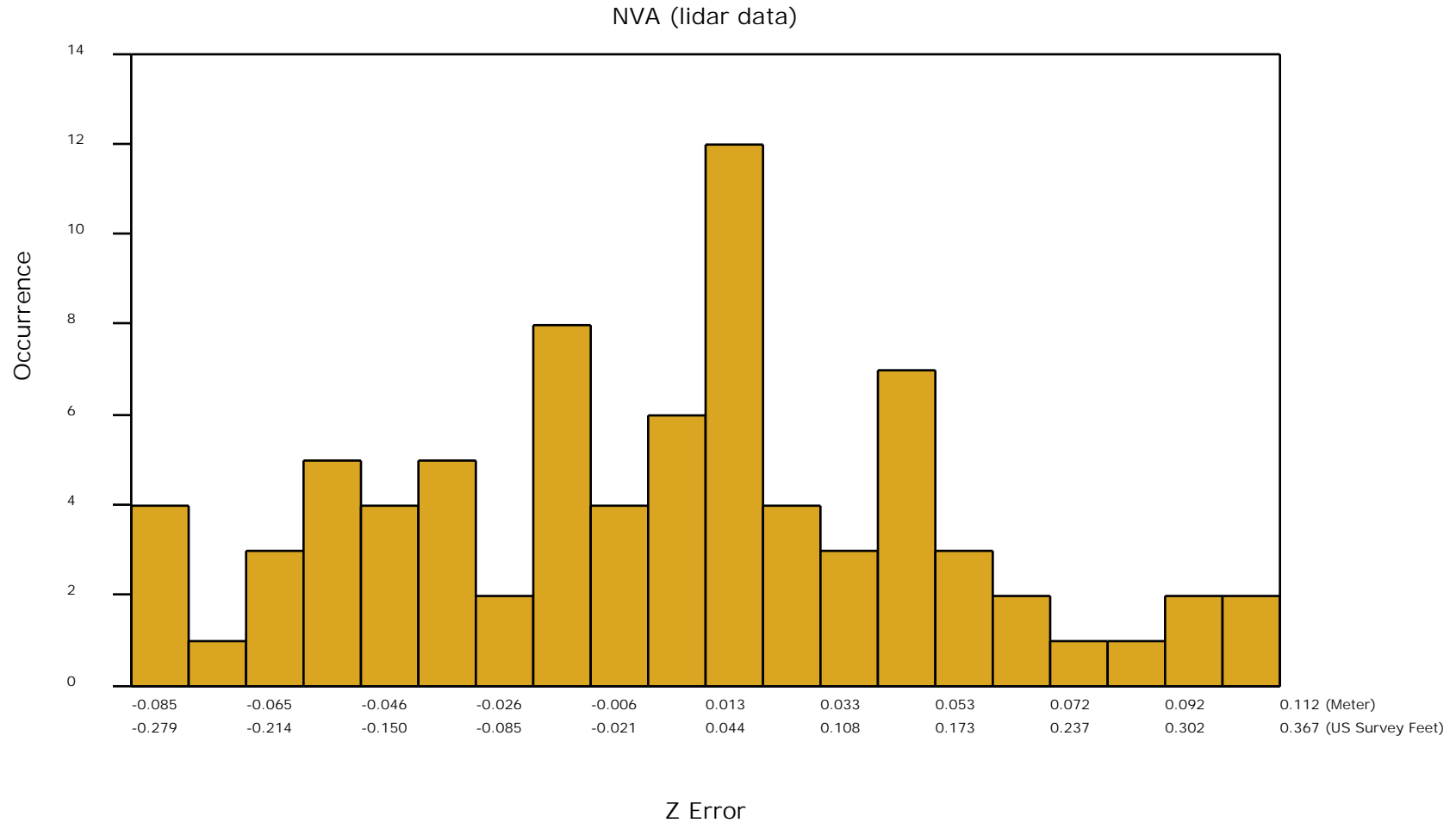


DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to show a frequency distribution chart of the non-vegetated vertical accuracy (NVA) of the lidar point cloud data measured against surveyed ground check points.

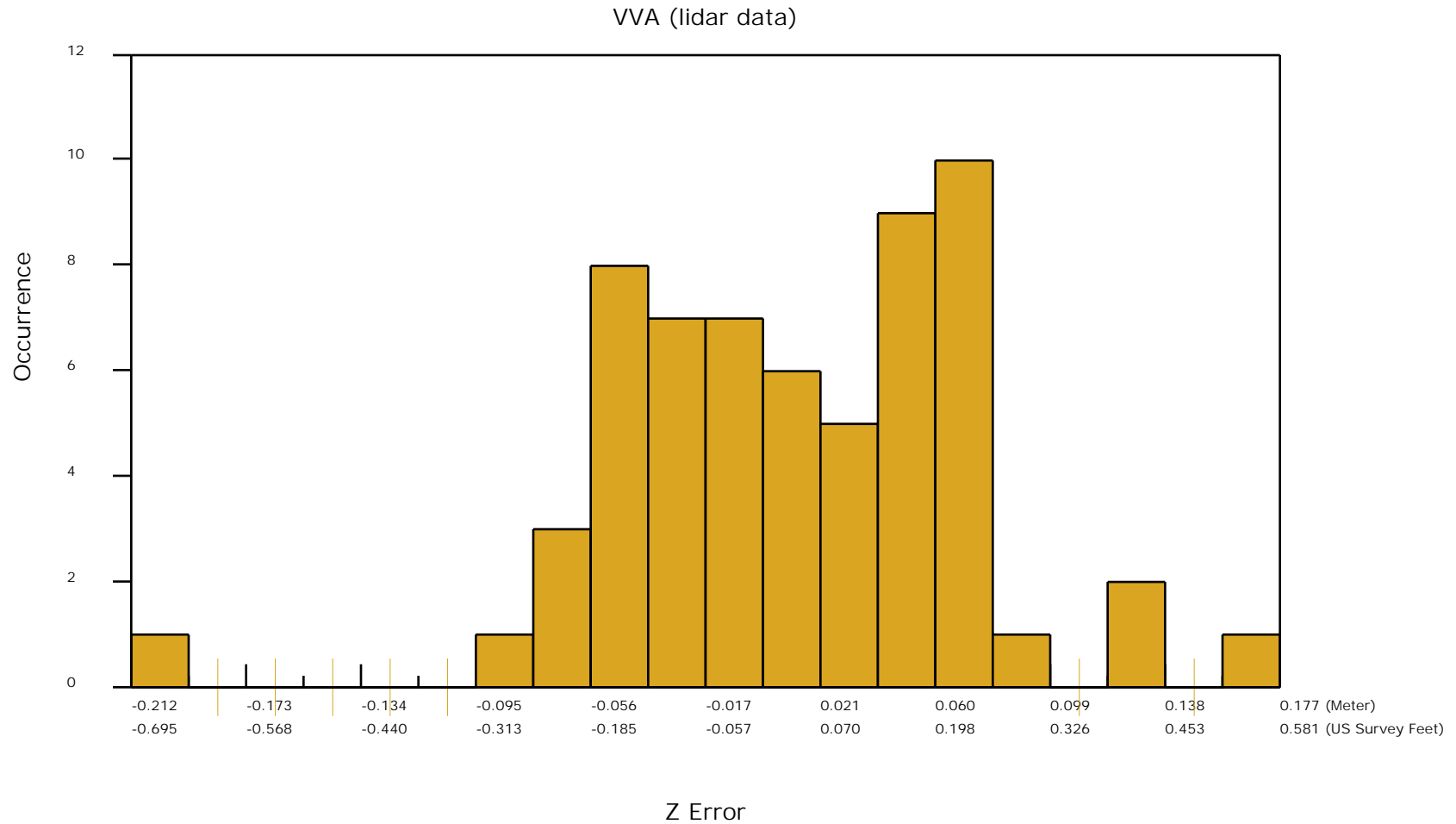
[Data Source - D:\00_ISGS\Final_Client_Tiles1](#)



DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to show a frequency distribution chart of the vegetated vertical accuracy (VVA) of the lidar point cloud data measured against surveyed ground check points.

[Data Source - D:\00_ISGS\Final_Client_Tiles1](#)



DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to report the results of measuring the DEM data against surveyed ground NVA (nonvegetated vertical accuracy) check points. All XY coordinates and Z values reported are in the selected data units.

NVA (DEM)

| ID | X | Y | Coverage | Z | Z From Lidar | Z Error | Description | Comments |
|--------|-------------|-------------|----------|---------|--------------|---------|-------------|----------|
| NVA601 | 962325.713 | 949032.189 | Yes | 650.446 | 650.451 | 0.005 | LIPT | |
| NVA602 | 1181412.802 | 1042574.229 | Yes | 688.75 | 688.815 | 0.065 | LIPT | |
| NVA603 | 1070704.336 | 1079529.193 | Yes | 661.591 | 661.421 | -0.170 | LIPT | |
| NVA604 | 1040312.168 | 992149.696 | Yes | 678.103 | 678.031 | -0.072 | LIPT | |
| NVA605 | 993024.097 | 1096299.191 | Yes | 677.18 | 676.993 | -0.187 | LIPT | |
| NVA606 | 945287.236 | 1065780.193 | Yes | 669.06 | 669.117 | 0.057 | LIPT | |
| NVA607 | 1066825.625 | 1042604.937 | Yes | 682.007 | 681.924 | -0.083 | LIPT | |
| NVA608 | 1168138.864 | 1026667.479 | Yes | 629.837 | 629.934 | 0.097 | LIPT | |
| NVA609 | 1139292.072 | 1111948.038 | Yes | 671.898 | 671.862 | -0.036 | LIPT | |
| NVA610 | 1038817.23 | 1097911.495 | Yes | 649.772 | 649.518 | -0.254 | LIPT | |
| NVA611 | 1039251.305 | 960177.595 | Yes | 547.976 | 547.943 | -0.033 | LIPT | |
| NVA612 | 1066412.818 | 939636.011 | Yes | 620.207 | 620.118 | -0.089 | LIPT | |
| NVA613 | 1172790.083 | 954058.907 | Yes | 537.681 | 537.713 | 0.032 | LIPT | |
| NVA614 | 1090230.563 | 1150421.327 | Yes | 645.501 | 645.516 | 0.015 | LIPT | |
| NVA615 | 946881.153 | 999170.101 | Yes | 670.238 | 670.124 | -0.114 | LIPT | |
| NVA616 | 1208019.862 | 989533.776 | Yes | 462.793 | 462.982 | 0.189 | LIPT | |
| NVA617 | 1137229.485 | 1057697.698 | Yes | 720.072 | 720.229 | 0.157 | LIPT | |
| NVA618 | 1174704.845 | 1171250.915 | Yes | 679.092 | 679.137 | 0.045 | LIPT | |
| NVA619 | 982617.167 | 1138063.328 | Yes | 693.366 | 693.143 | -0.223 | LIPT | |
| NVA620 | 1082328.795 | 993311.477 | Yes | 665.421 | 665.389 | -0.032 | LIPT | |
| NVA621 | 1112251.472 | 1052305.456 | Yes | 734.58 | 734.706 | 0.126 | LIPT | |
| NVA622 | 960288.045 | 1108373.597 | Yes | 655.48 | 655.566 | 0.086 | LIPT | |
| NVA623 | 1000487.36 | 1025904.763 | Yes | 701.844 | 701.735 | -0.109 | LIPT | |
| NVA624 | 1099041.276 | 919061.756 | Yes | 576.989 | 577.085 | 0.096 | LIPT | |
| NVA625 | 1049632.468 | 1071436.363 | Yes | 662.417 | 662.236 | -0.181 | LIPT | |
| NVA626 | 1000989.97 | 1164390.651 | Yes | 696.145 | 696.170 | 0.025 | LIPT | |
| NVA627 | 1164122.999 | 1080782.308 | Yes | 671.598 | 671.577 | -0.021 | LIPT | |
| NVA628 | 1032814.496 | 1018396.329 | Yes | 683.159 | 683.164 | 0.005 | LIPT | |
| NVA629 | 1192287.187 | 1100677.806 | Yes | 631.038 | 631.085 | 0.047 | LIPT | |
| NVA630 | 1140924.715 | 1138826.669 | Yes | 661.111 | 661.248 | 0.137 | LIPT | |

Check Points Vertical Accuracy - continued

| ID | X | Y | Coverage | Z | Z From Lidar | Z Error | Description | Comments |
|--------|-------------|-------------|----------|---------|--------------|---------|-------------|----------|
| NVA631 | 946328.056 | 954408.298 | Yes | 649.943 | 649.953 | 0.010 | LIPT | |
| NVA632 | 1121315.1 | 1015254.044 | Yes | 682.722 | 682.935 | 0.213 | LIPT | |
| NVA633 | 1191790.123 | 934242.327 | Yes | 451.136 | 451.439 | 0.303 | LIPT | |
| NVA634 | 1082007.163 | 1014470.286 | Yes | 729.567 | 729.451 | -0.116 | LIPT | |
| NVA635 | 1059486.078 | 1138350.608 | Yes | 641.906 | 641.751 | -0.155 | LIPT | |
| NVA636 | 1008238.625 | 986180.905 | Yes | 687.371 | 687.416 | 0.045 | LIPT | |
| NVA637 | 971386.372 | 1002634.883 | Yes | 752.009 | 751.849 | -0.160 | LIPT | |
| NVA638 | 948116.754 | 1169890.151 | Yes | 672.663 | 672.760 | 0.097 | LIPT | |
| NVA639 | 1050723.631 | 923195.616 | Yes | 603.228 | 603.120 | -0.108 | LIPT | |
| NVA640 | 945273.177 | 912178.039 | Yes | 599.634 | 599.538 | -0.096 | LIPT | |
| NVA641 | 1008418.865 | 951687.626 | Yes | 597.483 | 597.606 | 0.123 | LIPT | |
| NVA642 | 1003240.87 | 1066107.717 | Yes | 663.456 | 663.515 | 0.059 | LIPT | |
| NVA643 | 1091095.562 | 966132.462 | Yes | 640.094 | 640.451 | 0.357 | LIPT | |
| NVA644 | 1070623.781 | 1124564.918 | Yes | 650.854 | 650.570 | -0.284 | LIPT | |
| NVA645 | 1138287.949 | 947522.9765 | Yes | 585.285 | 585.581 | 0.296 | LIPT | |
| NVA646 | 971637.072 | 937120.883 | Yes | 623.672 | 623.644 | -0.028 | LIPT | |
| NVA647 | 1008583.818 | 912108.308 | Yes | 584.516 | 584.493 | -0.023 | LIPT | |
| NVA648 | 1166664.553 | 1112951.319 | Yes | 643.898 | 643.977 | 0.079 | LIPT | |
| NVA649 | 1095848.067 | 1110428.649 | Yes | 662.611 | 662.453 | -0.158 | LIPT | |
| NVA650 | 1132871.191 | 1154673.441 | Yes | 669.2 | 669.264 | 0.064 | LIPT | |
| NVA651 | 1038822.436 | 1117343.298 | Yes | 636.669 | 636.378 | -0.291 | LIPT | |
| NVA652 | 1118953.655 | 1111102.303 | Yes | 669.574 | 669.488 | -0.086 | LIPT | |
| NVA653 | 1049826.573 | 1037237.567 | Yes | 669.252 | 669.212 | -0.040 | LIPT | |
| NVA654 | 944960.166 | 1138042.722 | Yes | 665.181 | 665.038 | -0.143 | LIPT | |
| NVA655 | 1115019.756 | 968157.689 | Yes | 616.636 | 616.958 | 0.322 | LIPT | |
| NVA656 | 945956.13 | 1039349.159 | Yes | 660.657 | 660.695 | 0.038 | LIPT | |
| NVA657 | 1028283.825 | 1060619.487 | Yes | 675.873 | 676.016 | 0.143 | LIPT | |
| NVA658 | 1194257.432 | 1066480.595 | Yes | 672.219 | 672.285 | 0.066 | LIPT | |
| NVA659 | 1032950.645 | 1148778.068 | Yes | 651.317 | 651.002 | -0.315 | LIPT | |
| NVA660 | 1188638.727 | 1140298.696 | Yes | 626.921 | 626.981 | 0.060 | LIPT | |
| NVA661 | 1201934.29 | 1006170.228 | Yes | 576.483 | 576.631 | 0.148 | LIPT | |
| NVA662 | 1059280.88 | 1170250.203 | Yes | 667.048 | 666.945 | -0.103 | LIPT | |
| NVA663 | 1054986.322 | 971047.422 | Yes | 616.356 | 616.667 | 0.311 | LIPT | |
| NVA664 | 966335.505 | 1039305.632 | Yes | 687.847 | 687.825 | -0.022 | LIPT | |
| NVA665 | 1188254.836 | 1156114.872 | Yes | 640.493 | 640.497 | 0.004 | LIPT | |

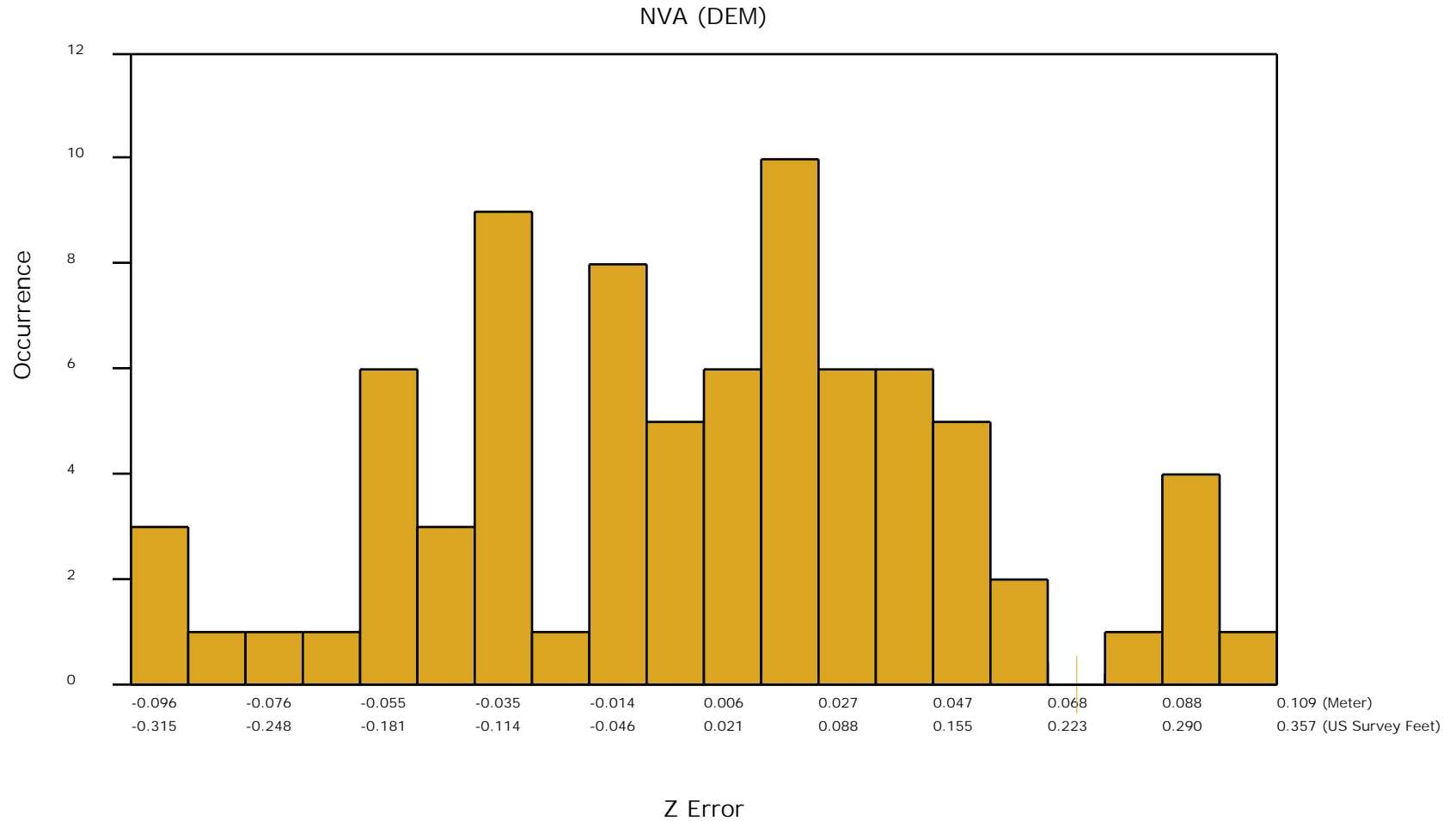
Check Points Vertical Accuracy - continued

| ID | X | Y | Coverage | Z | Z From Lidar | Z Error | Description | Comments |
|--------|-------------|-------------|----------|---------|--------------|---------|-------------|----------|
| NVA666 | 1180685.373 | 912348.898 | Yes | 448.505 | 448.708 | 0.203 | LIPT | |
| NVA667 | 1169000.899 | 1139171.738 | Yes | 643.112 | 643.185 | 0.073 | LIPT | |
| NVA668 | 1116181.719 | 1084394.203 | Yes | 675.587 | 675.686 | 0.099 | LIPT | |
| NVA669 | 945186.153 | 1087019.072 | Yes | 664.898 | 664.986 | 0.088 | LIPT | |
| NVA670 | 971209.839 | 912011.699 | Yes | 587.047 | 586.938 | -0.109 | LIPT | |
| NVA671 | 1208390.227 | 1071893.534 | Yes | 627.032 | 627.304 | 0.272 | LIPT | |
| NVA672 | 1208654.592 | 1164453.551 | Yes | 622.242 | 622.424 | 0.182 | LIPT | |
| NVA673 | 1164992.032 | 985732.004 | Yes | 649.751 | 649.913 | 0.162 | LIPT | |
| NVA674 | 982739.298 | 1055267.697 | Yes | 672.363 | 672.478 | 0.115 | LIPT | |
| NVA675 | 1095361.245 | 1170362.262 | Yes | 701.982 | 701.807 | -0.175 | LIPT | |
| NVA676 | 1070761.187 | 1101960.978 | Yes | 658.001 | 657.855 | -0.146 | LIPT | |
| NVA677 | 1187474.788 | 976639.1 | Yes | 540.059 | 540.247 | 0.188 | LIPT | |
| NVA678 | 1111436.906 | 993921.02 | Yes | 641.105 | 641.242 | 0.137 | LIPT | |
| NVA679 | 1206932.886 | 1127347.063 | Yes | 618.369 | 618.452 | 0.083 | LIPT | |

DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to show a frequency distribution chart of the non-vegetated vertical accuracy (NVA) of the DEM data measured against surveyed ground check points.

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DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to report the results of measuring the DEM data against surveyed ground VVA (vegetated vertical accuracy) check points. All XY coordinates and Z values reported are in the selected data units.

VVA (DEM)

| ID | X | Y | Coverage | Z | Z From Lidar | Z Error | Description | Comments |
|--------|-------------|-------------|----------|---------|--------------|---------|-------------|----------|
| VVA701 | 963224.142 | 949063.478 | Yes | 644.829 | 645.028 | 0.199 | LIPT | |
| VVA702 | 1181486.881 | 1042835.69 | Yes | 676.13 | 676.263 | 0.133 | LIPT | |
| VVA703 | 1070692.508 | 1079592.885 | Yes | 660.229 | 660.086 | -0.143 | LIPT | |
| VVA704 | 1040117.343 | 992597.8 | Yes | 668.143 | 667.503 | -0.640 | LIPT | |
| VVA705 | 993121.939 | 1096653.301 | Yes | 677.383 | 677.210 | -0.173 | LIPT | |
| VVA706 | 945755.904 | 1065825.234 | Yes | 667.996 | 668.193 | 0.197 | LIPT | |
| VVA707 | 1069519.731 | 1043587.383 | Yes | 691.954 | 691.877 | -0.077 | LIPT | |
| VVA708 | 1167561.584 | 1027534.951 | Yes | 633.57 | 633.990 | 0.420 | LIPT | |
| VVA709 | 1143416.929 | 1112184.705 | Yes | 664.477 | 664.487 | 0.010 | LIPT | |
| VVA710 | 1040185.436 | 1099618.639 | Yes | 646.546 | 646.396 | -0.150 | LIPT | |
| VVA711 | 1040377.162 | 960171.193 | Yes | 578.813 | 578.872 | 0.059 | LIPT | |
| VVA712 | 1063719.528 | 939699.598 | Yes | 612.124 | 611.979 | -0.145 | LIPT | |
| VVA713 | 1172618.775 | 955430.984 | Yes | 537.007 | 537.215 | 0.208 | LIPT | |
| VVA714 | 1088985.312 | 1150354.182 | Yes | 643.044 | 643.232 | 0.188 | LIPT | |
| VVA715 | 947537.982 | 999220.375 | Yes | 670.194 | 670.098 | -0.096 | LIPT | |
| VVA716 | 1208118.603 | 989462.972 | Yes | 459.557 | 459.824 | 0.267 | LIPT | |
| VVA717 | 1137159.785 | 1057803.361 | Yes | 724.247 | 724.396 | 0.149 | LIPT | |
| VVA718 | 1174465.797 | 1170279.923 | Yes | 673.758 | 673.878 | 0.120 | LIPT | |
| VVA719 | 982949.201 | 1138155.437 | Yes | 692.666 | 692.532 | -0.134 | LIPT | |
| VVA720 | 1081057.238 | 993369.609 | Yes | 654.873 | 654.800 | -0.073 | LIPT | |
| VVA721 | 1109580.792 | 1052328.776 | Yes | 724.875 | 724.951 | 0.076 | LIPT | |
| VVA722 | 960030.482 | 1108385.17 | Yes | 652.432 | 652.682 | 0.250 | LIPT | |
| VVA723 | 1000104.55 | 1025751.422 | Yes | 698.694 | 698.514 | -0.180 | LIPT | |
| VVA724 | 1098909.405 | 919909.479 | Yes | 578.549 | 578.727 | 0.178 | LIPT | |
| VVA725 | 1049497.737 | 1071391.311 | Yes | 660.395 | 660.226 | -0.169 | LIPT | |
| VVA726 | 999108.797 | 1164936.427 | Yes | 687.151 | 687.283 | 0.132 | LIPT | |
| VVA727 | 1164733.18 | 1079950.184 | Yes | 675.646 | 675.653 | 0.007 | LIPT | |
| VVA728 | 1032196.102 | 1020096.874 | Yes | 683.885 | 683.914 | 0.029 | LIPT | |
| VVA729 | 1190997.829 | 1100702.598 | Yes | 632.128 | 632.357 | 0.229 | LIPT | |
| VVA730 | 1141441.497 | 1138803.972 | Yes | 661.325 | 661.496 | 0.171 | LIPT | |

Check Points Vertical Accuracy - continued

| ID | X | Y | Coverage | Z | Z From Lidar | Z Error | Description | Comments |
|--------|-------------|-------------|----------|---------|--------------|---------|-------------|----------|
| VVA731 | 946143.125 | 954117.157 | Yes | 649.611 | 649.762 | 0.151 | LIPT | |
| VVA732 | 1114604.381 | 1017248.725 | Yes | 668.339 | 668.307 | -0.032 | LIPT | |
| VVA733 | 1192083.663 | 933929.211 | Yes | 457.212 | 457.459 | 0.247 | LIPT | |
| VVA734 | 1078138.381 | 1014546.121 | Yes | 764.865 | 764.745 | -0.120 | LIPT | |
| VVA735 | 1062651.115 | 1138456.716 | Yes | 641.69 | 641.839 | 0.149 | LIPT | |
| VVA736 | 1009588.332 | 985662.747 | Yes | 689.023 | 688.905 | -0.118 | LIPT | |
| VVA737 | 970721.361 | 1002934.502 | Yes | 751.536 | 751.398 | -0.138 | LIPT | |
| VVA738 | 946067.271 | 1169938.889 | Yes | 669.827 | 670.275 | 0.448 | LIPT | |
| VVA739 | 1049398.525 | 923048.321 | Yes | 600.536 | 600.481 | -0.055 | LIPT | |
| VVA740 | 945202.41 | 914169.761 | Yes | 617.871 | 617.830 | -0.041 | LIPT | |
| VVA741 | 1009398.991 | 949078.152 | Yes | 600.31 | 600.499 | 0.189 | LIPT | |
| VVA742 | 987763.999 | 1069038.055 | Yes | 660.904 | 661.123 | 0.219 | LIPT | |
| VVA723 | 1086401.081 | 964425.699 | Yes | 639.261 | 639.081 | -0.180 | LIPT | |
| VVA744 | 1070538.481 | 1129951.67 | Yes | 635.472 | 635.276 | -0.196 | LIPT | |
| VVA745 | 1139167.893 | 947585.335 | Yes | 583.04 | 583.637 | 0.597 | LIPT | |
| VVA746 | 971546.057 | 935823.275 | Yes | 620.371 | 620.282 | -0.089 | LIPT | |
| VVA747 | 1008641.156 | 912282.972 | Yes | 583.529 | 583.549 | 0.020 | LIPT | |
| VVA748 | 1160246.489 | 1112553.136 | Yes | 657.535 | 657.378 | -0.157 | LIPT | |
| VVA749 | 1096337.68 | 1111054.918 | Yes | 662.189 | 661.985 | -0.204 | LIPT | |
| VVA750 | 1132820.619 | 1153960.581 | Yes | 666.713 | 666.840 | 0.127 | LIPT | |
| VVA751 | 1038453.889 | 1118158.336 | Yes | 635.962 | 635.772 | -0.190 | LIPT | |
| VVA752 | 1118888.162 | 1110285.493 | Yes | 667.014 | 666.974 | -0.040 | LIPT | |
| VVA753 | 1049756.956 | 1037526.871 | Yes | 671.247 | 671.152 | -0.095 | LIPT | |
| VVA754 | 946612.044 | 1142607.493 | Yes | 665.095 | 665.059 | -0.036 | LIPT | |
| VVA755 | 1114882.351 | 968343.069 | Yes | 615.934 | 616.163 | 0.229 | LIPT | |
| VVA756 | 944828.33 | 1040200.413 | Yes | 655.358 | 655.475 | 0.117 | LIPT | |
| VVA757 | 1029407.712 | 1060455.575 | Yes | 678.859 | 678.958 | 0.099 | LIPT | |
| VVA758 | 1197707.898 | 1066551.848 | Yes | 661.096 | 661.294 | 0.198 | LIPT | |
| VVA759 | 1032983.833 | 1148951.467 | Yes | 660.332 | 659.950 | -0.382 | LIPT | |
| VVA760 | 1189446.274 | 1140175.16 | Yes | 616.88 | 617.016 | 0.136 | LIPT | |
| VVA761 | 1201525.642 | 1005666.566 | Yes | 560.301 | 560.370 | 0.069 | LIPT | |

DPH-11 Report on Absolute Vertical Accuracy - continued

The purpose of this section is to show a frequency distribution chart of the vegetated vertical accuracy (VVA) of the DEM data measured against surveyed ground check points.

[Data Source - D:\00_ISGS\Final_Client_Tiles1](#)

