DELIVERABLE SUMMARY

Lot 5 of Task Order G16PD00016 – FEMA R6 AR Dardanelle Reservoir QL2 Lidar consists of the following:

Raw Point Cloud Data

- LAS v1.4 format
- Broken into Calibration Lines, Cross Ties, and Production Lines
- Some areas of standing water were present during the time of collection; Fugro received approval to fly during these conditions.

Classified Point Cloud

- LAS v1.4 format
- 2,594 tiles

Bare Earth Surface

- ERDAS .IMG format
- 2,594 tiles

Lidar Intensity Image

- Grayscale 8-bit GeoTIFF/TFW format
- 2,594 tiles

Breaklines

- Hydro flattened breaklines in shapefile format. Per the agreement made during the kickoff meeting, the hydro flattened breaklines (rivers and lakes) were not clipped to the project boundary.
- The supplemental breaklines that were collected and used in DEM generation under bridges to ensure a logical terrain surface below a bridge are delivered as a separate shapefile.
- There are approximately 20 islands smaller than an acre that are included in the hydro breaklines for areas where river elevations varied on each side of the island. Two examples are shown within the screenshots, below. In these examples, the lidar has an elevation wrap of 0.5m. The label on the pink islands is the area in acres of the island. In areas where islands under the project specification of one acre are included in the hydro breaklines, they are included to improve the DEM aesthetically. The river is not flat bank to bank in these areas by over 0.5m. If the hydro breaklines were flattened to meet the specification, the DEM would appear to be digging on one side of the river to a noticeable extent.
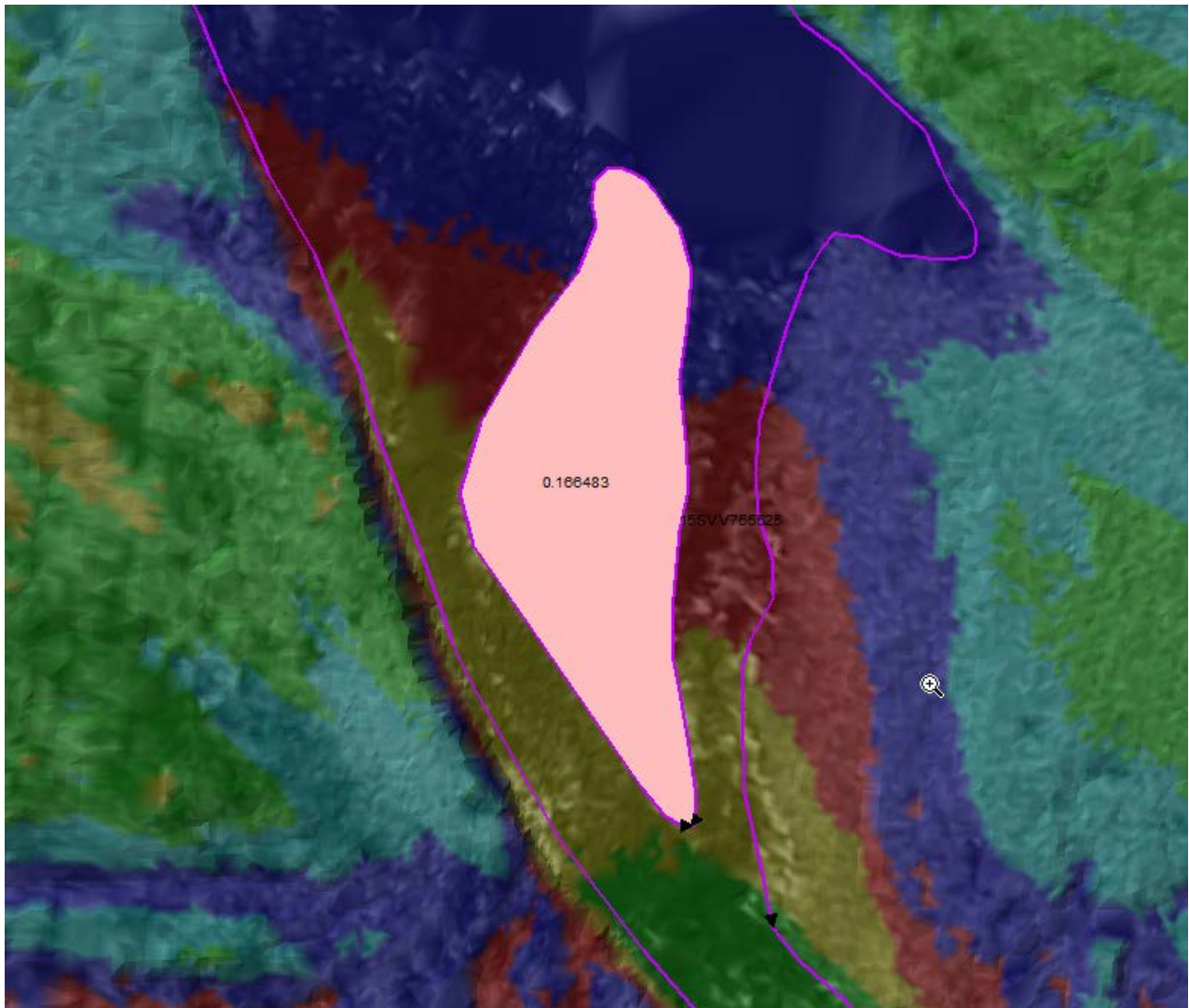
Metadata

- Collection Report
    - Previously delivered; PDF format
- Survey Report
    - Revised since submission with the pilot based upon USGS pilot feedback:
        - *DardanelleReservoirAR_Lidar_Checkpoint_Coordinates.xlsx*: Added "Reporting Group" column to indicate whether the point was for NVA or VVA; froze the top row; and added the following comment to row 149, "**Ellip H m:** used as elevation to calculate vertical accuracy."
        - *DardanelleReservoirAR_Lidar_Checkpoint_Coordinates.shp*: Added "Rprtg_Grp" field to indicate whether the point was for NVA or VVA.
    - PDF, Excel, and shapefile formats
- Data Extents
    - Project extents; shapefile format
- Product Metadata
    - Project
        - Overall project metadata file; XML format
        - Parsed with no errors

- Lift
    - Metadata files for each lift of acquired data; XML format
    - Parsed with no errors
- Product - One metadata file for the following; XML format
    - Classified Point Cloud
        - Parsed with no errors
    - Hydro Flattened Bare Earth DEM
        - Parsed with no errors
    - Hydro Flattened Breaklines
        - Parsed with no errors
    - Intensity Images
        - Parsed with no errors
- Files also include statements regarding a data void; see below for details

Project Report

- Incorporates the Processing Report and QA/QC Reports; PDF and shapefile formats
- Report also includes the following statement regarding a data void: During product development, a data void approximately one acre in size was discovered. The data void exists in the raw point cloud, classified point cloud, and intensity image deliverables. The DEM was generated using a TIN model built from the classified ground points. The DEM pixel values over the void area were assigned by extracting the elevations from the TIN surface. A shapefile (*DardanelleReservoirAR_Lidar_Data_Void.shp*) identifying the location of the void is being submitted with this report; the void exists between Area 1 flight lines 48 and 49 within lift 160207_165_15005200_14, classified point cloud tile 15SVV935135.las, and intensity image tile 15SVV935135.tif/tfw.
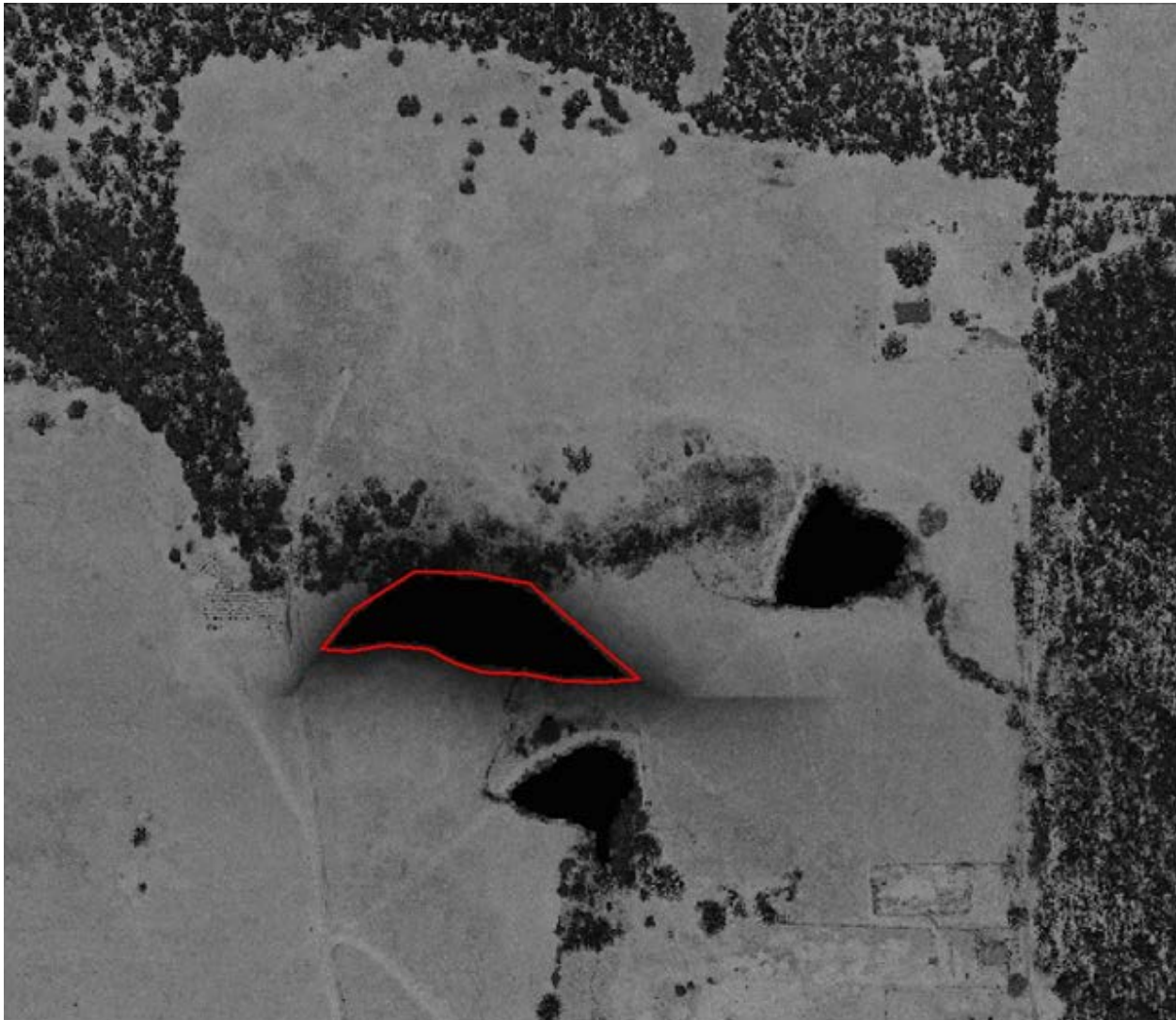
Acquisition Reports

- Previously delivered; shapefile format

Tile Layout

- USGS tiling scheme; shapefile format