USGS science for a changing world

IFSAR Quality Assessment Report

AK_IFSAR-DEM5-Lot6_2012

NGTOC

2013-06-24

Hannah Boggs

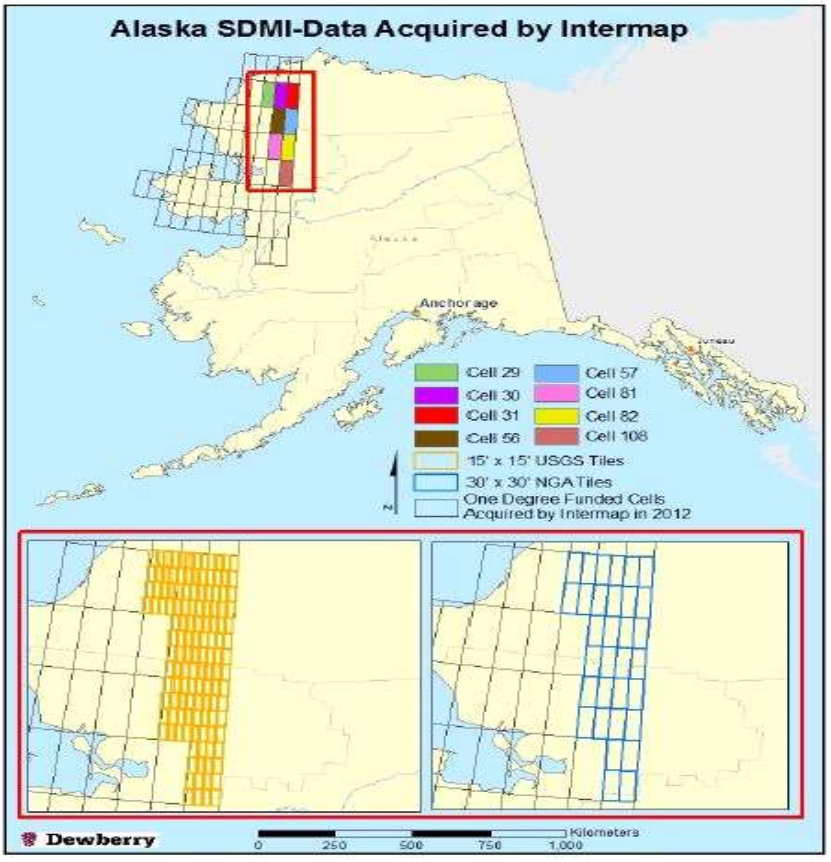

Figure 1 - Location of Cells 29, 30, 31, 56, 57, 81, 82, and 108.

Project Information

Project: AK_IFSAR-DEM5-Lot6_2012

Contractor: Dewberry *Project Type:* GPSC

Project Points of Contact:

Name:	Type:	Phone:	Email:
Patrick Emmett	CPT	573-308-3587	pemmett@usgs.gov

REPORT QUALIFICATION SUMMARY:

Task Order Overall:
meets requirements

Metadata:
1 of 1 Reviews Accepted
0 Reviews Not Accepted

Vertical Accuracy:
1 of 1 Reviews Accepted
0 Reviews Not Accepted

Vertical Offset:
14 of 14 Reviews Accepted
0 Reviews Not Accepted

Void Fill:
8 of 8 Reviews Accepted
0 Reviews Not Accepted

Breakline:
1 of 1 Reviews Accepted
0 Reviews Not Accepted

DEM(s):
1 of 1 Reviews Accepted
0 Reviews Not Accepted

DSM(s):
1 of 1 Reviews Accepted
0 Reviews Not Accepted

ORI(s):
1 of 1 Reviews Accepted
0 Reviews Not Accepted

NED Review:
1 of 1 DEM tile reviews recommended for NED 1/3rd
0 of 1 DEM tile reviews recommended for NED 1/9th
Final to NED mosaic(s) created
Mosaic(s) recommended for NED 1/3rd

Project Subdivision: Lots and Cells

List Lot with Cells:

Lot	Cells
6	29, 30, 31, 56, 57, 81, 82, 108.

of: 9

Date(s) Collected:

Start Date: 7/16/2012 *End Date:* 9/10/2012

Details:
Dates obtained from AlaskaSwathLocator.shp

Sensor Type: STAR-3i

Project Aliases: AK SDMI Block 6

Licensing: Public domain

Project Description:

The block consists of eight 1° x 1° cells: 29, 30, 31, 56, 57, 81, 82, and 108.
The average area per cell (land only) within block 6 is approximately 4,588 square kilometers.
Each cell contains 16 USGS 15' tiles and 4 NGA 30' tiles. Each 15' USGS tile contains a Digital

Terrain Model (DTM) and Digital Surface Model (DSM) with 5 meter post spacing, an Orthorectified Radar Image (ORI) with 0.625 meter pixel size, a hydrology layer, void areas, void fill sources, a slope mask, associated metadata, and Quality Report. Each 30' tile for the National Geospatial-Intelligence Agency (NGA) contains a re-sampled DTM with .4 x .8 arc/second post spacing, associated metadata files, and Quality Report.

Applicable Specification: AK Mid Accuracy

Review Information

Reviewer: Hannah Boggs

Date Delivered: 6/11/2013

3rd Party QA Performed: ☑ Dewberry

Date Assigned: 6/11/2013

Action To Contractor Date:	*Issue Description:*	*Return Date:*

Review Complete:
6/24/2013

Dates Project Worked:

Start:	6/11/2013
End:	6/24/2013

Project Materials Received

METADATA

Deliverables	*Delivered*	*XML Metadata*	*Required*	*Format*	*Quantity*	*Filename (if Applicable)*
Collection Report:	☐		☐	*Select...*		
Survey Report:	☑		☑	*PDF*	128	
Processing Report:	☑		☑	*PDF*	128	
QA/QC Report:	☑		☑	*PDF*	1	Alaska_Intermap_Blcok06_IFSAR_QCReport_D2_06042013.pdf
Project Level XML Metadata:	☐		☐	*XML*		
Project Extent:	☑	☐	☑	*.shp*	8	Alaska_Cell_##.shp
Tile Scheme:	☑	☐	☑	*.shp*	8	Cell_##_USGS_Index.shp

Checkpoints:	☑	☐	☑	.shp	1	SurveyCheckpts_Blk06_Cells_29_30_31_56_57_81_81_108.shp
Void Mask:	☑	☐	☑	.shp	96	
Slope Mask:	☑	☐	☑	.shp	128	
Fill Source Mask:	☑	☐	☑	.shp	96	
Additional Comments:						

NED

Deliverables	Delivered	XML Metadata	Required	Format	Quantity	Filename (if Applicable)
DEM Tiles:	☑	☑	☑	TIF	128	
Breaklines:	☑	☐	☑	.shp	128	
Additional Comments:						

OTHER

Deliverables	Delivered	XML Metadata	Required	Format	Quantity	Filename (if Applicable)
DSM(s):	☑	☑	☑	*TIF*	128	
ORI(s):	☑	☑	☑	*TIF*	155	
Flightline (SBETs):	☑	☐	☐	*.shp*	1	AlaskaSwathLocator.shp

Additional Deliverables	Delivered	XML Metadata	Required	Format	Quantity	Filename (if Applicable)
AOI Points provided by Dewberry	☑	☐	☐	FGD	1	Blk06_Intermap_QC_Cells_29_30_31_56_57_81_82_108_D2.gdb
Alaska Project Area	☑	☐	☐		1	AlaskaProjectArea.shp
HTML Metadata	☑	☐	☐	HTML	427	

TXT Metadata	☑	☐	☐	TXT	491	

Additional Comments:	

Geographic Information

Area Extent: 14173 *Square Miles*

Tile Size: 15 by 15 *Minutes*

DEM/DTM Grid Spacing: 5 *Meters*

Coordinate Reference System:

Projected Coordinate System: NAD_1983_Alaska_Albers
Projection: Albers
False_Easting: 0.00000000
False_Northing: 0.00000000
Central_Meridian: -154.00000000
Standard_Parallel_1: 55.00000000
Standard_Parallel_2: 65.00000000
Latitude_Of_Origin: 50.00000000
Linear Unit: Meter

Geographic Coordinate System: GCS_North_American_1983
Datum: D_North_American_1983
Prime Meridian: Greenwich
Angular Unit: Degree

Projection: Albers

Horizontal Datum: NAD83
CORS96 EPOCH 2003
◉ Meters ○ U.S. Feet ○ Int'l Feet

Vertical Datum: NAVD88
Geoid 09
◉ Meters ○ U.S. Feet ○ Int'l Feet

THIS PROJECTION COORDINATE REFERENCE SYSTEM IS CONSISTENT ACROSS THE FOLLOWING DELIVERABLES:

☐ *Project Extent*

Geographic Coordinate System
Authority: Custom
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_NORTH_AMERICAN_1983
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Seminminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

☑ *Project Tile Scheme*

☐ *Checkpoints*

NAD_1983_Alaska_Albers

☑ *Fill Source Mask*
☑ *Breakline(s)*
☑ *DEM(s)*
☑ *DEM XML Metadata*
☑ *DSM(s)*
☑ *DSM XML Metadata*
☑ *ORI(s)*
☑ *ORI XML Metadata*
☐ *Flightline(s)*

Geographic Coordinate System
Authority: Custom
Angular Unit: Degree (0.0174532925199433)

WKID: 3338 Authority: EPSG
Projection: Albers
False_Easting: 0.0
False_Northing: 0.0
Central_Meridian: -154.0
Standard_Parallel_1: 55.0
Standard_Parallel_2: 65.0
Latitude_Of_Origin: 50.0
Linear Unit: Meter (1.0)
Geographic Coordinate System: GCS_North_American_1983
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_North_American_1983
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101
Does not contain a Z datum even though it is a z enabled feature class.

Prime Meridian: Greenwich (0.0)
Datum: D_NORTH_AMERICAN_1983
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

☑ *Void Mask*
☑ *Slope Mask*

Additional Comments: Tiff rasters do not store the vertical datum, but elevation values from the DTM and DSM indicate the correct datum. Nothing is incorrectly projected.

Project Review

Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108.

Metadata Review

Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108.

Provided metadata files have been parsed using 'mp' metadata parser. Any errors generated by the parser are documented below for reference and/or corrective action.

The DEM XML Metadata parsed without errors.
Check if 'Best Use' metadata for NED: ☑ *Project Level* ○ *Tile Level* ◉

The DSM XML Metadata parsed without errors.
Check if 'Best Use' metadata for NED: ☐ *Project Level* ○ *Tile Level* ◉

The ORI XML Metadata parsed without errors.
Check if 'Best Use' metadata for NED: ☐ *Project Level* ○ *Tile Level* ◉

Based on this review, the USGS accepts the xml metadata provided.

Additional Comments:

End of Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108. Metadata Review

Vertical Accuracy Review

Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108 combined.

Required Vertical Accuracy

(•) Yes ( ) No

REQUIRED PRIMARY VERTICAL ACCURACY

Primary Vertical Accuracy Type:	Slope 0-10 degree
Confidence Interval Required:	90 th % CI
Required Unit:	Meters
Required # of checkpoints:	
Required RMSEz:	1.85
*Required Vertical Accuracy (RMSEz * .% CI)*	3
Additional Required Vertical Accuracy Information:	Number of checkpoints not specified in task order.

Reported Vertical Accuracy

(•) Yes ( ) No

REPORTED PRIMARY VERTICAL ACCURACY

Primary Vertical Accuracy Type:	Slope 0-10 degree
Confidence Interval Reported:	95 th % CI
Reported Unit:	Meters
Reported # of checkpoints:	6
Reported RMSEz:	0.18
*Reported Vertical Accuracy (RMSEz * .% CI)*	0.35
Additional Reported Vertical Accuracy Information:	Figures taken from Dewberry report titled, "Alaska_Intermap_Block06_IFSAR_QCReport_D2_06042013.pdf".

Reviewed Vertical Accuracy

(•) Yes ( ) No

REVIEWED PRIMARY VERTICAL ACCURACY

Primary Vertical Accuracy Type:	Slope 0-10 degree
Confidence Interval Reviewed:	95 th % CI

Reviewed Unit:	Meters
Reviewed # of checkpoints:	6
Reviewed RMSEz:	0.18
*Reviewed Vertical Accuracy (RMSEz * .% CI)*	0.35
Checkpoints are well distributed?	☐

Checkpoint Distribution Image

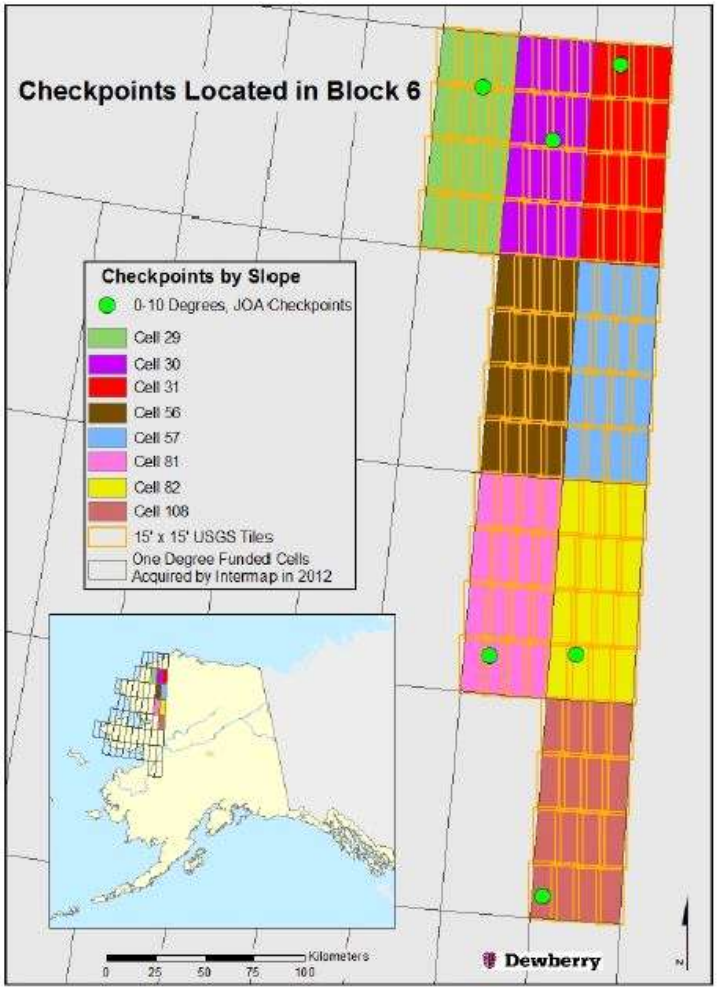

Figure 2 – Checkpoints displayed by slope.

Vertical Accuracy Results:

6 total control points were tested
The Minimum change in Z of all control points is -0.258998990059 Meters
The Maximum change in Z of all control points is 0.305000007153 Meters
The Range of the change in Z for all control points is 0.563998997211 Meters
The Average change in Z for all control points 0.0401666201651 Meters
The Standard Deviation for all control points is 0.189757949234 Meters
The Skew for all control points is -0.232159218223
The Kurtosis for all control points is -0.97772814272
The RMSEz for all control points is 0.177820395617 Meters
The NSSDA AccuracyZ (=RMSEz*1.96) for all control points is 0.34852797541 Meters at the 95% Confidence Level
The Consolidated Vertical Accuracy (CVA) at the 95th percentile for the dataset is 0.293499752879 Meters

Additional Reviewed Vertical Accuracy Information:	The number of checkpoints delivered to the NGTOC is too few to be considered "well distributed". Additionally, the number of checkpoints is too few to meaningfully test/report vertical accuracy by cell. For Lot 6, vertical accuracy will ONLY be tested using the entire delivery Lot. The RMSE for the entire delivery lot will be used to determine the maximum allowed vertical offset. Accuracy meets specification, accepted.

Based on this review, the USGS accepts the vertical accuracy.

End of Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108 combined. Vertical Accuracy Review

Vertical Offset Review

Between Cell 28 (from Lot 5) and Cell 29

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 28 (from Lot 5) and Cell 29 Vertical Offset Review

Vertical Offset Review

Between Cell 29 and Cell 30

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 29 and Cell 30 Vertical Offset Review

Vertical Offset Review

Between Cell 30 and 31

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 30 and 31 Vertical Offset Review

Vertical Offset Review

Between Cell 7 (from Lot 5) and Cell 29

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 7 (from Lot 5) and Cell 29 Vertical Offset Review

Vertical Offset Review

Between Cell 8 (from Lot 5) and Cell 30

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 8 (from Lot 5) and Cell 30 Vertical Offset Review

Vertical Offset Review

Between Cell 9 (from Lot 5) and Cell 31

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 9 (from Lot 5) and Cell 31 Vertical Offset Review

Vertical Offset Review

Between Cell 30 and Cell 56

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 30 and Cell 56 Vertical Offset Review

Vertical Offset Review

Between Cell 31 and Cell 57

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 31 and Cell 57 Vertical Offset Review

Vertical Offset Review

Between Cell 56 and Cell 57

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 56 and Cell 57 Vertical Offset Review

Vertical Offset Review

Between Cell 56 and Cell 81

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 56 and Cell 81 Vertical Offset Review

Vertical Offset Review

Between Cell 57 and 82

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 57 and 82 Vertical Offset Review

Vertical Offset Review

Between Cell 81 and Cell 82

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 81 and Cell 82 Vertical Offset Review

Vertical Offset Review

Between Cell 82 and Cell 108

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 82 and Cell 108 Vertical Offset Review

Vertical Offset Review

Between Cell 108 and Cell 136 (from Lot 4)

Review Required: (•) *Yes* ( ) *No*

Absolute maximum allowed: 0.36 *Absolute actual Maximum:* 0

Absolute reported maximum: 0 *Unit:* Meters

Based on this review, the USGS accepts the amount of vertical offset.

Additional comments:

End of Between Cell 108 and Cell 136 (from Lot 4) Vertical Offset Review

Void Fill Review

Cell 29

Review Required: (•) *Yes* ( ) *No*

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	3 %	*Maximum void allowed: (after fill)*	not applicable
Maximum void allowed per tile: (prior to fill)	5 %	*Maximum void allowed per tile: (after fill)*	not applicable
Maximum void reported: (prior to fill)	0.00 %	*Maximum void reported: (after fill)*	not reported
Maximum void reported per tile: (prior to fill)	0.01 %	*Maximum void reported per tile: (after fill)*	not reported
Maximum void reviewed: (prior to fill)	0.0009 %	*Maximum void reviewed: (after fill)*	0 %
Maximum void reviewed per tile: (prior to fill)	0.006 %	*Maximum void reviewed per tile: (after fill)*	0 %

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of Cell 29 Void Fill Review

Void Fill Review

Cell 30

Review Required: (•) *Yes* ( ) *No*

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	3 %	*Maximum void allowed: (after fill)*	*not applicable*
Maximum void allowed per tile: (prior to fill)	5 %	*Maximum void allowed per tile: (after fill)*	*not applicable*
Maximum void reported: (prior to fill)	0.00 %	*Maximum void reported: (after fill)*	*not reported*
Maximum void reported per tile: (prior to fill)	0.01 %	*Maximum void reported per tile: (after fill)*	*not reported*
Maximum void reviewed: (prior to fill)	*0.002* %	*Maximum void reviewed: (after fill)*	*0* %
Maximum void reviewed per tile: (prior to fill)	*0.01* %	*Maximum void reviewed per tile: (after fill)*	*0* %

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of Cell 30 Void Fill Review

Void Fill Review

Cell 31

Review Required: (•) *Yes* ( ) *No*

VOID FILL CHARACTERISTICS

Maximum void allowed:	3 %	*Maximum void allowed:*	*not applicable*

(prior to fill)		*(after fill)*	
Maximum void allowed per tile: (prior to fill)	5 %	*Maximum void allowed per tile: (after fill)*	*not applicable*
Maximum void reported: (prior to fill)	0.00 %	*Maximum void reported: (after fill)*	*not reported*
Maximum void reported per tile: (prior to fill)	0.01 %	*Maximum void reported per tile: (after fill)*	*not reported*
Maximum void reviewed: (prior to fill)	*0.0006* %	*Maximum void reviewed: (after fill)*	*0* %
Maximum void reviewed per tile: (prior to fill)	*0.005* %	*Maximum void reviewed per tile: (after fill)*	*0* %

Void Fill Source:

NED

Based on this review, the USGS <u>accepts</u> the void fill(s).

Additional comments:

End of <u>Cell 31</u> Void Fill Review

Void Fill Review

Cell 56

Review Required: (•) *Yes* ( ) *No*

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	3 %	*Maximum void allowed: (after fill)*	*not applicable*
Maximum void allowed per tile: (prior to fill)	5 %	*Maximum void allowed per tile: (after fill)*	*not applicable*
Maximum void reported: (prior to fill)	0.14 %	*Maximum void reported: (after fill)*	*not reported*
Maximum void reported per tile: (prior to fill)	0.68 %	*Maximum void reported per tile: (after fill)*	*not reported*
Maximum void reviewed:	*0.12* %	*Maximum void reviewed:*	*0* %

(prior to fill)		*(after fill)*	
Maximum void reviewed per tile: (prior to fill)	*0.67* %	*Maximum void reviewed per tile: (after fill)*	*0* %

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of Cell 56 Void Fill Review

Void Fill Review

Cell 57

Review Required: (•) *Yes* ( ) *No*

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	3 %	*Maximum void allowed: (after fill)*	*not applicable*
Maximum void allowed per tile: (prior to fill)	5 %	*Maximum void allowed per tile: (after fill)*	*not applicable*
Maximum void reported: (prior to fill)	0.07 %	*Maximum void reported: (after fill)*	*not reported*
Maximum void reported per tile: (prior to fill)	0.23 %	*Maximum void reported per tile: (after fill)*	*not reported*
Maximum void reviewed: (prior to fill)	*0.06* %	*Maximum void reviewed: (after fill)*	*0* %
Maximum void reviewed per tile: (prior to fill)	*0.04* %	*Maximum void reviewed per tile: (after fill)*	*0* %

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of Cell 57 Void Fill Review

Void Fill Review

Cell 81

Review Required: (•) *Yes* ( ) *No*

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	3 %	*Maximum void allowed: (after fill)*	not applicable
Maximum void allowed per tile: (prior to fill)	5 %	*Maximum void allowed per tile: (after fill)*	not applicable
Maximum void reported: (prior to fill)	0.10 %	*Maximum void reported: (after fill)*	not reported
Maximum void reported per tile: (prior to fill)	0.40 %	*Maximum void reported per tile: (after fill)*	not reported
Maximum void reviewed: (prior to fill)	0.09 %	*Maximum void reviewed: (after fill)*	0 %
Maximum void reviewed per tile: (prior to fill)	0.40 %	*Maximum void reviewed per tile: (after fill)*	0 %

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of Cell 81 Void Fill Review

Void Fill Review

Cell 82

Review Required: (•) *Yes* ( ) *No*

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	3 %	*Maximum void allowed: (after fill)*	not applicable
Maximum void allowed per tile: (prior to fill)	5 %	*Maximum void allowed per tile: (after fill)*	not applicable

Maximum void reported: (prior to fill)	0.91 %	*Maximum void reported: (after fill)*	*not reported*
Maximum void reported per tile: (prior to fill)	7.22 %	*Maximum void reported per tile: (after fill)*	*not reported*
Maximum void reviewed: (prior to fill)	*0.47* %	*Maximum void reviewed: (after fill)*	*0* %
Maximum void reviewed per tile: (prior to fill)	*2.37* %	*Maximum void reviewed per tile: (after fill)*	*0* %

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

Intermap reports the maximum void value per tile as 7.22%, however, reviewer at NGTOC found only 2.37% maximum void in the tiles. Accepted.

End of Cell 82 Void Fill Review

Void Fill Review

Cell 108

Review Required: (•) *Yes* ( ) *No*

VOID FILL CHARACTERISTICS

Maximum void allowed: (prior to fill)	3 %	*Maximum void allowed: (after fill)*	*not applicable*
Maximum void allowed per tile: (prior to fill)	5 %	*Maximum void allowed per tile: (after fill)*	*not applicable*
Maximum void reported: (prior to fill)	0.01 %	*Maximum void reported: (after fill)*	*not reported*
Maximum void reported per tile: (prior to fill)	0.03 %	*Maximum void reported per tile: (after fill)*	*not reported*
Maximum void reviewed: (prior to fill)	*0.006* %	*Maximum void reviewed: (after fill)*	*0* %
Maximum void reviewed per tile: (prior to fill)	*0.03* %	*Maximum void reviewed per tile: (after fill)*	*0* %

Void Fill Source:

NED

Based on this review, the USGS accepts the void fill(s).

Additional comments:

End of Cell 108 Void Fill Review

Breakline Review

Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108

Review Required: (•) *Yes* ( ) *No*

BREAKLINE FILE CHARACTERISTICS:

- [ ] Separate folder for breakline files.
- [ ] Breaklines contain elevation values.
- [x] Waterbody Breaklines.

Polyline ( ) Polygon (•)

- [ ] Single elevation value per waterbody feature.
- [x] Required.

Waterbody Elevations were created via Proprietary waterbody level techniques.

- [x] Double Line Stream Breaklines (Streams Approximately > 50 ft).

Polyline ( ) Polygon (•)

Downstream DLS Flow is Proprietary .

- [x] Required.
- [ ] Single Line Breaklines.
- [x] No missing or misplaced breaklines.

Based on this review, the USGS accepts the breakline files.

ADDITIONAL COMMENTS, ERRORS, ANOMALIES, OR OTHER ISSUES:

Meets task order requirements.

End of Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108 Breakline Review

DEM Review

Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108

BARE-EARTH DEM TILE CHARACTERISTICS:

- [ ] Separate folder for bare-earth DEM files

Raster File Type: TIF
Raster Cell Size: 5 Meters
Tile bit depth/pixel Type: 32_BIT_FLOAT
Interpolation or Resampling Technique: Proprietary

DEM tiles overlap: (•) Yes ( ) No
- [x] DEM tiles conform to Project Tiling Scheme
- [x] Quantity of DEM files conforms to Project Tiling Scheme
- [x] DEM tiles are uniform in size

- [x] DEM tiles properly edge match and free of edge artifacts
- [x] Tiles are free from Spikes and Pits
- [x] Tiles are free from Data Holidays
- [x] Tiles do not exhibit systematic sensor error or cornrowing

DEM tiles are properly Hydro Flattened (•) Yes ( ) No

- [x] Waterbodies 2 Acers or greater are flattened
- [x] Streams 50 ft or greater are flattened in a downstream manner
- [x] Tidal Boundaries/Shorelines are flattened

- [x] No missing islands
- [x] Perennial ice/snow treated as terrain
- [x] Annual ice/snow not treated as terrain
- [x] Bridges/Overpasses are properly removed
- [x] Culverts are maintained (Not Hydro Enforced)
- [x] Depressions, Sinks, are not filled in (Not Hydro Conditioned)
- [x] Vegetation properly removed
- [x] Manmade structures properly removed

Tiles meet NED 1/3rd Requirements: (•) Yes. ( ) No.
Tiles meet NED 1/9th Requirements: ( ) Yes. (•) No.

Based on this review, the USGS accepts the DEM tiles.

End of Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108 DEM Review

DSM Review

Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108

Review Required: (•) *Yes* ( ) *No*

BARE-EARTH DSM TILE CHARACTERISTICS:

- [ ] Separate folder for bare-earth DEM files

Raster File Type: TIF
Raster Cell Size: 5 Meters
Tile bit depth/pixel type: 32_BIT_FLOAT
Interpolation or Resampling Technique: Proprietary

DSM tiles overlap: (•) Yes ( ) No

- [x] DSM tiles conform to Project Tiling Scheme
- [x] Quantity of DSM files conforms to Project Tiling Scheme
- [x] DSM tiles are uniform in size

- [x] DSM tiles properly edge match and free of edge artifacts
- [x] Tiles are free from Spikes and Pits
- [x] Tiles are free from Data Holidays
- [x] Tiles do not exhibit systematic sensor error or cornrowing

DSM tiles are properly Hydro Flattened (•) Yes ( ) No

- [x] Waterbodies 2 Acers or greater are flattened
- [x] Streams 50 ft or greater are flattened in a downstream manner
- [x] Tidal Boundaries/Shorelines are flattened
- [x] No missing islands
- [x] Perennial ice/snow treated as terrain
- [x] Annual ice/snow not treated as terrain
- [x] Culverts are maintained (Not Hydro Enforced)
- [x] Depressions, Sinks, are not filled in (Not Hydro Conditioned)

Based on this review, the USGS accepts the DSM tiles.

End of Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108 DSM Review

ORI Review

Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108

Review Required: (•) *Yes* ( ) *No*

ORI TILE CHARACTERISTICS:

- [ ] Separate folder for ORI files

Raster File Type: TIF

Raster Cell Size: 0.625 Meters

Tile bit depth/pixel type: 8_BIT_UNSIGNED

Interpolation or Resampling Technique: Proprietary

ORI tiles overlap: (•) Yes ( ) No

- [x] ORI tiles conform to Project Tiling Scheme
- [x] Quantity of ORI files conforms to Project Tiling Scheme
- [x] ORI tiles are uniform in size

- [x] ORI tiles properly edge match and free of edge artifacts
- [x] Tiles are free from Data Holidays
- [x] Tiles do not exhibit systematic sensor error or cornrowing

- [x] ORI tiles validate hydroflattening/breakline placement and quantity

Based on this review, the USGS accepts the ORI tiles.

ADDITIONAL COMMENTS, ERRORS, ANOMALIES, OR OTHER ISSUES:

According to the ORI Metadata: "Areas where null data occurs within an image, such as shadows, are assigned the value 0. Areas where the sensor could not resolve the return signal are assigned the value 1". Several of these areas were observed, however, all of these areas appear to have a value of 1 assigned, even in areas where the void/fill masks indicate a shadow or layover instead of being assigned a 0 as described in the metadata. If these areas are also "unresolved" an explanation of how this is determined would be appreciated (This was originally requested for the Lot 8 priority Cells and the response to those cells shall suffice). Response from Dewberry, "While the delivered ORI may show areas of unresolved signals, Intermap collects data from multiple look directions so that while one look has unresolved signals, valid data is collected from another look and as a result there is no decorrelation present in the elevation data. Not all pixels with a value of 0 or 1 in the ORIs may correspond to the void shapefiles." This issue was addressed in Lot 8 priority Cells and is acceptable.

End of Lot 6 Cells; 29, 30, 31, 56, 57, 81, 82, and 108 ORI Review

Based on this review, the provided delivery meets the Task Order requirements.

NED Information

Final to NED mosaic created: (•) *Yes* ( ) *No*

Mosaic method used: Blend

Mosaic recommended for NED 1/9th: ( ) *Yes* (•) *No*

Mosaic recommended for NED 1/3rd: (•) *Yes* ( ) *No*

Resolution limits recommendation to the NED 1/3rd.

Metadata Created: (•) *Yes* ( ) *No*

Reviewer created shapefiles documenting the exact extent of the data delivered to NGTOC with delivery lot 6. These are located in the Metadata-Shapefiles-NGTOC_Created_Footprint subfolders.

Additional Comments:

END OF REPORT