      | 66.7                                 | 1287                        | Peat with visible ice            |
|             | 123        | 132      | 301.7                                | 1326                        | Peat with visible ice            |
|             | 132        | 145      | 138.6                                | 1370                        | Peat with visible ice            |
|             | 145        | 159      | 100.8                                | 1356                        | Peat with visible ice            |
|             | 159        | 174      | 88.3                                 | 1406                        | Silt with visible ice            |
|             | 174        | 187      | 52.5                                 | 1538                        | Silt with visible ice            |
|             | 187        | 201      | 55.0                                 | 1402                        | Silt with visible ice            |
| Distance: 210 m | Start (cm) | End (cm) | Gravimetric moisture content (g/g) % | Description                  |
|----------------|------------|----------|-------------------------------------|------------------------------|
| 5/1/2014       | 90         | 105      | 185.2                               | Organics with peat           |
| Geoprobe       | 120        | 135      | 122.4                               | Silt with visible ice        |
|                | 165        | 180      | 202.2                               | Peat with visible ice        |
|                | 225        | 240      | 199.6                               | Silt with visible ice        |
|                | 270        | 285      | 153                                 | Silt with visible ice        |
|                | 315        | 330      | 79.0                                | Silt with no visible ice     |
|                | 375        | 390      | 56.44                               | Silt with visible ice        |
|                | 390        | 405      | 56.8                                | Silt with visible ice        |
|                | 435        | 450      | 69.7                                | Silt with visible ice        |
|                | 525        | 540      | 49.7                                | Silt with minor visible ice  |
|                | 570        | 585      | 44.8                                | Silt with minor visible ice  |
|                | 645        | 660      | 37.9                                | Silt with no visible ice     |
|                | 690        | 705      | 41.9                                | Silt with no visible ice     |
|                | 780        | 795      | 42.5                                | Silt with no visible ice     |
|                | 825        | 840      | 44.7                                | Silt with no visible ice     |
|                | 900        | 915      | 44.3                                | Silt with no visible ice     |
|                | 945        | 960      | 46.1                                | Silt with no visible ice     |
|                | 1020       | 1035     | 48.4                                | Silt with no visible ice     |
|                | 1065       | 1080     | 48.1                                | Silt with visible ice        |
| Distance: 220 m | Start (cm) | End (cm) | Description                               |
|----------------|------------|----------|-------------------------------------------|
| 5/25/2018      | 0          | 15       | Organics with peat                        |
| SIPRE          | 15         | 27       | Peat with minor silt layers               |
|                | 30         | 66       | Peat                                      |
|                | 66         | 81       | Peat with minor silt layers               |
|                | 81         | 120      | Peat with minor silt layers               |
|                | 120        | 138      | Peat with minor silt layers               |
|                | 138        | 153      | Silt with visible ice                     |
|                | 153        | 264      | Ice with silt                             |
|                | 264        | 318      | Ice with silt                             |

| Distance: 222 m | Start (cm) | End (cm) | Description                                                   |
|----------------|------------|----------|---------------------------------------------------------------|
| 5/25/2018      | 0          | 15       | Organics with peat                                           |
| SIPRE          | 15         | 111      | Peat with minor silt layers                                   |
|                | 111        | 150      | Peat with minor silt layers and visible ice                   |
|                | 150        | 219      | Silt with visible ice                                        |
|                | 219        | 267      | Silt with visible ice                                        |
| Distance: 235 m | Start (cm) | End (cm) | Gravimetric moisture content (g/g) % | Frozen bulk density (kg/m³) | Description      |
|----------------|------------|----------|--------------------------------------|----------------------------|------------------|
| 5/3/2017       | 0          | 13       | 82.3                                 | 935                        | Organics with peat |
| SIPRE          | 13         | 26       | 91.1                                 | 1221                       | Organics with peat |
|                | 26         | 40       | 92.8                                 | 1158                       | Organics with peat |
|                | 40         | 54       | 72.7                                 | 1004                       | Organics with peat |
|                | 54         | 68       | 79.1                                 | 940                        | Organics with peat |
|                | 68         | 82       | 88.8                                 | 1206                       | Organics with peat |
|                | 82         | 90       | 74.4                                 | 1018                       | Organics with peat |
|                | 90         | 104      | 77.4                                 | 1088                       | Organics with peat |
|                | 104        | 119      | 52.5                                 | 1109                       | Silt with visible ice |
|                | 119        | 129      | 78.0                                 | 781                        | Clear ice         |
|                | 129        | 138      | 78.3                                 | 1080                       | Peat with visible ice |
|                | 138        | 150      | 88.5                                 | 1038                       | Peat with visible ice |
|                | 150        | 163      | 82.6                                 | 1186                       | Peat with visible ice |
|                | 163        | 173      | 85.1                                 | 1193                       | Peat with visible ice |
|                | 173        | 192      | 69.9                                 | 992                        | Peat with visible ice |
|                | 192        | 210      | 73.4                                 | 1080                       | Silt with visible ice |
|                | 210        | 234      | 48.8                                 | 1058                       | Silt with visible ice |
|                | 234        | 256      | 62.9                                 | 1065                       | Silt with visible ice |
| Distance: 330 m | Start (cm) | End (cm) | Gravimetric moisture content (g/g) % | Description |
|----------------|------------|----------|-----------------------------------|-------------|
| 5/2/2014 Geoprobe | 45         | 60       | 544.6                             | Organics with peat |
|                | 90         | 105      | 648.4                             | Silt with visible ice |
|                | 150        | 165      | 648.4                             | Silt with visible ice |
|                | 240        | 255      | 117.4                             | Silt with visible ice |
|                | 255        | 270      | 144.1                             | Silt with visible ice |
|                | 345        | 360      | 69.0                              | Silt with visible ice |
|                | 375        | 390      | 253.7                             | Silt with visible ice |
|                | 405        | 420      | 419.1                             | Silt with visible ice |
|                | 435        | 450      | 234.6                             | Silt with organics and visible ice |
|                | 465        | 480      | 341.4                             | Silt with organics and visible ice |
|                | 495        | 510      | 561.7                             | Silt with organics and visible ice |
|                | 510        | 5250     | 774.8                             | Silt with organics and visible ice |
|                | 555        | 570      | 517.9                             | Silt with organics and visible ice |
|                | 600        | 615      | 128.0                             | Silt with visible ice |
|                | 630        | 645      | 397.1                             | Silt with organics and visible ice |
|                | 675        | 690      | 387.6                             | Silt with organics and visible ice |
|                | 705        | 720      | 321.6                             | Silt with organics and visible ice |
|                | 735        | 750      | 114.2                             | Silt with organics and visible ice |
|                | 795        | 810      | 63.7                              | Silt with organics and visible ice |
|                | 840        | 855      | 63.6                              | Silt with visible ice |
|                | 870        | 885      | 65.0                              | Silt with visible ice |
|                | 975        | 990      | 89.7                              | Organic rich silt with visible ice |
|                | 1020       | 1035     | 79.5                              | Silt with minor visible ice |
|                | 1080       | 1095     | 47.6                              | Silt with minor visible ice |
| Date         | Start (cm) | End (cm) | Gravimetric moisture content (g/g) % | Frozen bulk density (kg/m³) | Description         |
|--------------|------------|----------|-------------------------------------|-----------------------------|---------------------|
| 5/3/2017     | 0          | 15       | 87.3                                | 1150                        | Organics with peat  |
| SIPRE        | 15         | 27       | 98.7                                | 1136                        | Organics with peat  |
|              | 27         | 37       | 91.4                                | 1241                        | Organics with peat  |
|              | 37         | 53       | 35.6                                | 1572                        | Silt with visible ice |
|              | 53         | 69       | 32.6                                | 1616                        | Silt with visible ice |
|              | 69         | 83       | 28.8                                | 1697                        | Silt with visible ice |
|              | 83         | 100      | 62.0                                | 1450                        | Silt with visible ice |
|              | 100        | 114      | 46.7                                | 1361                        | Silt with visible ice |
|              | 114        | 128      | 84.4                                | 1373                        | Silt with visible ice |
|              | 128        | 142      | 60.9                                | 1594                        | Silt with visible ice |
|              | 142        | 156      | 76.9                                | 1490                        | Silt with visible ice |
|              | 156        | 176      | 37.7                                | 1233                        | Silt with visible ice |
|              | 176        | 197      | 50.2                                | 1323                        | Silt with visible ice |
### Gravimetric Moisture Content

| Distance: 420 m | Start (cm) | End (cm) | Gravimetric moisture content (g/g) % | Description |
|----------------|------------|----------|-------------------------------------|-------------|
| 5/8/2014       | 90         | 105      | 69.6                                | Silt with no visible ice |
| Geoprobe       | 150        | 165      | 31.3                                | Silt with no visible ice |
|                | 240        | 255      | 88.9                                | Silt with no visible ice |
|                | 300        | 315      | 44.4                                | Silt with visible ice   |
|                | 360        | 375      | 55.7                                | Silt with visible ice   |
|                | 390        | 405      | 76.2                                | Silt with visible ice   |
|                | 435        | 450      | 518.0                               | Ice rich peat          |
|                | 493        | 495      |                                     | Peat sample ^14C age: 7,200 +/- 190; d^13C: -28.7 per mil; Lab sample name: GX-33789; Field sample name: FLT2420-15-5-16.5 |
|                | 540        | 555      | 85.2                                | Silt with visible ice   |
|                | 600        | 615      | 57.2                                | Silt with visible ice   |
|                | 690        | 705      | 41.5                                | Silt with visible ice   |
|                | 750        | 765      | 44.1                                | Silt with minor visible ice |
|                | 810        | 825      | 43.0                                | Silt with minor visible ice |
|                | 930        | 945      | 39.6                                | Silt with minor visible ice |
|                | 1020       | 1035     | 40.8                                | Silt with no visible ice |
| Date       | Start (cm) | End (cm) | Gravimetric moisture content (g/g) % | Frozen bulk density (kg/m³) | Description       |
|------------|------------|----------|-------------------------------------|----------------------------|-------------------|
| 5/3/2017   | 0          | 6        | 69.4                                | 815                        | Organics with peat |
| SIPRE      | 6          | 21       | 88.6                                | 1145                       | Organics with peat |
|            | 21         | 34       | 78.4                                | 1143                       | Organics with peat |
|            | 34         | 45       | 105.6                               | 1436                       | Organics with peat |
|            | 45         | 59       | 65.0                                | 1180                       | Organics with peat |
|            | 59         | 72       | 93.4                                | 1188                       | Silt with visible ice |
|            | 72         | 84       | 91.7                                | 1338                       | Silt with visible ice |
|            | 84         | 106      | 55.8                                | 1097                       | Silt with no visible ice |
|            | 106        | 118      | 70.0                                | 1591                       | Silt with no visible ice |
|            | 118        | 132      | 59.4                                | 1394                       | Silt with no visible ice |
|            | 132        | 147      | 50.6                                | 1494                       | Silt with no visible ice |
|            | 147        | 161      | 55.6                                | 1565                       | Silt with no visible ice |
|            | 161        | 175      | 58.9                                | 1617                       | Silt with no visible ice |
|            | 175        | 188      | 63.6                                | 1500                       | Silt with no visible ice |
|            | 188        | 200      | 81.9                                | 1482                       | Silt with no visible ice |
|            | 200        | 220      | 40.6                                | 1078                       | Silt with no visible ice |
### Permafrost Tunnel Transect

#### 64.9507N, 147.6196W

| Date    | Depth start (cm) | Depth finish (cm) | Description                       |
|---------|------------------|-------------------|-----------------------------------|
| 6/5/2018 | 0                | 17                | Thawed peat                       |
| SIPRE   | 17               | 31                | Frozen silt with visible ice      |
|         | 31               | 49                | Muddy thawed silt                 |
|         | 49               | 74                | Silt with visible ice             |
|         | 74               | 100               | Silt with visible ice             |

#### 64.9510N, 147.6141W

| Date    | Depth start (cm) | Depth finish (cm) | Description                       |
|---------|------------------|-------------------|-----------------------------------|
| 3/25/2018 | 0               | 15                | Peat                              |
| SIPRE   | 15               | 45                | Frozen silt with visible ice      |
|         | 45               | 70                | Muddy thawed silt                 |
|         | 70               | 249               | Silt with visible ice             |
| Distance: 402 m | Depth start (cm) | Depth finish (cm) | Gravimetric moisture content (g/g) % | Description              |
|----------------|------------------|-------------------|--------------------------------------|--------------------------|
| 3/5/2014       | 75               | 90                | 91.4                                 | Silt with no visible ice |
| Geoprobe       | 150              | 165               | 148.8                                | Silt with no visible ice |
|                | 216              | 232.5             | 119.7                                | Silt with visible ice    |
|                | 240              | 255               | 145.9                                | Silt with visible ice    |
|                | 345              | 360               | 96.5                                 | Silt with visible ice    |
|                | 420              | 435               | 23.6                                 | Silty sand              |
|                | 495              | 510               | 77.7                                 | Silt with visible ice    |
|                | 585              | 600               | 57.5                                 | Silt with visible ice    |
|                | 645              | 660               | 83.3                                 | Silt with visible ice    |
|                | 720              | 735               | 57.2                                 | Silt with visible ice    |
|                | 930              | 945               | 53.4                                 | Silt with visible ice    |
|                | 1020             | 1035              | 85.9                                 | Silt with visible ice    |
|                | 1125             | 1140              | 94.1                                 | Silt with visible ice    |
|                | 1230             | 1245              | 66.8                                 | Silt with visible ice    |
|                | 1380             | 1395              | 56.3                                 | Silt with visible ice    |
|                | 1485             | 1500              | 37.3                                 | Silt with visible ice    |
|                | 1515             | 1530              | 25.3                                 | Silt with visible ice    |
|                | 1545             | 1560              | 40.7                                 | Silt with visible ice    |