

**MO\_Southwest\_2021\_D21**  
**Survey Report**

Contract Number: G16PC00044

Task Order Number: 140G0221F0295



**Contractor Point-of-Contact (POC)**

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# Overview

Digital Aerial Solutions, LLC (DAS) with contract number G16PC00044 was contracted by the United States Geological Survey under task order number 140G0221F0295 to collect a high-resolution LiDAR data set covering 4,065 square miles in the state of Missouri. Each of these categories was spread out as evenly as possible throughout the Area of Interest (AOI). The survey was completed using the Global Positioning System (GPS). Each observation was identified in the field and surveyed utilizing GPS receivers, collecting GNSS and GLONASS information and utilizing a Leica Smart-Net RTK network. In accordance with section C.1.e.(i)(c) of the task order, the spatial reference system used was:

## **Spatial Reference System:**

Coordinate System: Universal Transverse Mercator UTM Zone 15

Horizontal Datum: North American Datum 1983 (2011)

Vertical Datum: North American Vertical Datum of 1988

Units: Meters

Geoid Model: Geoid 18

Section C.1.e.(i)(c) of the task order outlines the ground control minimum requirements and specifications for this LiDAR project. 34 Supplemental ground control points were collected and used to support the airborne GPS solution and positional accuracy. DAS also collected more than the required number of Non-Vegetated Vertical Accuracy (NVA) and Vegetated Vertical Accuracy (VVA) Quality Checkpoints as stated in the task order. These checkpoints serve as an independent delivery to the client and were not incorporated into the vertical solution.

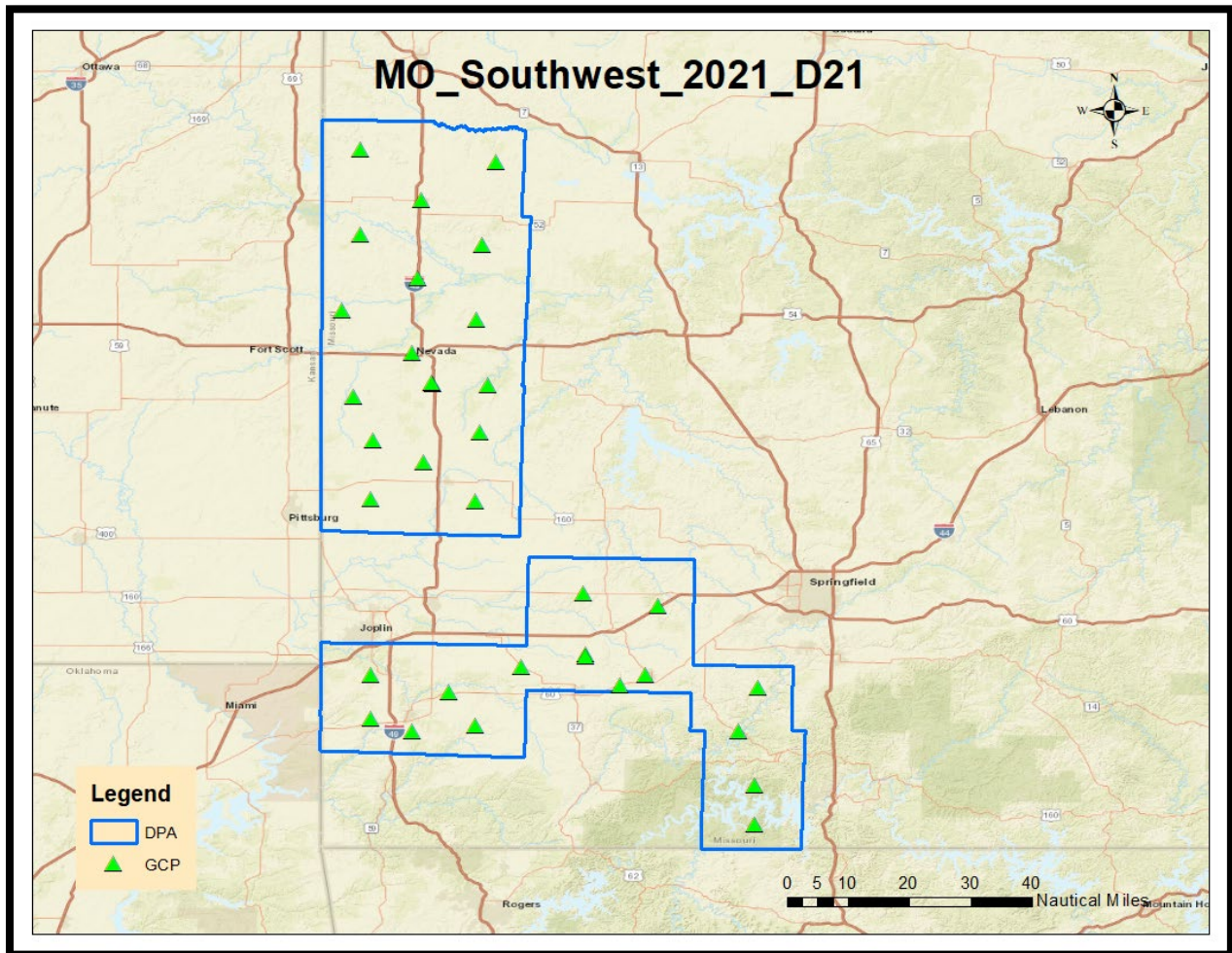
# Glossary of Terms

## **Term - Definition**

ATTN	- Attention
BE	- Bare Earth Checkpoint (see NVA)
CTRL	- Control
DAS	- Digital Aerial Solutions, LLC
Ellip	- Ellipsoid Height
FIPS	- Federal Information Processing Standard
GPS	- Global Positioning Systems
UT	- Urban Terrain (see NVA)
HV	- High Vegetation (see VVA)
ID	- Identification
LV	- Low Vegetation (see VVA)
LiDAR	- Light Detection and Ranging
MV	- Medium Vegetation (see VVA)
NAD83	- North American Datum of 1983
NAVD88	- North American Vertical Datum of 1988
NGS	- National Geodetic Survey
NGTOC	- National Geospatial Technical Operations Center
NVA	- Non-Vegetated Vertical Accuracy
Ortho	- Orthometric Height
POC	- Point of Contact
RTK	- Real Time Kinematics
USGS	- United States Geological Survey
VP	- Vice President
VVA	- Vegetated Vertical Accuracy

# Supplemental Ground Control

The Map shows the overall distribution of the Supplemental Ground Control throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is Universal Transverse Mercator UTM Zone 15, North American Datum 1983 (2011), North American Vertical Datum of 1988, Geoid 18 and using Meters for measurement.



**TABLE: Ground Control Points**

<b>Point ID</b>	<b>Easting</b>	<b>Northing</b>	<b>Ortho</b>
<b>GS0036</b>	461808.765	4087795.169	373.936
<b>GS0041</b>	456891.723	4074720.654	298.961
<b>GS0050</b>	460712.58	4058161.116	382.169
<b>GS0055</b>	460794.362	4046600.727	399.665
<b>GS0066</b>	420108.718	4098234.446	398.728
<b>GS0098</b>	377937.598	4075442.909	379.646
<b>GS0105</b>	367868.411	4079493.588	360.427
<b>GS0111</b>	368193.998	4092364.236	346.48
<b>GS0122</b>	394131.351	4144283.645	297.448
<b>GS0127</b>	381851.552	4156268.481	299.54
<b>GS0134</b>	368869.675	4145502.755	291.67
<b>GS0145</b>	395585.597	4165369.259	291.015
<b>GS0161</b>	365359.204	4176439.748	243.085
<b>GS0173</b>	384394.387	4179950.349	265.771
<b>GS0176</b>	397416.602	4179311.206	277.939
<b>GS0190</b>	395073.848	4199090.483	256.427
<b>GS0200</b>	381201.106	4211890.635	238.189
<b>GS0213</b>	367701.485	4225337.319	254.01
<b>GS0221</b>	363038.656	4202374.374	242.058
<b>GS0231</b>	396673.145	4221619.693	261.966
<b>GS0240</b>	400176.321	4246566.161	282.029
<b>GS0005</b>	420168.763	4097307.295	409.61
<b>GS0011</b>	419896.5	4116342.113	364.199
<b>GS0020</b>	437831.657	4112608.087	372.501
<b>GS0026</b>	428553.208	4088708.098	410.482
<b>GS0028</b>	434693.61	4091812.33	415.06
<b>GS0074</b>	404636.462	4094520.021	374.576
<b>GS0081</b>	393138.556	4077020.183	373.744
<b>GS0090</b>	386965.154	4086945.657	344.5
<b>GS0152</b>	384019.27	4180314.4	262.733
<b>GS0165</b>	369828.108	4163267.139	272.714
<b>GS0183</b>	379526.289	4189535.549	255.136
<b>GS0206</b>	382491.857	4235382.729	257.296
<b>GS0250</b>	368129.088	4250767.807	275.611

**GS0036**



**Point ID:** GS0036

**Northing:** 4087795.169 Meters

**Easting:** 461808.765 Meters

**Orthometric Height:** 373.936 Meters

**Latitude:** 36 56 7.542419 N

**Longitude:** 93 25 43.920912 W

**Ellipsoid Height:** 344.895 Meters

**GS0041**



**Point ID: GS0041**

**Northing: 4074720.654 Meters**

**Easting: 456891.723 Meters**

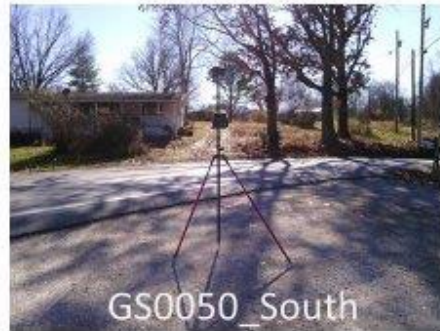
**Orthometric Height: 298.961 Meters**

**Latitude: 36 49 2.491317 N**

**Longitude: 93 29 0.015783 W**

**Ellipsoid Height: 269.993 Meters**

**GS0050**



**Point ID:** GS0050

**Northing:** 4058161.116 Meters

**Easting:** 460712.58 Meters

**Orthometric Height:** 382.169 Meters

**Latitude:** 36 40 5.693734 N

**Longitude:** 93 26 22.727442 W

**Ellipsoid Height:** 353.369 Meters



**GS0055**



**Point ID: GS0055**

**Northing: 4046600.727 Meters**

**Easting: 460794.362 Meters**

**Orthometric Height: 399.665 Meters**

**Latitude: 36 33 50.535481 N**

**Longitude: 93 26 17.308724 W**

**Ellipsoid Height: 371.044 Meters**

**GS0066**



**Point ID:** GS0066

**Northing:** 4098234.446 Meters

**Easting:** 420108.718 Meters

**Orthometric Height:** 398.728 Meters

**Latitude:** 37 1 36.867536 N

**Longitude:** 93 53 53.529762 W

**Ellipsoid Height:** 369.537 Meters

**GS0098**



**Point ID:** GS0098

**Northing:** 4075442.909 Meters

**Easting:** 377937.598 Meters

**Orthometric Height:** 379.646 Meters

**Latitude:** 36 49 1.113373 N

**Longitude:** 94 22 6.766654 W

**Ellipsoid Height:** 350.727 Meters

**GS0105**



**Point ID:** GS0105

**Northing:** 4079493.588 Meters

**Easting:** 367868.411 Meters

**Orthometric Height:** 360.427 Meters

**Latitude:** 36 51 7.655732 N

**Longitude:** 94 28 55.602660 W

**Ellipsoid Height:** 331.335 Meters

**GS0111**



**Point ID: GS0111**

**Northing: 4092364.236 Meters**

**Easting: 368193.998 Meters**

**Orthometric Height: 346.48 Meters**

**Latitude: 36 58 5.363710 N**

**Longitude: 94 28 50.524894 W**

**Ellipsoid Height: 317.119 Meters**

**GS0122**



**Point ID:** GS0122

**Northing:** 4144283.645 Meters

**Easting:** 394131.351 Meters

**Orthometric Height:** 297.448 Meters

**Latitude:** 37 26 21.618891 N

**Longitude:** 94 11 48.311629 W

**Ellipsoid Height:** 266.951 Meters

**GS0127**



**Point ID: GS0127**

**Northing: 4156268.481 Meters**

**Easting: 381851.552 Meters**

**Orthometric Height: 299.54 Meters**

**Latitude: 37 32 45.059098 N**

**Longitude: 94 20 14.847580 W**

**Ellipsoid Height: 268.747 Meters**

**GS0134**



**Point ID:** GS0134

**Northing:** 4145502.755 Meters

**Easting:** 368869.675 Meters

**Orthometric Height:** 291.67 Meters

**Latitude:** 37 26 49.516366 N

**Longitude:** 94 28 56.828309 W

**Ellipsoid Height:** 260.978 Meters



**GS0145**



**Point ID:** GS0145

**Northing:** 4165369.259 Meters

**Easting:** 395585.597 Meters

**Orthometric Height:** 291.015 Meters

**Latitude:** 37 37 46.275334 N

**Longitude:** 94 10 59.939018 W

**Ellipsoid Height:** 260.162 Meters

**GS0161**



**Point ID:** GS0161

**Northing:** 4176439.748 Meters

**Easting:** 365359.204 Meters

**Orthometric Height:** 243.085 Meters

**Latitude:** 37 43 31.210055 N

**Longitude:** 94 31 40.130905 W

**Ellipsoid Height:** 211.894 Meters

**GS0173**



**Point ID:** GS0173

**Northing:** 4179950.349 Meters

**Easting:** 384394.387 Meters

**Orthometric Height:** 265.771 Meters

**Latitude:** 37 45 34.456313 N

**Longitude:** 94 18 44.749328 W

**Ellipsoid Height:** 234.557 Meters

**GS0176**



GS0176\_North



GS0176\_East



GS0176\_West



GS0176\_South

**Point ID:** GS0176

**Northing:** 4179311.206 Meters

**Easting:** 397416.602 Meters

**Orthometric Height:** 277.939 Meters

**Latitude:** 37 45 19.314591 N

**Longitude:** 94 9 52.319532 W

**Ellipsoid Height:** 246.791 Meters

**GS0190**



**Point ID: GS0190**

**Northing: 4199090.483 Meters**

**Easting: 395073.848 Meters**

**Orthometric Height: 256.427 Meters**

**Latitude: 37 56 0.002632 N**

**Longitude: 94 11 38.377082 W**

**Ellipsoid Height: 224.814 Meters**

**GS0200**



**Point ID:** GS0200

**Northing:** 4211890.635 Meters

**Easting:** 381201.106 Meters

**Orthometric Height:** 238.189 Meters

**Latitude:** 38 2 49.059756 N

**Longitude:** 94 21 14.173269 W

**Ellipsoid Height:** 206.386 Meters

**GS0213**



**Point ID: GS0213**

**Northing: 4225337.319 Meters**

**Easting: 367701.485 Meters**

**Orthometric Height: 254.01 Meters**

**Latitude: 38 9 58.456630 N**

**Longitude: 94 30 36.851528 W**

**Ellipsoid Height: 222.045 Meters**

**GS0221**



**Point ID: GS0221**

**Northing: 4202374.374 Meters**

**Easting: 363038.656 Meters**

**Orthometric Height: 242.058 Meters**

**Latitude: 37 57 31.168710 N**

**Longitude: 94 33 32.578255 W**

**Ellipsoid Height: 210.447 Meters**



**GS0231**



**Point ID: GS0231**

**Northing: 4221619.693 Meters**

**Easting: 396673.145 Meters**

**Orthometric Height: 261.966 Meters**

**Latitude: 38 8 11.495855 N**

**Longitude: 94 10 44.574825 W**

**Ellipsoid Height: 229.925 Meters**

**GS0240**



**Point ID:** GS0240

**Northing:** 4246566.161 Meters

**Easting:** 400176.321 Meters

**Orthometric Height:** 282.029 Meters

**Latitude:** 38 21 42.144502 N

**Longitude:** 94 8 33.345365 W

**Ellipsoid Height:** 249.763 Meters

**GS0005**



**Point ID: GS0005**

**Northing: 4097307.295 Meters**

**Easting: 420168.763 Meters**

**Orthometric Height: 409.61 Meters**

**Latitude: 37 1 6.801894 N**

**Longitude: 93 53 50.745860 W**

**Ellipsoid Height: 380.443 Meters**

**GS0011**



**Point ID: GS0011**

**Northing: 4116342.113 Meters**

**Easting: 419896.5 Meters**

**Orthometric Height: 364.199 Meters**

**Latitude: 37 11 24.347772 N**

**Longitude: 93 54 9.083030 W**

**Ellipsoid Height: 334.507 Meters**

**GS0020**



**Point ID: GS0020**

**Northing: 4112608.087 Meters**

**Easting: 437831.657 Meters**

**Orthometric Height: 372.501 Meters**

**Latitude: 37 9 28.105198 N**

**Longitude: 93 42 0.552386 W**

**Ellipsoid Height: 342.982 Meters**

**GS0026**



**Point ID:** GS0026

**Northing:** 4088708.098 Meters

**Easting:** 428553.208 Meters

**Orthometric Height:** 410.482 Meters

**Latitude:** 36 56 30.198860 N

**Longitude:** 93 48 8.530465 W

**Ellipsoid Height:** 381.498 Meters

**GS0028**



**Point ID: GS0028**

**Northing: 4091812.33 Meters**

**Easting: 434693.61 Meters**

**Orthometric Height: 415.06 Meters**

**Latitude: 36 58 12.534713 N**

**Longitude: 93 44 1.264992 W**

**Ellipsoid Height: 385.983 Meters**

**GS0074**



**Point ID:** GS0074

**Northing:** 4094520.021 Meters

**Easting:** 404636.462 Meters

**Orthometric Height:** 374.576 Meters

**Latitude:** 36 59 31.149969 N

**Longitude:** 94 4 17.971565 W

**Ellipsoid Height:** 345.429 Meters



**GS0081**



**Point ID:** GS0081

**Northing:** 4077020.183 Meters

**Easting:** 393138.556 Meters

**Orthometric Height:** 373.744 Meters

**Latitude:** 36 49 58.910456 N

**Longitude:** 94 11 54.143694 W

**Ellipsoid Height:** 344.882 Meters

**GS0090**



**Point ID:** GS0090

**Northing:** 4086945.657 Meters

**Easting:** 386965.154 Meters

**Orthometric Height:** 344.5 Meters

**Latitude:** 36 55 18.354593 N

**Longitude:** 94 16 8.644320 W

**Ellipsoid Height:** 315.391 Meters

**GS0152**



**Point ID: GS0152**

**Northing: 4180314.4 Meters**

**Easting: 384019.27 Meters**

**Orthometric Height: 262.733 Meters**

**Latitude: 37 45 46.094817 N**

**Longitude: 94 19 0.285849 W**

**Ellipsoid Height: 231.51 Meters**

**GS0165**



**Point ID:** GS0165

**Northing:** 4163267.139 Meters

**Easting:** 369828.108 Meters

**Orthometric Height:** 272.714 Meters

**Latitude:** 37 36 26.250130 N

**Longitude:** 94 28 29.167986 W

**Ellipsoid Height:** 241.76 Meters

**GS0183**



**Point ID: GS0183**

**Northing: 4189535.549 Meters**

**Easting: 379526.289 Meters**

**Orthometric Height: 255.136 Meters**

**Latitude: 37 50 43.121410 N**

**Longitude: 94 22 9.393129 W**

**Ellipsoid Height: 223.723 Meters**

**GS0206**



**Point ID: GS0206**

**Northing: 4235382.729 Meters**

**Easting: 382491.857 Meters**

**Orthometric Height: 257.296 Meters**

**Latitude: 38 15 31.671914 N**

**Longitude: 94 20 35.185712 W**

**Ellipsoid Height: 225.16 Meters**

**GS0250**



**Point ID:** GS0250

**Northing:** 4250767.807 Meters

**Easting:** 368129.088 Meters

**Orthometric Height:** 275.611 Meters

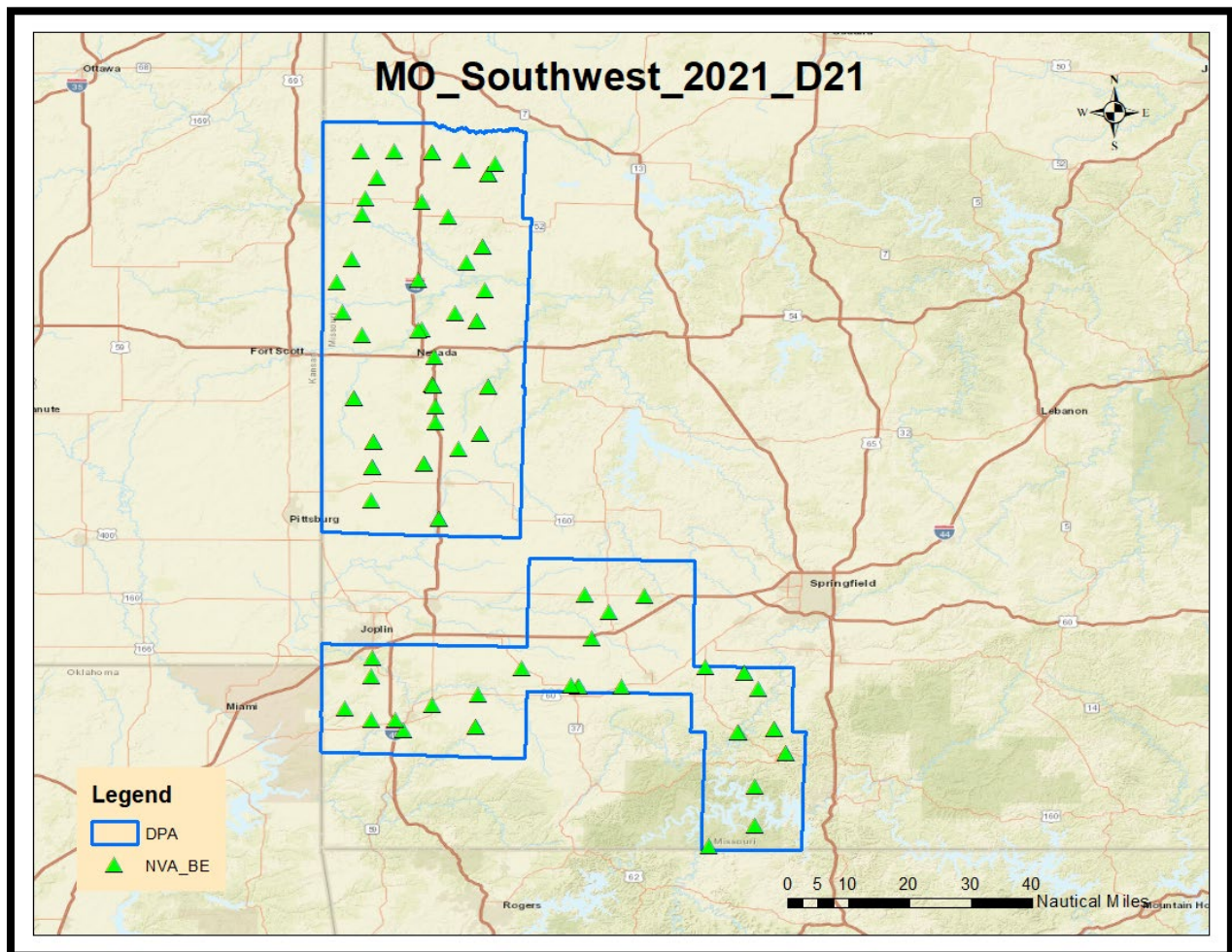
**Latitude:** 38 23 43.485092 N

**Longitude:** 94 30 36.347216 W

**Ellipsoid Height:** 243.485 Meters

## Non-Vegetated Vertical Accuracy Checkpoints Bare Earth

The Map shows the overall distribution of the Non-Vegetated Vertical Accuracy Checkpoint, Bare Earth throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is Universal Transverse Mercator UTM Zone 15, North American Datum 1983 (2011), North American Vertical Datum of 1988, Geoid 18 and using Meters for measurement.





**TABLE: Bare Earth**

Point ID	Easting	Northing	Ortho
GS0007	421702.703	4103358.517	374.745
GS0010	425838.46	4111322.109	371.505
GS0013	419943.795	4116339.246	362.856
GS0017	434517.446	4115996.573	380.507
GS0025	428575.056	4088719.069	410.856
GS0031	448938.029	4094316.62	413.759
GS0033	458505.363	4092680.12	408.299
GS0034	458529.177	4092678.726	408.407
GS0037	461827.316	4087807.073	374.859
GS0042	456868.514	4074727.275	299.274
GS0043	456846.394	4074733.875	299.528
GS0045	465580.174	4075558.942	406.492
GS0046	465597.885	4075545.977	406.771
GS0047	468264.394	4068359.962	398.493
GS0048	468280.974	4068375.008	399.915
GS0051	460706.385	4058187.932	379.856
GS0056	460805.29	4046620.813	399.084
GS0061	449443.965	4040409.492	348.257
GS0064	418267.561	4088577.797	423.007
GS0065	418298.206	4088572.934	422.898
GS0071	416460.466	4088978.869	412.298
GS0076	404669.167	4094507.472	374.941
GS0080	393933.508	4086658.076	365.465
GS0082	393122.954	4077038.658	374.25
GS0083	393114.456	4077018.932	374.094
GS0094	382614.384	4083630.771	362.674
GS0101	375545.05	4076178.983	360.524
GS0102	373763.217	4079366.135	368.443
GS0106	367898.789	4079491.597	360.536
GS0107	361601.321	4082886.769	291.253
GS0113	368210.357	4092363.543	346.343
GS0114	368517.384	4097985.893	286.069
GS0118	385282.523	4139872.408	282.424
GS0119	385293.012	4139889.036	282.396
GS0128	381835.804	4156252.818	299.866
GS0129	381839.716	4156286.809	299.21
GS0135	368912.579	4145496.869	289.243
GS0144	384671.66	4169013.311	277.439
GS0146	395564.179	4165373.565	290.798
GS0147	395542.457	4165374.454	290.745
GS0149	390131.29	4160735.167	298.529
GS0151	384730.417	4173750.349	278.792

<b>GS0153</b>	384039.471	4180325.197	262.846
<b>GS0154</b>	384061.733	4180326.872	262.967
<b>GS0159</b>	365358.118	4176397.634	243.456
<b>GS0160</b>	365358.921	4176417.822	243.227
<b>GS0166</b>	369789.886	4163264.999	271.973
<b>GS0167</b>	369787.213	4163240.628	271.721
<b>GS0168</b>	369350.292	4155483.757	287.474
<b>GS0170</b>	369310.875	4155486.06	286.041
<b>GS0175</b>	384407.133	4179995.615	265.443
<b>GS0177</b>	397419.618	4179340.537	277.505
<b>GS0178</b>	397419.578	4179361.04	277.381
<b>GS0182</b>	384790.264	4188433.376	265.84
<b>GS0186</b>	381816.233	4196907.243	250.636
<b>GS0189</b>	389872.768	4201812.538	241.71
<b>GS0191</b>	395047.768	4199091.877	256.608
<b>GS0192</b>	395025.029	4199093.188	257.105
<b>GS0194</b>	397217.84	4208665.143	258.263
<b>GS0198</b>	381124.456	4196587.089	242.073
<b>GS0201</b>	381215.565	4211872.568	237.978
<b>GS0208</b>	382533.886	4235405.442	258.441
<b>GS0210</b>	369134.412	4236516.188	265.103
<b>GS0211</b>	368137.132	4231731.873	238.217
<b>GS0217</b>	365487.169	4218252.952	264.454
<b>GS0220</b>	361892.208	4211417.014	274.227
<b>GS0223</b>	363042.866	4202339.39	240.498
<b>GS0225</b>	367492.809	4195596.987	242.702
<b>GS0230</b>	392838.005	4216909.817	236.35
<b>GS0232</b>	396651.477	4221611.149	263.271
<b>GS0233</b>	396627.08	4221607.861	263.308
<b>GS0234</b>	388599.446	4230934.664	275.63
<b>GS0236</b>	398390.672	4243368.175	272.28
<b>GS0237</b>	398370.123	4243369.85	272.18
<b>GS0238</b>	398348.879	4243370.741	272.302
<b>GS0241</b>	400160.919	4246546.059	281.968
<b>GS0243</b>	392072.113	4247612.38	266.971
<b>GS0245</b>	384951.39	4250336.264	257.294
<b>GS0246</b>	384970.549	4250325.708	258.006
<b>GS0247</b>	376082.62	4250642.176	299.772
<b>GS0249</b>	368146.825	4250767.374	275.897
<b>GS0252</b>	371751.634	4242853.928	243.446

**GS0007**



**Point ID:** GS0007

**Northing:** 4103358.517 Meters

**Easting:** 421702.703 Meters

**Orthometric Height:** 374.745 Meters

**Latitude:** 37 4 23.615954 N

**Longitude:** 93 52 50.942524 W

**Ellipsoid Height:** 345.405 Meters

**GS0010**



**Point ID: GS0010**

**Northing: 4111322.109 Meters**

**Easting: 425838.46 Meters**

**Orthometric Height: 371.505 Meters**

**Latitude: 37 8 43.228668 N**

**Longitude: 93 50 6.302194 W**

**Ellipsoid Height: 341.95 Meters**

**GS0013**



**Point ID:** GS0013

**Northing:** 4116339.246 Meters

**Easting:** 419943.795 Meters

**Orthometric Height:** 362.856 Meters

**Latitude:** 37 11 24.269356 N

**Longitude:** 93 54 7.163789 W

**Ellipsoid Height:** 333.164 Meters

**GS0017**



**Point ID: GS0017**

**Northing: 4115996.573 Meters**

**Easting: 434517.446 Meters**

**Orthometric Height: 380.507 Meters**

**Latitude: 37 11 17.240850 N**

**Longitude: 93 44 15.982675 W**

**Ellipsoid Height: 350.901 Meters**

**GS0025**



**Point ID:** GS0025

**Northing:** 4088719.069 Meters

**Easting:** 428575.056 Meters

**Orthometric Height:** 410.856 Meters

**Latitude:** 36 56 30.560814 N

**Longitude:** 93 48 7.650992 W

**Ellipsoid Height:** 381.871 Meters

**GS0031**



**Point ID:** GS0031

**Northing:** 4094316.62 Meters

**Easting:** 448938.029 Meters

**Orthometric Height:** 413.759 Meters

**Latitude:** 36 59 36.971594 N

**Longitude:** 93 34 25.800926 W

**Ellipsoid Height:** 384.625 Meters



**GS0033**



**Point ID: GS0033**

**Northing: 4092680.12 Meters**

**Easting: 458505.363 Meters**

**Orthometric Height: 408.299 Meters**

**Latitude: 36 58 45.561443 N**

**Longitude: 93 27 58.426655 W**

**Ellipsoid Height: 379.227 Meters**

**GS0034**



**Point ID:** GS0034

**Northing:** 4092678.726 Meters

**Easting:** 458529.177 Meters

**Orthometric Height:** 408.407 Meters

**Latitude:** 36 58 45.519984 N

**Longitude:** 93 27 57.463177 W

**Ellipsoid Height:** 379.335 Meters

**GS0037**



**Point ID: GS0037**

**Northing: 4087807.073 Meters**

**Easting: 461827.316 Meters**

**Orthometric Height: 374.859 Meters**

**Latitude: 36 56 7.931442 N**

**Longitude: 93 25 43.173139 W**

**Ellipsoid Height: 345.818 Meters**

**GS0042**



**Point ID: GS0042**

**Northing: 4074727.275 Meters**

**Easting: 456868.514 Meters**

**Orthometric Height: 299.274 Meters**

**Latitude: 36 49 2.702382 N**

**Longitude: 93 29 0.953941 W**

**Ellipsoid Height: 270.306 Meters**

**GS0043**



**Point ID:** GS0043

**Northing:** 4074733.875 Meters

**Easting:** 456846.394 Meters

**Orthometric Height:** 299.528 Meters

**Latitude:** 36 49 2.912926 N

**Longitude:** 93 29 1.848106 W

**Ellipsoid Height:** 270.56 Meters

**GS0045**



**Point ID:** GS0045

**Northing:** 4075558.942 Meters

**Easting:** 465580.174 Meters

**Orthometric Height:** 406.492 Meters

**Latitude:** 36 49 30.977395 N

**Longitude:** 93 23 9.461240 W

**Ellipsoid Height:** 377.591 Meters

**GS0046**



**Point ID:** GS0046

**Northing:** 4075545.977 Meters

**Easting:** 465597.885 Meters

**Orthometric Height:** 406.771 Meters

**Latitude:** 36 49 30.558956 N

**Longitude:** 93 23 8.744191 W

**Ellipsoid Height:** 377.87 Meters

**GS0047**



**Point ID: GS0047**

**Northing: 4068359.962 Meters**

**Easting: 468264.394 Meters**

**Orthometric Height: 398.493 Meters**

**Latitude: 36 45 37.690822 N**

**Longitude: 93 21 20.026396 W**

**Ellipsoid Height: 369.646 Meters**



**GS0048**



**Point ID:** GS0048

**Northing:** 4068375.008 Meters

**Easting:** 468280.974 Meters

**Orthometric Height:** 399.915 Meters

**Latitude:** 36 45 38.181102 N

**Longitude:** 93 21 19.359906 W

**Ellipsoid Height:** 371.068 Meters

**GS0051**



**Point ID:** GS0051

**Northing:** 4058187.932 Meters

**Easting:** 460706.385 Meters

**Orthometric Height:** 379.856 Meters

**Latitude:** 36 40 6.563053 N

**Longitude:** 93 26 22.981956 W

**Ellipsoid Height:** 351.056 Meters

**GS0056**



**Point ID:** GS0056

**Northing:** 4046620.813 Meters

**Easting:** 460805.29 Meters

**Orthometric Height:** 399.084 Meters

**Latitude:** 36 33 51.188962 N

**Longitude:** 93 26 16.872773 W

**Ellipsoid Height:** 370.462 Meters

**GS0061**



**Point ID:** GS0061

**Northing:** 4040409.492 Meters

**Easting:** 449443.965 Meters

**Orthometric Height:** 348.257 Meters

**Latitude:** 36 30 27.690978 N

**Longitude:** 93 33 52.475282 W

**Ellipsoid Height:** 319.776 Meters

**GS0064**



**Point ID:** GS0064

**Northing:** 4088577.797 Meters

**Easting:** 418267.561 Meters

**Orthometric Height:** 423.007 Meters

**Latitude:** 36 56 22.959437 N

**Longitude:** 93 55 4.273876 W

**Ellipsoid Height:** 394.034 Meters

**GS0065**



**Point ID:** GS0065

**Northing:** 4088572.934 Meters

**Easting:** 418298.206 Meters

**Orthometric Height:** 422.898 Meters

**Latitude:** 36 56 22.811214 N

**Longitude:** 93 55 3.033194 W

**Ellipsoid Height:** 393.926 Meters

**GS0071**



**Point ID:** GS0071

**Northing:** 4088978.869 Meters

**Easting:** 416460.466 Meters

**Orthometric Height:** 412.298 Meters

**Latitude:** 36 56 35.402570 N

**Longitude:** 93 56 17.481751 W

**Ellipsoid Height:** 383.314 Meters

**GS0076**



**Point ID:** GS0076

**Northing:** 4094507.472 Meters

**Easting:** 404669.167 Meters

**Orthometric Height:** 374.941 Meters

**Latitude:** 36 59 30.754739 N

**Longitude:** 94 4 16.642972 W

**Ellipsoid Height:** 345.795 Meters



**GS0080**



**Point ID:** GS0080

**Northing:** 4086658.076 Meters

**Easting:** 393933.508 Meters

**Orthometric Height:** 365.465 Meters

**Latitude:** 36 55 11.939952 N

**Longitude:** 94 11 26.909265 W

**Ellipsoid Height:** 336.408 Meters

**GS0082**



**Point ID: GS0082**

**Northing: 4077038.658 Meters**

**Easting: 393122.954 Meters**

**Orthometric Height: 374.25 Meters**

**Latitude: 36 49 59.503536 N**

**Longitude: 94 11 54.782789 W**

**Ellipsoid Height: 345.387 Meters**

**GS0083**



**Point ID:** GS0083

**Northing:** 4077018.932 Meters

**Easting:** 393114.456 Meters

**Orthometric Height:** 374.094 Meters

**Latitude:** 36 49 58.860073 N

**Longitude:** 94 11 55.115833 W

**Ellipsoid Height:** 345.232 Meters

**GS0094**



**Point ID:** GS0094

**Northing:** 4083630.771 Meters

**Easting:** 382614.384 Meters

**Orthometric Height:** 362.674 Meters

**Latitude:** 36 53 28.892294 N

**Longitude:** 94 19 2.602518 W

**Ellipsoid Height:** 333.628 Meters

**GS0101**



**Point ID:** GS0101

**Northing:** 4076178.983 Meters

**Easting:** 375545.05 Meters

**Orthometric Height:** 360.524 Meters

**Latitude:** 36 49 23.871853 N

**Longitude:** 94 23 43.744194 W

**Ellipsoid Height:** 331.565 Meters

**GS0102**



**Point ID:** GS0102

**Northing:** 4079366.135 Meters

**Easting:** 373763.217 Meters

**Orthometric Height:** 368.443 Meters

**Latitude:** 36 51 6.422241 N

**Longitude:** 94 24 57.555920 W

**Ellipsoid Height:** 339.404 Meters

**GS0106**



**Point ID:** GS0106

**Northing:** 4079491.597 Meters

**Easting:** 367898.789 Meters

**Orthometric Height:** 360.536 Meters

**Latitude:** 36 51 7.606423 N

**Longitude:** 94 28 54.375089 W

**Ellipsoid Height:** 331.445 Meters

**GS0107**



**Point ID:** GS0107

**Northing:** 4082886.769 Meters

**Easting:** 361601.321 Meters

**Orthometric Height:** 291.253 Meters

**Latitude:** 36 52 54.503261 N

**Longitude:** 94 33 10.819384 W

**Ellipsoid Height:** 262.047 Meters



**GS0113**



**Point ID: GS0113**

**Northing: 4092363.543 Meters**

**Easting: 368210.357 Meters**

**Orthometric Height: 346.343 Meters**

**Latitude: 36 58 5.349498 N**

**Longitude: 94 28 49.863063 W**

**Ellipsoid Height: 316.982 Meters**

**GS0114**



**Point ID: GS0114**

**Northing: 4097985.893 Meters**

**Easting: 368517.384 Meters**

**Orthometric Height: 286.069 Meters**

**Latitude: 37 1 7.899701 N**

**Longitude: 94 28 40.979243 W**

**Ellipsoid Height: 256.584 Meters**

**GS0118**



**Point ID:** GS0118

**Northing:** 4139872.408 Meters

**Easting:** 385282.523 Meters

**Orthometric Height:** 282.424 Meters

**Latitude:** 37 23 54.714489 N

**Longitude:** 94 17 45.865214 W

**Ellipsoid Height:** 251.934 Meters

**GS0119**



**Point ID:** GS0119

**Northing:** 4139889.036 Meters

**Easting:** 385293.012 Meters

**Orthometric Height:** 282.396 Meters

**Latitude:** 37 23 55.258594 N

**Longitude:** 94 17 45.448015 W

**Ellipsoid Height:** 251.906 Meters

**GS0128**



**Point ID:** GS0128

**Northing:** 4156252.818 Meters

**Easting:** 381835.804 Meters

**Orthometric Height:** 299.866 Meters

**Latitude:** 37 32 44.543727 N

**Longitude:** 94 20 15.480113 W

**Ellipsoid Height:** 269.073 Meters

**GS0129**



**Point ID:** GS0129

**Northing:** 4156286.809 Meters

**Easting:** 381839.716 Meters

**Orthometric Height:** 299.21 Meters

**Latitude:** 37 32 45.648205 N

**Longitude:** 94 20 15.340424 W

**Ellipsoid Height:** 268.417 Meters

**GS0135**



**Point ID: GS0135**

**Northing: 4145496.869 Meters**

**Easting: 368912.579 Meters**

**Orthometric Height: 289.243 Meters**

**Latitude: 37 26 49.347310 N**

**Longitude: 94 28 55.078953 W**

**Ellipsoid Height: 258.551 Meters**

**GS0144**



**Point ID:** GS0144

**Northing:** 4169013.311 Meters

**Easting:** 384671.66 Meters

**Orthometric Height:** 277.439 Meters

**Latitude:** 37 39 39.789677 N

**Longitude:** 94 18 27.180888 W

**Ellipsoid Height:** 246.443 Meters



**GS0146**



**Point ID:** GS0146

**Northing:** 4165373.565 Meters

**Easting:** 395564.179 Meters

**Orthometric Height:** 290.798 Meters

**Latitude:** 37 37 46.406243 N

**Longitude:** 94 11 0.814891 W

**Ellipsoid Height:** 259.945 Meters

**GS0147**



**Point ID:** GS0147

**Northing:** 4165374.454 Meters

**Easting:** 395542.457 Meters

**Orthometric Height:** 290.745 Meters

**Latitude:** 37 37 46.426205 N

**Longitude:** 94 11 1.701379 W

**Ellipsoid Height:** 259.892 Meters

**GS0149**



**Point ID:** GS0149

**Northing:** 4160735.167 Meters

**Easting:** 390131.29 Meters

**Orthometric Height:** 298.529 Meters

**Latitude:** 37 35 13.651282 N

**Longitude:** 94 14 39.913239 W

**Ellipsoid Height:** 267.722 Meters

**GS0151**



**Point ID:** GS0151

**Northing:** 4173750.349 Meters

**Easting:** 384730.417 Meters

**Orthometric Height:** 278.792 Meters

**Latitude:** 37 42 13.484443 N

**Longitude:** 94 18 27.480434 W

**Ellipsoid Height:** 247.707 Meters

**GS0153**



**Point ID:** GS0153

**Northing:** 4180325.197 Meters

**Easting:** 384039.471 Meters

**Orthometric Height:** 262.846 Meters

**Latitude:** 37 45 46.454309 N

**Longitude:** 94 18 59.466590 W

**Ellipsoid Height:** 231.622 Meters

**GS0154**



GS0154\_North



GS0154\_East



GS0154\_West



GS0154\_South

**Point ID:** GS0154

**Northing:** 4180326.872 Meters

**Easting:** 384061.733 Meters

**Orthometric Height:** 262.967 Meters

**Latitude:** 37 45 46.518785 N

**Longitude:** 94 18 58.557902 W

**Ellipsoid Height:** 231.744 Meters

**GS0159**



**Point ID: GS0159**

**Northing: 4176397.634 Meters**

**Easting: 365358.118 Meters**

**Orthometric Height: 243.456 Meters**

**Latitude: 37 43 29.843441 N**

**Longitude: 94 31 40.147191 W**

**Ellipsoid Height: 212.266 Meters**

**GS0160**



**Point ID:** GS0160

**Northing:** 4176417.822 Meters

**Easting:** 365358.921 Meters

**Orthometric Height:** 243.227 Meters

**Latitude:** 37 43 30.498710 N

**Longitude:** 94 31 40.127858 W

**Ellipsoid Height:** 212.036 Meters



**GS0166**



**Point ID:** GS0166

**Northing:** 4163264.999 Meters

**Easting:** 369789.886 Meters

**Orthometric Height:** 271.973 Meters

**Latitude:** 37 36 26.161221 N

**Longitude:** 94 28 30.725063 W

**Ellipsoid Height:** 241.019 Meters

**GS0167**



**Point ID:** GS0167

**Northing:** 4163240.628 Meters

**Easting:** 369787.213 Meters

**Orthometric Height:** 271.721 Meters

**Latitude:** 37 36 25.369321 N

**Longitude:** 94 28 30.818412 W

**Ellipsoid Height:** 240.767 Meters

**GS0168**



**Point ID:** GS0168

**Northing:** 4155483.757 Meters

**Easting:** 369350.292 Meters

**Orthometric Height:** 287.474 Meters

**Latitude:** 37 32 13.529182 N

**Longitude:** 94 28 43.654564 W

**Ellipsoid Height:** 256.618 Meters

**GS0170**



**Point ID:** GS0170

**Northing:** 4155486.06 Meters

**Easting:** 369310.875 Meters

**Orthometric Height:** 286.041 Meters

**Latitude:** 37 32 13.583757 N

**Longitude:** 94 28 45.261701 W

**Ellipsoid Height:** 255.185 Meters

**GS0175**



**Point ID:** GS0175

**Northing:** 4179995.615 Meters

**Easting:** 384407.133 Meters

**Orthometric Height:** 265.443 Meters

**Latitude:** 37 45 35.930496 N

**Longitude:** 94 18 44.254439 W

**Ellipsoid Height:** 234.228 Meters

**GS0177**



**Point ID: GS0177**

**Northing: 4179340.537 Meters**

**Easting: 397419.618 Meters**

**Orthometric Height: 277.505 Meters**

**Latitude: 37 45 20.267348 N**

**Longitude: 94 9 52.211228 W**

**Ellipsoid Height: 246.356 Meters**

**GS0178**



**Point ID: GS0178**

**Northing: 4179361.04 Meters**

**Easting: 397419.578 Meters**

**Orthometric Height: 277.381 Meters**

**Latitude: 37 45 20.932451 N**

**Longitude: 94 9 52.223305 W**

**Ellipsoid Height: 246.232 Meters**

**GS0182**



**Point ID: GS0182**

**Northing: 4188433.376 Meters**

**Easting: 384790.264 Meters**

**Orthometric Height: 265.84 Meters**

**Latitude: 37 50 9.817693 N**

**Longitude: 94 18 33.429069 W**

**Ellipsoid Height: 234.457 Meters**



**GS0186**



**Point ID: GS0186**

**Northing: 4196907.243 Meters**

**Easting: 381816.233 Meters**

**Orthometric Height: 250.636 Meters**

**Latitude: 37 54 43.324645 N**

**Longitude: 94 20 40.065384 W**

**Ellipsoid Height: 219.095 Meters**

**GS0189**



**Point ID: GS0189**

**Northing: 4201812.538 Meters**

**Easting: 389872.768 Meters**

**Orthometric Height: 241.71 Meters**

**Latitude: 37 57 26.087965 N**

**Longitude: 94 15 12.897463 W**

**Ellipsoid Height: 210.057 Meters**

**GS0191**



**Point ID:** GS0191

**Northing:** 4199091.877 Meters

**Easting:** 395047.768 Meters

**Orthometric Height:** 256.608 Meters

**Latitude:** 37 56 0.037004 N

**Longitude:** 94 11 39.445981 W

**Ellipsoid Height:** 224.995 Meters

**GS0192**



**Point ID: GS0192**

**Northing: 4199093.188 Meters**

**Easting: 395025.029 Meters**

**Orthometric Height: 257.105 Meters**

**Latitude: 37 56 0.070087 N**

**Longitude: 94 11 40.378011 W**

**Ellipsoid Height: 225.492 Meters**

**GS0194**



**Point ID:** GS0194

**Northing:** 4208665.143 Meters

**Easting:** 397217.84 Meters

**Orthometric Height:** 258.263 Meters

**Latitude:** 38 1 11.484556 N

**Longitude:** 94 10 15.496347 W

**Ellipsoid Height:** 226.444 Meters

**GS0198**



**Point ID:** GS0198

**Northing:** 4196587.089 Meters

**Easting:** 381124.456 Meters

**Orthometric Height:** 242.073 Meters

**Latitude:** 37 54 32.614965 N

**Longitude:** 94 21 8.198863 W

**Ellipsoid Height:** 210.539 Meters

**GS0201**



**Point ID: GS0201**

**Northing: 4211872.568 Meters**

**Easting: 381215.565 Meters**

**Orthometric Height: 237.978 Meters**

**Latitude: 38 2 48.480522 N**

**Longitude: 94 21 13.569409 W**

**Ellipsoid Height: 206.176 Meters**

**GS0208**



**Point ID:** GS0208

**Northing:** 4235405.442 Meters

**Easting:** 382533.886 Meters

**Orthometric Height:** 258.441 Meters

**Latitude:** 38 15 32.428399 N

**Longitude:** 94 20 33.470320 W

**Ellipsoid Height:** 226.305 Meters



**GS0210**



**Point ID:** GS0210

**Northing:** 4236516.188 Meters

**Easting:** 369134.412 Meters

**Orthometric Height:** 265.103 Meters

**Latitude:** 38 16 1.787052 N

**Longitude:** 94 29 45.403174 W

**Ellipsoid Height:** 233.03 Meters

**GS0211**



**Point ID: GS0211**

**Northing: 4231731.873 Meters**

**Easting: 368137.132 Meters**

**Orthometric Height: 238.217 Meters**

**Latitude: 38 13 26.088221 N**

**Longitude: 94 30 23.226131 W**

**Ellipsoid Height: 206.177 Meters**

**GS0217**



**Point ID: GS0217**

**Northing: 4218252.952 Meters**

**Easting: 365487.169 Meters**

**Orthometric Height: 264.454 Meters**

**Latitude: 38 6 7.502203 N**

**Longitude: 94 32 3.006382 W**

**Ellipsoid Height: 232.606 Meters**

**GS0220**



**Point ID: GS0220**

**Northing: 4211417.014 Meters**

**Easting: 361892.208 Meters**

**Orthometric Height: 274.227 Meters**

**Latitude: 38 2 23.834265 N**

**Longitude: 94 34 25.808642 W**

**Ellipsoid Height: 242.475 Meters**

**GS0223**



**Point ID: GS0223**

**Northing: 4202339.39 Meters**

**Easting: 363042.866 Meters**

**Orthometric Height: 240.498 Meters**

**Latitude: 37 57 30.036314 N**

**Longitude: 94 33 32.381767 W**

**Ellipsoid Height: 208.888 Meters**

**GS0225**



**Point ID: GS0225**

**Northing: 4195596.987 Meters**

**Easting: 367492.809 Meters**

**Orthometric Height: 242.702 Meters**

**Latitude: 37 53 53.719587 N**

**Longitude: 94 30 25.619207 W**

**Ellipsoid Height: 211.196 Meters**

**GS0230**



**Point ID: GS0230**

**Northing: 4216909.817 Meters**

**Easting: 392838.005 Meters**

**Orthometric Height: 236.35 Meters**

**Latitude: 38 5 37.104519 N**

**Longitude: 94 13 19.539394 W**

**Ellipsoid Height: 204.381 Meters**

**GS0232**



**Point ID:** GS0232

**Northing:** 4221611.149 Meters

**Easting:** 396651.477 Meters

**Orthometric Height:** 263.271 Meters

**Latitude:** 38 8 11.209752 N

**Longitude:** 94 10 45.460317 W

**Ellipsoid Height:** 231.231 Meters



**GS0233**



**Point ID:** GS0233

**Northing:** 4221607.861 Meters

**Easting:** 396627.08 Meters

**Orthometric Height:** 263.308 Meters

**Latitude:** 38 8 11.093038 N

**Longitude:** 94 10 46.460572 W

**Ellipsoid Height:** 231.268 Meters

**GS0234**



**Point ID: GS0234**

**Northing: 4230934.664 Meters**

**Easting: 388599.446 Meters**

**Orthometric Height: 275.63 Meters**

**Latitude: 38 13 10.191053 N**

**Longitude: 94 16 21.415540 W**

**Ellipsoid Height: 243.512 Meters**

**GS0236**



**Point ID:** GS0236

**Northing:** 4243368.175 Meters

**Easting:** 398390.672 Meters

**Orthometric Height:** 272.28 Meters

**Latitude:** 38 19 57.685426 N

**Longitude:** 94 9 45.252274 W

**Ellipsoid Height:** 240.038 Meters

**GS0237**



**Point ID: GS0237**

**Northing: 4243369.85 Meters**

**Easting: 398370.123 Meters**

**Orthometric Height: 272.18 Meters**

**Latitude: 38 19 57.731365 N**

**Longitude: 94 9 46.099397 W**

**Ellipsoid Height: 239.938 Meters**

**GS0238**



**Point ID:** GS0238

**Northing:** 4243370.741 Meters

**Easting:** 398348.879 Meters

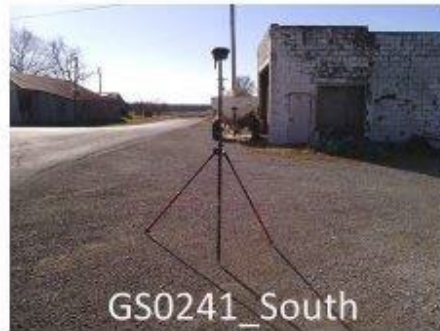
**Orthometric Height:** 272.302 Meters

**Latitude:** 38 19 57.751583 N

**Longitude:** 94 9 46.974751 W

**Ellipsoid Height:** 240.06 Meters

**GS0241**



**Point ID:** GS0241

**Northing:** 4246546.059 Meters

**Easting:** 400160.919 Meters

**Orthometric Height:** 281.968 Meters

**Latitude:** 38 21 41.486244 N

**Longitude:** 94 8 33.969634 W

**Ellipsoid Height:** 249.702 Meters

**GS0243**



**Point ID:** GS0243

**Northing:** 4247612.38 Meters

**Easting:** 392072.113 Meters

**Orthometric Height:** 266.971 Meters

**Latitude:** 38 22 12.694505 N

**Longitude:** 94 14 7.796084 W

**Ellipsoid Height:** 234.711 Meters

**GS0245**



**Point ID:** GS0245

**Northing:** 4250336.264 Meters

**Easting:** 384951.39 Meters

**Orthometric Height:** 257.294 Meters

**Latitude:** 38 23 37.851608 N

**Longitude:** 94 19 2.779833 W

**Ellipsoid Height:** 225.044 Meters



**GS0246**



**Point ID:** GS0246

**Northing:** 4250325.708 Meters

**Easting:** 384970.549 Meters

**Orthometric Height:** 258.006 Meters

**Latitude:** 38 23 37.518104 N

**Longitude:** 94 19 1.983997 W

**Ellipsoid Height:** 225.756 Meters

**GS0247**



**Point ID:** GS0247

**Northing:** 4250642.176 Meters

**Easting:** 376082.62 Meters

**Orthometric Height:** 299.772 Meters

**Latitude:** 38 23 43.506689 N

**Longitude:** 94 25 8.481131 W

**Ellipsoid Height:** 267.584 Meters

**GS0249**



**Point ID:** GS0249

**Northing:** 4250767.374 Meters

**Easting:** 368146.825 Meters

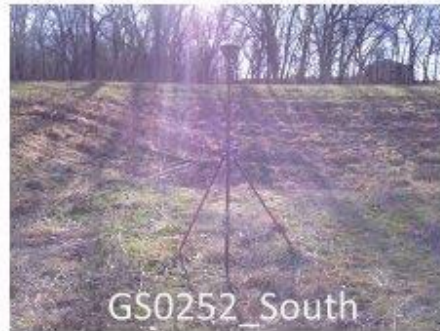
**Orthometric Height:** 275.897 Meters

**Latitude:** 38 23 43.480482 N

**Longitude:** 94 30 35.615960 W

**Ellipsoid Height:** 243.771 Meters

**GS0252**



**Point ID:** GS0252

**Northing:** 4242853.928 Meters

**Easting:** 371751.634 Meters

**Orthometric Height:** 243.446 Meters

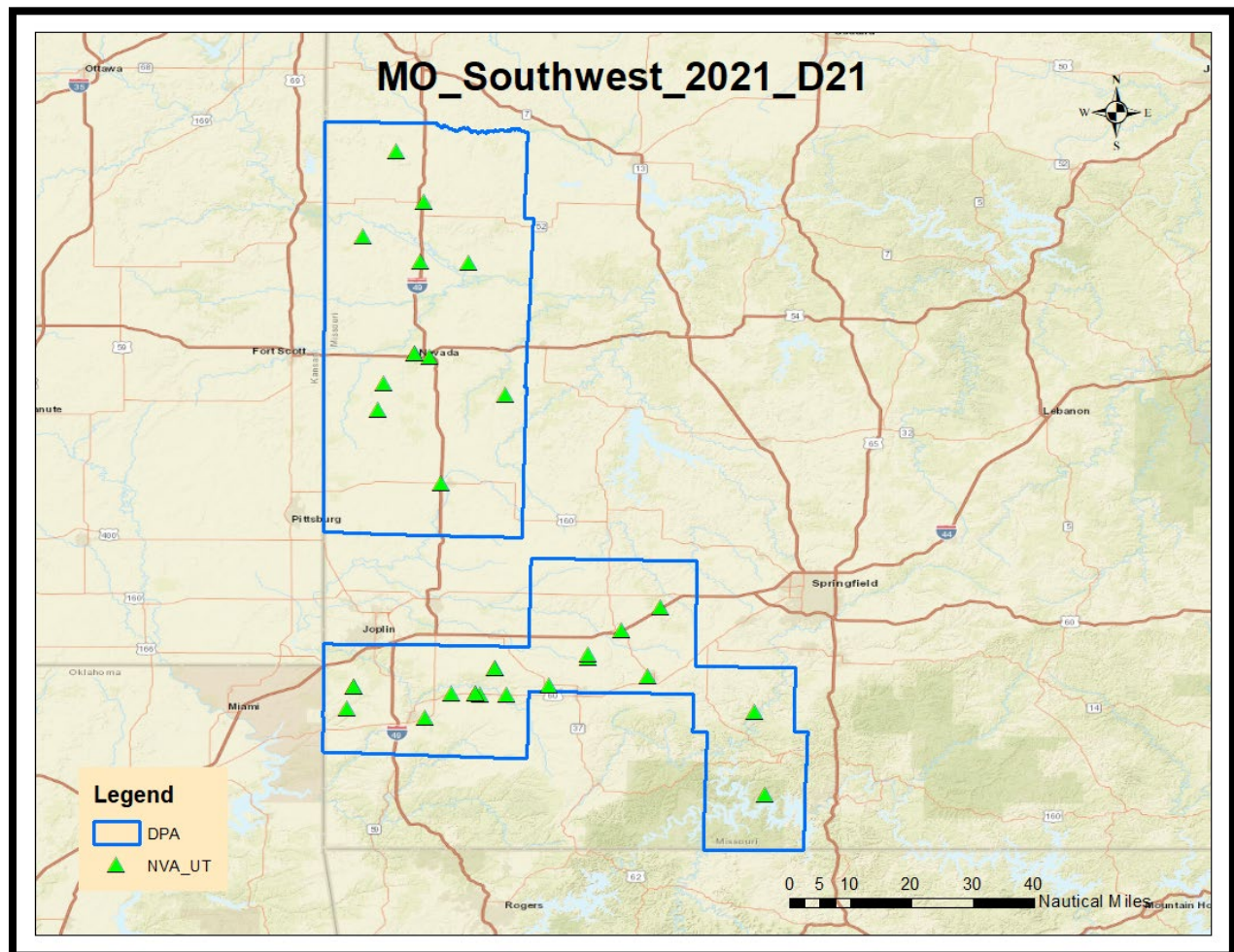
**Latitude:** 38 19 28.705445 N

**Longitude:** 94 28 1.870348 W

**Ellipsoid Height:** 211.323 Meters

## Non-Vegetated Vertical Accuracy Checkpoints Urban Terrain

The Map shows the overall distribution of the Non-Vegetated Vertical Accuracy Checkpoint, Urban Terrain throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is Universal Transverse Mercator UTM Zone 15, North American Datum 1983 (2011), North American Vertical Datum of 1988, Geoid 18 and using Meters for measurement.



**TABLE: Urban Terrain**

<b>Point ID</b>	<b>Easting</b>	<b>Northing</b>	<b>Ortho</b>
<b>GS0006</b>	420145.01	4097349.963	409.175
<b>GS0019</b>	437875.694	4112617.402	371.818
<b>GS0022</b>	428287.706	4105486.168	386.526
<b>GS0029</b>	434685.351	4091785.454	415.351
<b>GS0039</b>	460375.145	4080823.401	379.986
<b>GS0053</b>	462645.593	4055751.927	327.687
<b>GS0069</b>	420125.358	4098321.172	398.472
<b>GS0073</b>	410535.496	4089148.934	364.64
<b>GS0077</b>	397481.349	4094634.241	390.987
<b>GS0078</b>	397482.289	4094658.769	390.195
<b>GS0079</b>	393941.028	4086623.243	366.048
<b>GS0085</b>	400273.747	4086430.125	369.816
<b>GS0088</b>	392723.221	4086778.207	370.029
<b>GS0089</b>	392696.55	4086777.371	369.619
<b>GS0092</b>	386947.623	4086935.894	344.547
<b>GS0096</b>	380504.658	4079769.875	319.803
<b>GS0108</b>	361578.12	4082867.606	290.097
<b>GS0109</b>	363317.252	4089277.103	355.139
<b>GS0110</b>	363341.87	4089275.38	354.563
<b>GS0126</b>	385450.573	4150506.594	292.2
<b>GS0156</b>	382994.13	4188610.019	265.607
<b>GS0157</b>	371997.932	4180650.245	264.52
<b>GS0164</b>	370562.714	4172766.354	273.594
<b>GS0180</b>	400986.597	4177095.447	267.207
<b>GS0184</b>	379530.558	4189565.735	254.807
<b>GS0185</b>	379543.48	4189582.457	254.663
<b>GS0203</b>	381455.939	4217558.528	242.815
<b>GS0207</b>	382510.913	4235395.204	257.836
<b>GS0214</b>	367731.569	4225339.616	254.246
<b>GS0229</b>	392835.481	4216887.611	236.045
<b>GS0248</b>	376068.989	4250655.392	299.846

**GS0006**



**Point ID:** GS0006

**Northing:** 4097349.963 Meters

**Easting:** 420145.01 Meters

**Orthometric Height:** 409.175 Meters

**Latitude:** 37 18.179078 N

**Longitude:** 93 53 51.723282 W

**Ellipsoid Height:** 380.007 Meters

**GS0019**



**Point ID:** GS0019

**Northing:** 4112617.402 Meters

**Easting:** 437875.694 Meters

**Orthometric Height:** 371.818 Meters

**Latitude:** 37 9 28.418017 N

**Longitude:** 93 41 58.769870 W

**Ellipsoid Height:** 342.299 Meters



**GS0022**



**Point ID: GS0022**

**Northing: 4105486.168 Meters**

**Easting: 428287.706 Meters**

**Orthometric Height: 386.526 Meters**

**Latitude: 37 5 34.551604 N**

**Longitude: 93 48 25.015085 W**

**Ellipsoid Height: 357.117 Meters**

**GS0029**



**Point ID:** GS0029

**Northing:** 4091785.454 Meters

**Easting:** 434685.351 Meters

**Orthometric Height:** 415.351 Meters

**Latitude:** 36 58 11.660563 N

**Longitude:** 93 44 1.590612 W

**Ellipsoid Height:** 386.274 Meters

**GS0039**



**Point ID:** GS0039

**Northing:** 4080823.401 Meters

**Easting:** 460375.145 Meters

**Orthometric Height:** 379.986 Meters

**Latitude:** 36 52 21.084940 N

**Longitude:** 93 26 40.561721 W

**Ellipsoid Height:** 350.982 Meters

**GS0053**



**Point ID: GS0053**

**Northing: 4055751.927 Meters**

**Easting: 462645.593 Meters**

**Orthometric Height: 327.687 Meters**

**Latitude: 36 38 47.788835 N**

**Longitude: 93 25 4.433679 W**

**Ellipsoid Height: 298.92 Meters**

**GS0069**



**Point ID:** GS0069

**Northing:** 4098321.172 Meters

**Easting:** 420125.358 Meters

**Orthometric Height:** 398.472 Meters

**Latitude:** 37 1 39.686681 N

**Longitude:** 93 53 52.889452 W

**Ellipsoid Height:** 369.278 Meters

**GS0073**



**Point ID:** GS0073

**Northing:** 4089148.934 Meters

**Easting:** 410535.496 Meters

**Orthometric Height:** 364.64 Meters

**Latitude:** 36 56 38.961424 N

**Longitude:** 94 0 17.066839 W

**Ellipsoid Height:** 335.631 Meters

**GS0077**



**Point ID:** GS0077

**Northing:** 4094634.241 Meters

**Easting:** 397481.349 Meters

**Orthometric Height:** 390.987 Meters

**Latitude:** 36 59 32.144824 N

**Longitude:** 94 9 7.439185 W

**Ellipsoid Height:** 361.757 Meters

**GS0078**



**Point ID:** GS0078

**Northing:** 4094658.769 Meters

**Easting:** 397482.289 Meters

**Orthometric Height:** 390.195 Meters

**Latitude:** 36 59 32.941028 N

**Longitude:** 94 9 7.413143 W

**Ellipsoid Height:** 360.965 Meters



**GS0079**



**Point ID:** GS0079

**Northing:** 4086623.243 Meters

**Easting:** 393941.028 Meters

**Orthometric Height:** 366.048 Meters

**Latitude:** 36 55 10.812847 N

**Longitude:** 94 11 26.587827 W

**Ellipsoid Height:** 336.992 Meters

**GS0085**



**Point ID:** GS0085

**Northing:** 4086430.125 Meters

**Easting:** 400273.747 Meters

**Orthometric Height:** 369.816 Meters

**Latitude:** 36 55 7.035715 N

**Longitude:** 94 7 10.592371 W

**Ellipsoid Height:** 340.793 Meters

**GS0088**



**Point ID: GS0088**

**Northing: 4086778.207 Meters**

**Easting: 392723.221 Meters**

**Orthometric Height: 370.029 Meters**

**Latitude: 36 55 15.344508 N**

**Longitude: 94 12 15.877199 W**

**Ellipsoid Height: 340.962 Meters**

**GS0089**



**Point ID:** GS0089

**Northing:** 4086777.371 Meters

**Easting:** 392696.55 Meters

**Orthometric Height:** 369.619 Meters

**Latitude:** 36 55 15.306458 N

**Longitude:** 94 12 16.954526 W

**Ellipsoid Height:** 340.552 Meters

**GS0092**



**Point ID:** GS0092

**Northing:** 4086935.894 Meters

**Easting:** 386947.623 Meters

**Orthometric Height:** 344.547 Meters

**Latitude:** 36 55 18.030281 N

**Longitude:** 94 16 9.347449 W

**Ellipsoid Height:** 315.439 Meters

**GS0096**



**Point ID:** GS0096

**Northing:** 4079769.875 Meters

**Easting:** 380504.658 Meters

**Orthometric Height:** 319.803 Meters

**Latitude:** 36 51 22.676998 N

**Longitude:** 94 20 25.628764 W

**Ellipsoid Height:** 290.822 Meters

**GS0108**



**Point ID:** GS0108

**Northing:** 4082867.606 Meters

**Easting:** 361578.12 Meters

**Orthometric Height:** 290.097 Meters

**Latitude:** 36 52 53.869363 N

**Longitude:** 94 33 11.743716 W

**Ellipsoid Height:** 260.891 Meters

**GS0109**



**Point ID:** GS0109

**Northing:** 4089277.103 Meters

**Easting:** 363317.252 Meters

**Orthometric Height:** 355.139 Meters

**Latitude:** 36 56 22.710751 N

**Longitude:** 94 32 5.677485 W

**Ellipsoid Height:** 325.82 Meters



**GS0110**



**Point ID:** GS0110

**Northing:** 4089275.38 Meters

**Easting:** 363341.87 Meters

**Orthometric Height:** 354.563 Meters

**Latitude:** 36 56 22.667720 N

**Longitude:** 94 32 4.681421 W

**Ellipsoid Height:** 325.245 Meters

**GS0126**



**Point ID: GS0126**

**Northing: 4150506.594 Meters**

**Easting: 385450.573 Meters**

**Orthometric Height: 292.2 Meters**

**Latitude: 37 29 39.774934 N**

**Longitude: 94 17 44.979097 W**

**Ellipsoid Height: 261.528 Meters**

**GS0156**



**Point ID:** GS0156

**Northing:** 4188610.019 Meters

**Easting:** 382994.13 Meters

**Orthometric Height:** 265.607 Meters

**Latitude:** 37 50 14.724534 N

**Longitude:** 94 19 46.996851 W

**Ellipsoid Height:** 234.217 Meters

**GS0157**



**Point ID: GS0157**

**Northing: 4180650.245 Meters**

**Easting: 371997.932 Meters**

**Orthometric Height: 264.52 Meters**

**Latitude: 37 45 51.215291 N**

**Longitude: 94 27 11.688665 W**

**Ellipsoid Height: 233.251 Meters**

**GS0164**



**Point ID:** GS0164

**Northing:** 4172766.354 Meters

**Easting:** 370562.714 Meters

**Orthometric Height:** 273.594 Meters

**Latitude:** 37 41 34.756197 N

**Longitude:** 94 28 5.279116 W

**Ellipsoid Height:** 242.482 Meters

**GS0180**



**Point ID: GS0180**

**Northing: 4177095.447 Meters**

**Easting: 400986.597 Meters**

**Orthometric Height: 267.207 Meters**

**Latitude: 37 44 8.848281 N**

**Longitude: 94 7 25.362142 W**

**Ellipsoid Height: 236.124 Meters**

**GS0184**



**Point ID:** GS0184

**Northing:** 4189565.735 Meters

**Easting:** 379530.558 Meters

**Orthometric Height:** 254.807 Meters

**Latitude:** 37 50 44.102627 N

**Longitude:** 94 22 9.236621 W

**Ellipsoid Height:** 223.394 Meters

**GS0185**



**Point ID: GS0185**

**Northing: 4189582.457 Meters**

**Easting: 379543.48 Meters**

**Orthometric Height: 254.663 Meters**

**Latitude: 37 50 44.651205 N**

**Longitude: 94 22 8.718053 W**

**Ellipsoid Height: 223.249 Meters**



**GS0203**



**Point ID: GS0203**

**Northing: 4217558.528 Meters**

**Easting: 381455.939 Meters**

**Orthometric Height: 242.815 Meters**

**Latitude: 38 53.029405 N**

**Longitude: 94 21 7.103992 W**

**Ellipsoid Height: 210.891 Meters**

**GS0207**



**Point ID: GS0207**

**Northing: 4235395.204 Meters**

**Easting: 382510.913 Meters**

**Orthometric Height: 257.836 Meters**

**Latitude: 38 15 32.085508 N**

**Longitude: 94 20 34.409257 W**

**Ellipsoid Height: 225.7 Meters**

**GS0214**



**Point ID:** GS0214

**Northing:** 4225339.616 Meters

**Easting:** 367731.569 Meters

**Orthometric Height:** 254.246 Meters

**Latitude:** 38 9 58.547050 N

**Longitude:** 94 30 35.617167 W

**Ellipsoid Height:** 222.28 Meters

**GS0229**



**Point ID: GS0229**

**Northing: 4216887.611 Meters**

**Easting: 392835.481 Meters**

**Orthometric Height: 236.045 Meters**

**Latitude: 38 5 36.383104 N**

**Longitude: 94 13 19.630979 W**

**Ellipsoid Height: 204.076 Meters**

**GS0248**



**Point ID:** GS0248

**Northing:** 4250655.392 Meters

**Easting:** 376068.989 Meters

**Orthometric Height:** 299.846 Meters

**Latitude:** 38 23 43.928519 N

**Longitude:** 94 25 9.051319 W

**Ellipsoid Height:** 267.658 Meters



**TABLE: Low Vegetation**

<b>Point ID</b>	<b>Easting</b>	<b>Northing</b>	<b>Ortho</b>
<b>GS0012</b>	419921.821	4116356.828	363.718
<b>GS0032</b>	458498.963	4092699.936	408.123
<b>GS0040</b>	456911.721	4074708.18	298.209
<b>GS0049</b>	460691.851	4058158.667	381.039
<b>GS0070</b>	416454.508	4088946.718	412.489
<b>GS0095</b>	380468.597	4079788.032	318.534
<b>GS0143</b>	384673.051	4168990.502	276.798
<b>GS0155</b>	382986.616	4188590.221	266.209
<b>GS0193</b>	397203.801	4208685.142	258.602
<b>GS0218</b>	365491.951	4218278.961	264.054
<b>GS0242</b>	392063.561	4247643.671	266.73

**GS0012**



**Point ID:** GS0012

**Northing:** 4116356.828 Meters

**Easting:** 419921.821 Meters

**Orthometric Height:** 363.718 Meters

**Latitude:** 37 11 24.833032 N

**Longitude:** 93 54 8.061762 W

**Ellipsoid Height:** 334.026 Meters



**GS0032**



**Point ID:** GS0032

**Northing:** 4092699.936 Meters

**Easting:** 458498.963 Meters

**Orthometric Height:** 408.123 Meters

**Latitude:** 36 58 46.203462 N

**Longitude:** 93 27 58.689454 W

**Ellipsoid Height:** 379.051 Meters

**GS0040**



**Point ID:** GS0040

**Northing:** 4074708.18 Meters

**Easting:** 456911.721 Meters

**Orthometric Height:** 298.209 Meters

**Latitude:** 36 49 2.089820 N

**Longitude:** 93 28 59.206103 W

**Ellipsoid Height:** 269.241 Meters

**GS0049**



**Point ID:** GS0049

**Northing:** 4058158.667 Meters

**Easting:** 460691.851 Meters

**Orthometric Height:** 381.039 Meters

**Latitude:** 36 40 5.611186 N

**Longitude:** 93 26 23.562074 W

**Ellipsoid Height:** 352.239 Meters

**GS0070**



**Point ID:** GS0070

**Northing:** 4088946.718 Meters

**Easting:** 416454.508 Meters

**Orthometric Height:** 412.489 Meters

**Latitude:** 36 56 34.357417 N

**Longitude:** 93 56 17.709790 W

**Ellipsoid Height:** 383.505 Meters

**GS0095**



**Point ID:** GS0095

**Northing:** 4079788.032 Meters

**Easting:** 380468.597 Meters

**Orthometric Height:** 318.534 Meters

**Latitude:** 36 51 23.249657 N

**Longitude:** 94 20 27.094964 W

**Ellipsoid Height:** 289.553 Meters

**GS0143**



**Point ID:** GS0143

**Northing:** 4168990.502 Meters

**Easting:** 384673.051 Meters

**Orthometric Height:** 276.798 Meters

**Latitude:** 37 39 39.050384 N

**Longitude:** 94 18 27.111128 W

**Ellipsoid Height:** 245.803 Meters

**GS0155**



**Point ID:** GS0155

**Northing:** 4188590.221 Meters

**Easting:** 382986.616 Meters

**Orthometric Height:** 266.209 Meters

**Latitude:** 37 50 14.078838 N

**Longitude:** 94 19 47.292648 W

**Ellipsoid Height:** 234.819 Meters

**GS0193**



**Point ID: GS0193**

**Northing: 4208685.142 Meters**

**Easting: 397203.801 Meters**

**Orthometric Height: 258.602 Meters**

**Latitude: 38 1 12.127564 N**

**Longitude: 94 10 16.082360 W**

**Ellipsoid Height: 226.782 Meters**



**GS0218**



**Point ID:** GS0218

**Northing:** 4218278.961 Meters

**Easting:** 365491.951 Meters

**Orthometric Height:** 264.054 Meters

**Latitude:** 38 6 8.348371 N

**Longitude:** 94 32 2.827740 W

**Ellipsoid Height:** 232.206 Meters

**GS0242**



**Point ID:** GS0242

**Northing:** 4247643.671 Meters

**Easting:** 392063.561 Meters

**Orthometric Height:** 266.73 Meters

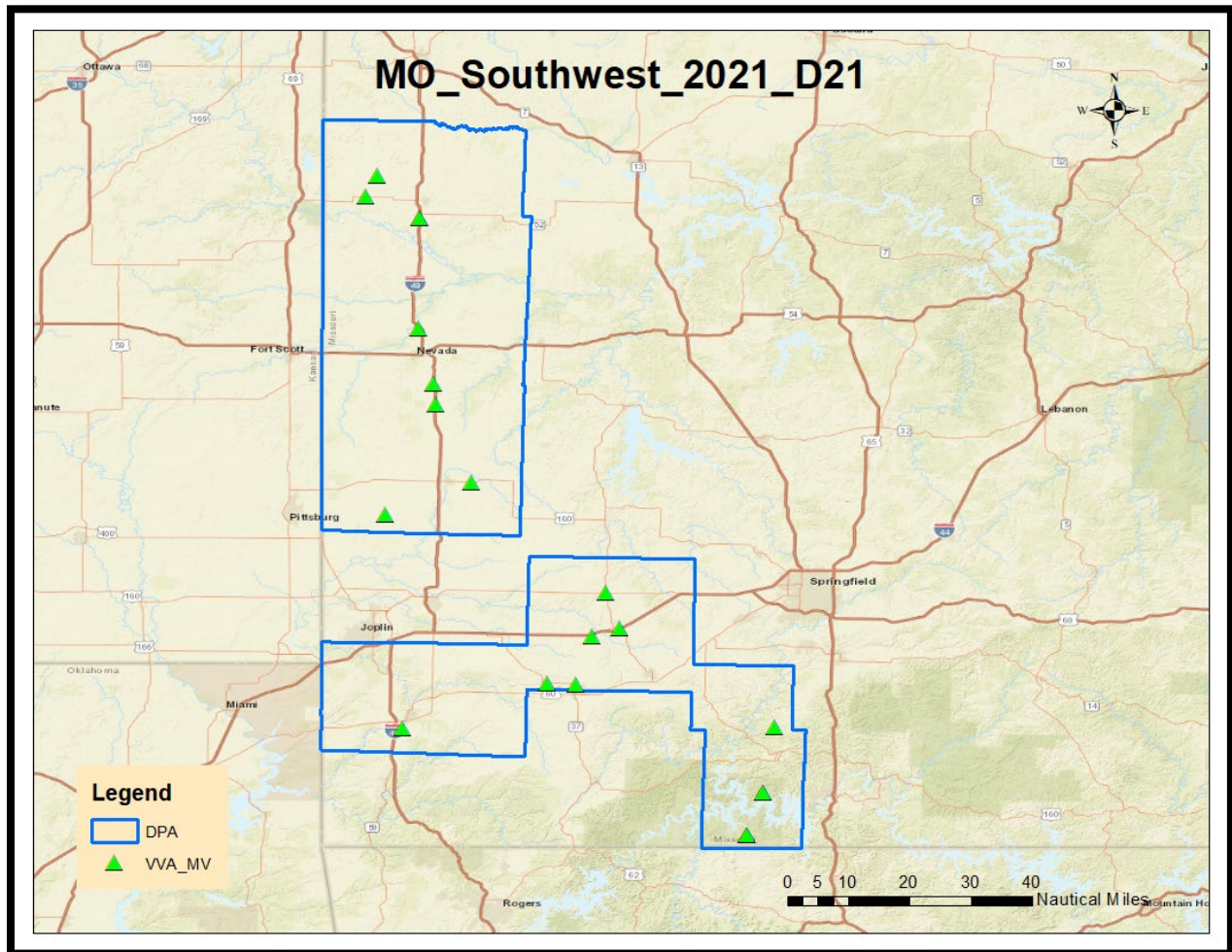
**Latitude:** 38 22 13.705786 N

**Longitude:** 94 14 8.165705 W

**Ellipsoid Height:** 234.47 Meters

# Vegetated Vertical Accuracy Checkpoints Medium Vegetation

The Map shows the overall distribution of the Vegetated Vertical Accuracy Checkpoint, Medium Vegetation throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is Universal Transverse Mercator UTM Zone 15, North American Datum 1983 (2011), North American Vertical Datum of 1988, Geoid 18 and using Meters for measurement.



**TABLE: Medium Vegetation**

<b>Point ID</b>	<b>Easting</b>	<b>Northing</b>	<b>Ortho</b>
<b>GS0008</b>	421722.931	4103339.316	374.782
<b>GS0015</b>	425168.149	4116260.445	365.882
<b>GS0021</b>	428263.147	4105500.081	385.909
<b>GS0044</b>	465571.491	4075575.852	406.555
<b>GS0052</b>	462642.95	4055774.417	329.402
<b>GS0054</b>	462673.82	4055750.98	328.582
<b>GS0058</b>	458861.187	4043027.268	307.002
<b>GS0059</b>	458839.905	4043015.935	306.932
<b>GS0072</b>	410558.212	4089169.395	364.814
<b>GS0100</b>	375519.572	4076178.338	360.916
<b>GS0123</b>	393083.199	4150072.999	318.585
<b>GS0137</b>	372167.947	4140466.979	297.46
<b>GS0139</b>	417542.721	4088758.559	410.901
<b>GS0150</b>	384734.741	4173730.505	278.573
<b>GS0174</b>	384401.266	4179976.776	265.586
<b>GS0197</b>	381128.362	4196561.815	242.302
<b>GS0204</b>	381767.578	4229737.71	247.191
<b>GS0205</b>	381765.358	4229758.777	246.771
<b>GS0209</b>	369140.501	4236556.889	265.526
<b>GS0251</b>	371762.645	4242869.063	243.589

**GS0008**



**Point ID:** GS0008

**Northing:** 4103339.316 Meters

**Easting:** 421722.931 Meters

**Orthometric Height:** 374.782 Meters

**Latitude:** 37 4 22.999010 N

**Longitude:** 93 52 50.116198 W

**Ellipsoid Height:** 345.443 Meters

**GS0015**



**Point ID:** GS0015

**Northing:** 4116260.445 Meters

**Easting:** 425168.149 Meters

**Orthometric Height:** 365.882 Meters

**Latitude:** 37 11 23.273054 N

**Longitude:** 93 50 35.251720 W

**Ellipsoid Height:** 336.206 Meters

**GS0021**



**Point ID:** GS0021

**Northing:** 4105500.081 Meters

**Easting:** 428263.147 Meters

**Orthometric Height:** 385.909 Meters

**Latitude:** 37 5 34.996292 N

**Longitude:** 93 48 26.014625 W

**Ellipsoid Height:** 356.5 Meters

**GS0044**



**Point ID:** GS0044

**Northing:** 4075575.852 Meters

**Easting:** 465571.491 Meters

**Orthometric Height:** 406.555 Meters

**Latitude:** 36 49 31.524997 N

**Longitude:** 93 23 9.814513 W

**Ellipsoid Height:** 377.654 Meters



**GS0052**



**Point ID:** GS0052

**Northing:** 4055774.417 Meters

**Easting:** 462642.95 Meters

**Orthometric Height:** 329.402 Meters

**Latitude:** 36 38 48.518317 N

**Longitude:** 93 25 4.544028 W

**Ellipsoid Height:** 300.635 Meters

**GS0054**



**Point ID:** GS0054

**Northing:** 4055750.98 Meters

**Easting:** 462673.82 Meters

**Orthometric Height:** 328.582 Meters

**Latitude:** 36 38 47.762069 N

**Longitude:** 93 25 3.296679 W

**Ellipsoid Height:** 299.815 Meters

**GS0058**



**Point ID:** GS0058

**Northing:** 4043027.268 Meters

**Easting:** 458861.187 Meters

**Orthometric Height:** 307.002 Meters

**Latitude:** 36 31 54.271834 N

**Longitude:** 93 27 34.394709 W

**Ellipsoid Height:** 278.45 Meters

**GS0059**



**Point ID: GS0059**

**Northing: 4043015.935 Meters**

**Easting: 458839.905 Meters**

**Orthometric Height: 306.932 Meters**

**Latitude: 36 31 53.900764 N**

**Longitude: 93 27 35.248381 W**

**Ellipsoid Height: 278.38 Meters**

**GS0072**



**Point ID:** GS0072

**Northing:** 4089169.395 Meters

**Easting:** 410558.212 Meters

**Orthometric Height:** 364.814 Meters

**Latitude:** 36 56 39.633088 N

**Longitude:** 94 0 16.157262 W

**Ellipsoid Height:** 335.805 Meters

**GS0100**



**Point ID:** GS0100

**Northing:** 4076178.338 Meters

**Easting:** 375519.572 Meters

**Orthometric Height:** 360.916 Meters

**Latitude:** 36 49 23.838848 N

**Longitude:** 94 23 44.772001 W

**Ellipsoid Height:** 331.957 Meters

**GS0123**



**Point ID: GS0123**

**Northing: 4150072.999 Meters**

**Easting: 393083.199 Meters**

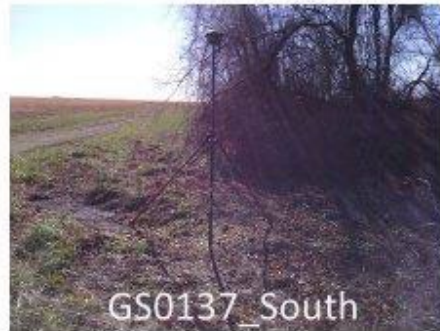
**Orthometric Height: 318.585 Meters**

**Latitude: 37 29 29.004002 N**

**Longitude: 94 12 33.982298 W**

**Ellipsoid Height: 287.977 Meters**

**GS0137**



**Point ID:** GS0137

**Northing:** 4140466.979 Meters

**Easting:** 372167.947 Meters

**Orthometric Height:** 297.46 Meters

**Latitude:** 37 24 7.821868 N

**Longitude:** 94 26 39.493175 W

**Ellipsoid Height:** 266.883 Meters



**GS0139**



**Point ID:** GS0139

**Northing:** 4088758.559 Meters

**Easting:** 417542.721 Meters

**Orthometric Height:** 410.901 Meters

**Latitude:** 36 56 28.597349 N

**Longitude:** 93 55 33.645164 W

**Ellipsoid Height:** 381.923 Meters

**GS0150**



**Point ID:** GS0150

**Northing:** 4173730.505 Meters

**Easting:** 384734.741 Meters

**Orthometric Height:** 278.573 Meters

**Latitude:** 37 42 12.842693 N

**Longitude:** 94 18 27.292591 W

**Ellipsoid Height:** 247.488 Meters

**GS0174**



**Point ID:** GS0174

**Northing:** 4179976.776 Meters

**Easting:** 384401.266 Meters

**Orthometric Height:** 265.586 Meters

**Latitude:** 37 45 35.316715 N

**Longitude:** 94 18 44.483389 W

**Ellipsoid Height:** 234.372 Meters

**GS0197**



**Point ID:** GS0197

**Northing:** 4196561.815 Meters

**Easting:** 381128.362 Meters

**Orthometric Height:** 242.302 Meters

**Latitude:** 37 54 31.796980 N

**Longitude:** 94 21 8.023929 W

**Ellipsoid Height:** 210.768 Meters

**GS0204**



**Point ID: GS0204**

**Northing: 4229737.71 Meters**

**Easting: 381767.578 Meters**

**Orthometric Height: 247.191 Meters**

**Latitude: 38 12 28.227320 N**

**Longitude: 94 21 1.592589 W**

**Ellipsoid Height: 215.1 Meters**

**GS0205**



**Point ID: GS0205**

**Northing: 4229758.777 Meters**

**Easting: 381765.358 Meters**

**Orthometric Height: 246.771 Meters**

**Latitude: 38 12 28.909606 N**

**Longitude: 94 21 1.696492 W**

**Ellipsoid Height: 214.68 Meters**

**GS0209**



GS0209\_West

**Point ID: GS0209**

**Northing: 4236556.889 Meters**

**Easting: 369140.501 Meters**

**Orthometric Height: 265.526 Meters**

**Latitude: 38 16 3.110330 N**

**Longitude: 94 29 45.179767 W**

**Ellipsoid Height: 233.453 Meters**

**GS0251**



**Point ID: GS0251**

**Northing: 4242869.063 Meters**

**Easting: 371762.645 Meters**

**Orthometric Height: 243.589 Meters**

**Latitude: 38 19 29.202025 N**

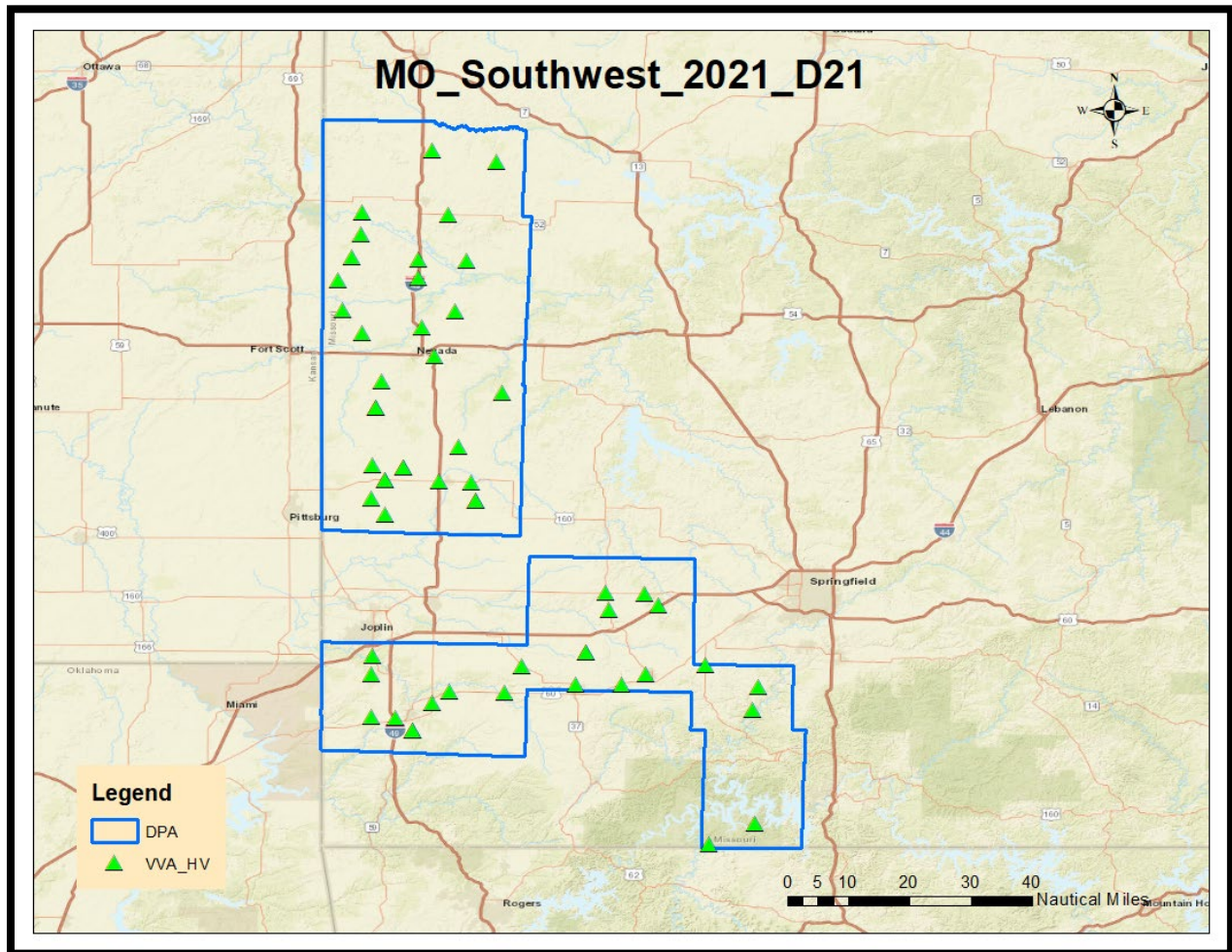
**Longitude: 94 28 1.426902 W**

**Ellipsoid Height: 211.465 Meters**



## Vegetated Vertical Accuracy Checkpoints High Vegetation

The Map shows the overall distribution of the Vegetated Vertical Accuracy Checkpoint, High Vegetation throughout the AOI. The following tables contain a list of the control using Easting, Northing, and Orthometric height. The coordinate system displayed is Universal Transverse Mercator UTM Zone 15, North American Datum 1983 (2011), North American Vertical Datum of 1988, Geoid 18 and using Meters for measurement.



**TABLE: High Vegetation**

Point ID	Easting	Northing	Ortho
GS0009	425810.101	4111316.516	371.138
GS0014	425143.166	4116260.874	365.723
GS0016	434495.221	4116009.165	380.213
GS0018	437856.245	4112602.842	371.819
GS0024	428593.043	4088732.306	410.071
GS0027	434702.463	4091838.794	413.763
GS0030	448912.096	4094320.257	413.099
GS0035	461793.914	4087782.353	373.538
GS0038	460395.207	4080830.316	379.813
GS0057	460785.221	4046623.944	398.919
GS0060	449423.086	4040410.888	347.936
GS0067	420131.732	4098265.799	398.599
GS0068	420135.995	4098287.951	398.412
GS0075	404647.145	4094497.345	374.528
GS0084	400276.178	4086407.37	371.017
GS0091	386976.396	4086928.386	344.402
GS0093	382595.111	4083640.405	362.898
GS0097	377930.53	4075421.909	379.728
GS0099	377961.421	4075443.696	379.748
GS0103	373779.142	4079352.777	368.465
GS0104	367878.666	4079518.76	360.647
GS0112	368200.945	4092398.341	346.395
GS0115	368515.853	4097963.949	285.221
GS0120	394135.725	4144312.524	297.716
GS0121	394135.501	4144330.21	297.915
GS0124	393107.495	4150071.156	318.839
GS0125	385447.026	4150479.594	292.928
GS0130	376806.195	4154857.802	294.502
GS0131	376782.983	4154855.468	294.847
GS0132	372311.772	4150989.917	295.516
GS0133	372315.703	4151016.213	295.827
GS0136	368935.946	4145491.038	288.477
GS0138	372141.04	4140477.95	296.982
GS0140	417567.012	4088755.667	411.471
GS0148	390112.021	4160743.213	298.438
GS0158	372026.04	4180648.061	264.303
GS0162	370530.622	4172769.475	272.487
GS0163	370550.04	4172783.384	272.191
GS0169	369332.896	4155459.13	287.76
GS0179	400964.276	4177097.369	266.027
GS0181	384807.782	4188412.155	265.508
GS0187	381830.795	4196887.683	250.811

<b>GS0188</b>	389884.883	4201799.392	241.086
<b>GS0199</b>	381196.232	4211869.614	237.153
<b>GS0202</b>	381429.114	4217560.438	242.555
<b>GS0212</b>	368140.166	4231706.078	238.8
<b>GS0215</b>	367774.985	4225337.18	254.817
<b>GS0216</b>	365492.128	4218231.366	264.874
<b>GS0219</b>	361911.763	4211412.121	272.891
<b>GS0222</b>	363033.298	4202356.911	241.331
<b>GS0224</b>	367475.152	4195587.626	243.058
<b>GS0228</b>	392857.062	4216882.904	235.338
<b>GS0235</b>	388598.198	4230910.864	275.608
<b>GS0239</b>	400190.004	4246546.189	282.317
<b>GS0244</b>	384949.744	4250363.806	256.694

**GS0009**



**Point ID:** GS0009

**Northing:** 4111316.516 Meters

**Easting:** 425810.101 Meters

**Orthometric Height:** 371.138 Meters

**Latitude:** 37 8 43.039073 N

**Longitude:** 93 50 7.449691 W

**Ellipsoid Height:** 341.583 Meters

**GS0014**



**Point ID: GS0014**

**Northing: 4116260.874 Meters**

**Easting: 425143.166 Meters**

**Orthometric Height: 365.723 Meters**

**Latitude: 37 11 23.279759 N**

**Longitude: 93 50 36.265127 W**

**Ellipsoid Height: 336.047 Meters**

**GS0016**



**Point ID:** GS0016

**Northing:** 4116009.165 Meters

**Easting:** 434495.221 Meters

**Orthometric Height:** 380.213 Meters

**Latitude:** 37 11 17.643834 N

**Longitude:** 93 44 16.888028 W

**Ellipsoid Height:** 350.607 Meters

**GS0018**



**Point ID: GS0018**

**Northing: 4112602.842 Meters**

**Easting: 437856.245 Meters**

**Orthometric Height: 371.819 Meters**

**Latitude: 37 9 27.940915 N**

**Longitude: 93 41 59.553990 W**

**Ellipsoid Height: 342.3 Meters**

**GS0024**



**Point ID:** GS0024

**Northing:** 4088732.306 Meters

**Easting:** 428593.043 Meters

**Orthometric Height:** 410.071 Meters

**Latitude:** 36 56 30.995232 N

**Longitude:** 93 48 6.928329 W

**Ellipsoid Height:** 381.086 Meters



**GS0027**



**Point ID: GS0027**

**Northing: 4091838.794 Meters**

**Easting: 434702.463 Meters**

**Orthometric Height: 413.763 Meters**

**Latitude: 36 58 13.395676 N**

**Longitude: 93 44 0.915173 W**

**Ellipsoid Height: 384.685 Meters**

**GS0030**



**Point ID:** GS0030

**Northing:** 4094320.257 Meters

**Easting:** 448912.096 Meters

**Orthometric Height:** 413.099 Meters

**Latitude:** 36 59 37.084557 N

**Longitude:** 93 34 26.850944 W

**Ellipsoid Height:** 383.964 Meters

**GS0035**



**Point ID: GS0035**

**Northing: 4087782.353 Meters**

**Easting: 461793.914 Meters**

**Orthometric Height: 373.538 Meters**

**Latitude: 36 56 7.124366 N**

**Longitude: 93 25 44.518945 W**

**Ellipsoid Height: 344.497 Meters**

**GS0038**



**Point ID: GS0038**

**Northing: 4080830.316 Meters**

**Easting: 460395.207 Meters**

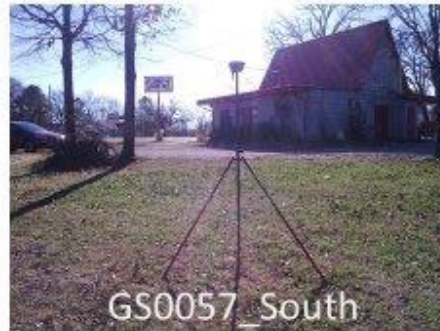
**Orthometric Height: 379.813 Meters**

**Latitude: 36 52 21.312396 N**

**Longitude: 93 26 39.752688 W**

**Ellipsoid Height: 350.809 Meters**

**GS0057**



**Point ID:** GS0057

**Northing:** 4046623.944 Meters

**Easting:** 460785.221 Meters

**Orthometric Height:** 398.919 Meters

**Latitude:** 36 33 51.287623 N

**Longitude:** 93 26 17.680725 W

**Ellipsoid Height:** 370.297 Meters

**GS0060**



**Point ID:** GS0060

**Northing:** 4040410.888 Meters

**Easting:** 449423.086 Meters

**Orthometric Height:** 347.936 Meters

**Latitude:** 36 30 27.732294 N

**Longitude:** 93 33 53.314961 W

**Ellipsoid Height:** 319.455 Meters

**GS0067**



**Point ID:** GS0067

**Northing:** 4098265.799 Meters

**Easting:** 420131.732 Meters

**Orthometric Height:** 398.599 Meters

**Latitude:** 37 1 37.891903 N

**Longitude:** 93 53 52.610340 W

**Ellipsoid Height:** 369.407 Meters

**GS0068**



**Point ID:** GS0068

**Northing:** 4098287.951 Meters

**Easting:** 420135.995 Meters

**Orthometric Height:** 398.412 Meters

**Latitude:** 37 1 38.612007 N

**Longitude:** 93 53 52.446303 W

**Ellipsoid Height:** 369.219 Meters



**GS0075**



**Point ID:** GS0075

**Northing:** 4094497.345 Meters

**Easting:** 404647.145 Meters

**Orthometric Height:** 374.528 Meters

**Latitude:** 36 59 30.418112 N

**Longitude:** 94 4 17.529134 W

**Ellipsoid Height:** 345.382 Meters

**GS0084**



**Point ID:** GS0084

**Northing:** 4086407.37 Meters

**Easting:** 400276.178 Meters

**Orthometric Height:** 371.017 Meters

**Latitude:** 36 55 6.298301 N

**Longitude:** 94 7 10.483350 W

**Ellipsoid Height:** 341.995 Meters

**GS0091**



**Point ID:** GS0091

**Northing:** 4086928.386 Meters

**Easting:** 386976.396 Meters

**Orthometric Height:** 344.402 Meters

**Latitude:** 36 55 17.799104 N

**Longitude:** 94 16 8.180754 W

**Ellipsoid Height:** 315.294 Meters

**GS0093**



**Point ID:** GS0093

**Northing:** 4083640.405 Meters

**Easting:** 382595.111 Meters

**Orthometric Height:** 362.898 Meters

**Latitude:** 36 53 29.196209 N

**Longitude:** 94 19 3.386345 W

**Ellipsoid Height:** 333.851 Meters

**GS0097**



**Point ID:** GS0097

**Northing:** 4075421.909 Meters

**Easting:** 377930.53 Meters

**Orthometric Height:** 379.728 Meters

**Latitude:** 36 49 0.428777 N

**Longitude:** 94 22 7.039751 W

**Ellipsoid Height:** 350.809 Meters

**GS0099**



**Point ID:** GS0099

**Northing:** 4075443.696 Meters

**Easting:** 377961.421 Meters

**Orthometric Height:** 379.748 Meters

**Latitude:** 36 49 1.149980 N

**Longitude:** 94 22 5.805790 W

**Ellipsoid Height:** 350.829 Meters

**GS0103**



**Point ID:** GS0103

**Northing:** 4079352.777 Meters

**Easting:** 373779.142 Meters

**Orthometric Height:** 368.465 Meters

**Latitude:** 36 51 5.996539 N

**Longitude:** 94 24 56.905035 W

**Ellipsoid Height:** 339.426 Meters

**GS0104**



**Point ID: GS0104**

**Northing: 4079518.76 Meters**

**Easting: 367878.666 Meters**

**Orthometric Height: 360.647 Meters**

**Latitude: 36 51 8.477537 N**

**Longitude: 94 28 55.204462 W**

**Ellipsoid Height: 331.555 Meters**



**GS0112**



**Point ID:** GS0112

**Northing:** 4092398.341 Meters

**Easting:** 368200.945 Meters

**Orthometric Height:** 346.395 Meters

**Latitude:** 36 58 6.473620 N

**Longitude:** 94 28 50.265448 W

**Ellipsoid Height:** 317.034 Meters

**GS0115**



**Point ID:** GS0115

**Northing:** 4097963.949 Meters

**Easting:** 368515.853 Meters

**Orthometric Height:** 285.221 Meters

**Latitude:** 37 1 7.187042 N

**Longitude:** 94 28 41.027362 W

**Ellipsoid Height:** 255.736 Meters

**GS0120**



GS0120\_North



GS0120\_East



GS0120\_West



GS0120\_South

**Point ID:** GS0120

**Northing:** 4144312.524 Meters

**Easting:** 394135.725 Meters

**Orthometric Height:** 297.716 Meters

**Latitude:** 37 26 22.557600 N

**Longitude:** 94 11 48.148595 W

**Ellipsoid Height:** 267.219 Meters

**GS0121**



**Point ID:** GS0121

**Northing:** 4144330.21 Meters

**Easting:** 394135.501 Meters

**Orthometric Height:** 297.915 Meters

**Latitude:** 37 26 23.131303 N

**Longitude:** 94 11 48.166815 W

**Ellipsoid Height:** 267.418 Meters

**GS0124**



**Point ID:** GS0124

**Northing:** 4150071.156 Meters

**Easting:** 393107.495 Meters

**Orthometric Height:** 318.839 Meters

**Latitude:** 37 29 28.954329 N

**Longitude:** 94 12 32.992137 W

**Ellipsoid Height:** 288.231 Meters

**GS0125**



**Point ID: GS0125**

**Northing: 4150479.594 Meters**

**Easting: 385447.026 Meters**

**Orthometric Height: 292.928 Meters**

**Latitude: 37 29 38.897473 N**

**Longitude: 94 17 45.108400 W**

**Ellipsoid Height: 262.256 Meters**

**GS0130**



**Point ID:** GS0130

**Northing:** 4154857.802 Meters

**Easting:** 376806.195 Meters

**Orthometric Height:** 294.502 Meters

**Latitude:** 37 31 56.919214 N

**Longitude:** 94 23 39.551627 W

**Ellipsoid Height:** 263.698 Meters

**GS0131**



**Point ID: GS0131**

**Northing: 4154855.468 Meters**

**Easting: 376782.983 Meters**

**Orthometric Height: 294.847 Meters**

**Latitude: 37 31 56.832364 N**

**Longitude: 94 23 40.495736 W**

**Ellipsoid Height: 264.043 Meters**



**GS0132**



**Point ID: GS0132**

**Northing: 4150989.917 Meters**

**Easting: 372311.772 Meters**

**Orthometric Height: 295.516 Meters**

**Latitude: 37 29 49.248457 N**

**Longitude: 94 26 40.205845 W**

**Ellipsoid Height: 264.742 Meters**

**GS0133**



**Point ID:** GS0133

**Northing:** 4151016.213 Meters

**Easting:** 372315.703 Meters

**Orthometric Height:** 295.827 Meters

**Latitude:** 37 29 50.103412 N

**Longitude:** 94 26 40.062239 W

**Ellipsoid Height:** 265.053 Meters

**GS0136**



**Point ID: GS0136**

**Northing: 4145491.038 Meters**

**Easting: 368935.946 Meters**

**Orthometric Height: 288.477 Meters**

**Latitude: 37 26 49.170104 N**

**Longitude: 94 28 54.124516 W**

**Ellipsoid Height: 257.785 Meters**

**GS0138**



**Point ID:** GS0138

**Northing:** 4140477.95 Meters

**Easting:** 372141.04 Meters

**Orthometric Height:** 296.982 Meters

**Latitude:** 37 24 8.164388 N

**Longitude:** 94 26 40.594089 W

**Ellipsoid Height:** 266.405 Meters

**GS0140**



**Point ID:** GS0140

**Northing:** 4088755.667 Meters

**Easting:** 417567.012 Meters

**Orthometric Height:** 411.471 Meters

**Latitude:** 36 56 28.511153 N

**Longitude:** 93 55 32.662077 W

**Ellipsoid Height:** 382.494 Meters

**GS0148**



**Point ID:** GS0148

**Northing:** 4160743.213 Meters

**Easting:** 390112.021 Meters

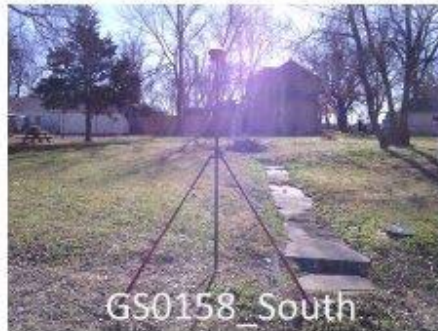
**Orthometric Height:** 298.438 Meters

**Latitude:** 37 35 13.904015 N

**Longitude:** 94 14 40.703098 W

**Ellipsoid Height:** 267.631 Meters

**GS0158**



**Point ID:** GS0158

**Northing:** 4180648.061 Meters

**Easting:** 372026.04 Meters

**Orthometric Height:** 264.303 Meters

**Latitude:** 37 45 51.158594 N

**Longitude:** 94 27 10.538787 W

**Ellipsoid Height:** 233.034 Meters

**GS0162**



**Point ID:** GS0162

**Northing:** 4172769.475 Meters

**Easting:** 370530.622 Meters

**Orthometric Height:** 272.487 Meters

**Latitude:** 37 41 34.841105 N

**Longitude:** 94 28 6.591124 W

**Ellipsoid Height:** 241.375 Meters



**GS0163**



**Point ID:** GS0163

**Northing:** 4172783.384 Meters

**Easting:** 370550.04 Meters

**Orthometric Height:** 272.191 Meters

**Latitude:** 37 41 35.302162 N

**Longitude:** 94 28 5.807365 W

**Ellipsoid Height:** 241.079 Meters

**GS0169**



**Point ID:** GS0169

**Northing:** 4155459.13 Meters

**Easting:** 369332.896 Meters

**Orthometric Height:** 287.76 Meters

**Latitude:** 37 32 12.721445 N

**Longitude:** 94 28 44.347428 W

**Ellipsoid Height:** 256.904 Meters

**GS0179**



**Point ID:** GS0179

**Northing:** 4177097.369 Meters

**Easting:** 400964.276 Meters

**Orthometric Height:** 266.027 Meters

**Latitude:** 37 44 8.901922 N

**Longitude:** 94 7 26.274884 W

**Ellipsoid Height:** 234.943 Meters

**GS0181**



GS0181\_North



GS0181\_East



GS0181\_West



GS0181\_South

**Point ID:** GS0181

**Northing:** 4188412.155 Meters

**Easting:** 384807.782 Meters

**Orthometric Height:** 265.508 Meters

**Latitude:** 37 50 9.137260 N

**Longitude:** 94 18 32.700411 W

**Ellipsoid Height:** 234.125 Meters

**GS0187**



**Point ID:** GS0187

**Northing:** 4196887.683 Meters

**Easting:** 381830.795 Meters

**Orthometric Height:** 250.811 Meters

**Latitude:** 37 54 42.696964 N

**Longitude:** 94 20 39.457605 W

**Ellipsoid Height:** 219.27 Meters

**GS0188**



**Point ID:** GS0188

**Northing:** 4201799.392 Meters

**Easting:** 389884.883 Meters

**Orthometric Height:** 241.086 Meters

**Latitude:** 37 57 25.666818 N

**Longitude:** 94 15 12.393864 W

**Ellipsoid Height:** 209.434 Meters

**GS0199**



**Point ID:** GS0199

**Northing:** 4211869.614 Meters

**Easting:** 381196.232 Meters

**Orthometric Height:** 237.153 Meters

**Latitude:** 38 2 48.375584 N

**Longitude:** 94 21 14.360624 W

**Ellipsoid Height:** 205.351 Meters

**GS0202**



**Point ID: GS0202**

**Northing: 4217560.438 Meters**

**Easting: 381429.114 Meters**

**Orthometric Height: 242.555 Meters**

**Latitude: 38 5 53.078693 N**

**Longitude: 94 21 8.206231 W**

**Ellipsoid Height: 210.631 Meters**



**GS0212**



**Point ID:** GS0212

**Northing:** 4231706.078 Meters

**Easting:** 368140.166 Meters

**Orthometric Height:** 238.8 Meters

**Latitude:** 38 13 25.253207 N

**Longitude:** 94 30 23.084132 W

**Ellipsoid Height:** 206.76 Meters

**GS0215**



**Point ID:** GS0215

**Northing:** 4225337.18 Meters

**Easting:** 367774.985 Meters

**Orthometric Height:** 254.817 Meters

**Latitude:** 38 9 58.490951 N

**Longitude:** 94 30 33.831880 W

**Ellipsoid Height:** 222.851 Meters

**GS0216**



**Point ID:** GS0216

**Northing:** 4218231.366 Meters

**Easting:** 365492.128 Meters

**Orthometric Height:** 264.874 Meters

**Latitude:** 38 6 6.804740 N

**Longitude:** 94 32 2.788198 W

**Ellipsoid Height:** 233.026 Meters

**GS0219**



**Point ID: GS0219**

**Northing: 4211412.121 Meters**

**Easting: 361911.763 Meters**

**Orthometric Height: 272.891 Meters**

**Latitude: 38 2 23.686313 N**

**Longitude: 94 34 25.003274 W**

**Ellipsoid Height: 241.139 Meters**

**GS0222**



**Point ID: GS0222**

**Northing: 4202356.911 Meters**

**Easting: 363033.298 Meters**

**Orthometric Height: 241.331 Meters**

**Latitude: 37 57 30.599405 N**

**Longitude: 94 33 32.785741 W**

**Ellipsoid Height: 209.72 Meters**

**GS0224**



**Point ID:** GS0224

**Northing:** 4195587.626 Meters

**Easting:** 367475.152 Meters

**Orthometric Height:** 243.058 Meters

**Latitude:** 37 53 53.406702 N

**Longitude:** 94 30 26.335774 W

**Ellipsoid Height:** 211.552 Meters

**GS0228**



**Point ID: GS0228**

**Northing: 4216882.904 Meters**

**Easting: 392857.062 Meters**

**Orthometric Height: 235.338 Meters**

**Latitude: 38 5 36.239617 N**

**Longitude: 94 13 18.742614 W**

**Ellipsoid Height: 203.369 Meters**

**GS0235**



**Point ID:** GS0235

**Northing:** 4230910.864 Meters

**Easting:** 388598.198 Meters

**Orthometric Height:** 275.608 Meters

**Latitude:** 38 13 9.418496 N

**Longitude:** 94 16 21.453373 W

**Ellipsoid Height:** 243.49 Meters



**GS0239**



**Point ID: GS0239**

**Northing: 4246546.189 Meters**

**Easting: 400190.004 Meters**

**Orthometric Height: 282.317 Meters**

**Latitude: 38 21 41.502150 N**

**Longitude: 94 8 32.771474 W**

**Ellipsoid Height: 250.051 Meters**

**GS0244**



**Point ID:** GS0244

**Northing:** 4250363.806 Meters

**Easting:** 384949.744 Meters

**Orthometric Height:** 256.694 Meters

**Latitude:** 38 23 38.744199 N

**Longitude:** 94 19 2.863882 W

**Ellipsoid Height:** 224.444 Meters