Summary:

**DEM Errors:**

The DEM is not hydroflattened.  Hydroflattening is not part of task order and not required.

The DEM has not been clipped and bad data

exists on the edge. Contractor will check to see, DEM should have been clipped.  But if it wasn't they will redeliver.  Are there screenshots or a shapefile showing this or its location?

**Swath Errors:**

14 classes exist in swath The unique sensor used in this project generates noise classes.  Classes are explained in report.  It is better value to the customer to keep them.  Product of using Topo-bathymetric sensor.

**all flightlines**: point count does not match

actual number of points Sensor related, sensor automatically creates derived water surface points and gives them return number of zero, not all software can see these when calculating point count.  Which is why software doesn’t always match header point count.

**all flightlines**: the MIN MAX X,Y, &Z in the

header differs from the true MIN MAX—Contractor will investigate this.

**00330**: red, green & blue values are

not populated in point data Contractor will check it and populate them if possible. As is, RGB population is a bonus to Task Order, if it can’t be fixed easily, were not going to hold the contractor to it, especially since this could potentially involve a re-flight,as the system may not have collected imagery for that line.

**LAS Errors:**

tile **10UDU560242**is empty and = to 0.00 MB Possible it may not have been put on disc correctly, contractor will redeliver tile, contractor isn’t showing 0.00MB

Various tilesdo not appear to have normalized intensity and RGB to 16 bit intensity is collected on both lasers as 16bit, may not be using full values based on laser wavelength.  In any case, they are collected in 16 bit and put in raw, so it is impossible for it not to be 16 bit, in a particular tile, the full values may not be present, but this doesn't mean it isn't 16 bit.  Contractor will follow up in greater detail in their coming report.

MAX X, Y, and Z in header differs from true X,Y,and Z, Contractor will check and fix if they are not correct.

**in all tiles**: point count does not match actual

number of points same as before, the derived water surface points with 0 as return number are not read by all software.

**Missing Data:**

project boundary .shp Contractor will deliver.

calibration points .shp Not used.  Calibration done offsite.  Special sensor specific calibration procedure.  No calibration point applied to data to adjust data.

**Spatial Reference System:**

The Task Order Spatial reference system on

page 12

C.1.e.(i)(c) **Spatial Reference System:**

(01) The Spatial Reference System shall be: UTM

Zone 10, NAD83, Meters (to 2 decimal places);

NAVD88, GEOID12A, Meters (to 2 decimal

places).Data is referenced to datum used in the 2014 Elwha data which had the 2011 adjustment.  This makes it an apples to apples comparison for the customer.  Re-projecting doesn’t make sense.  Project is correct as is.  The Task Order just did not make direct reference to the 2011 adjustment.

**XML Metadata Errors:**

**Checkpoints .xml**: Change UTM Zone 18.

to UTM Zone 10

The projection parameters are incorrect in

all .xml metadata except the checkpoint.xml

All .xmls reference the NAD83 2011 datum

correction. The task order requirement is

NAD83. Delete the 2011 datum correction from

all .xml metadata. See Metdata Review section

for all other .xml errors Contractor will fix in metadata.

**All supporting shapefiles:**

reproject and redeliver all .shps without the NAD83 2011 datum correction or reprocess all

raster and point cloud data to be referenced to the 2011 correction Keep projection as is, all should have the 2011 adjustment.

**Vertical Accuracy Issues:**

The task order requires 20 NVA and 5 VVA

points for this project. 10 NVA and 4 VVA were

delivered. Points are not randomly spaced, do

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not represent the entire area, and are not

enough according to specification to accurately

assess vertical accuracy.

According to the *"2015021*

*Elwha Topo Bathy*

*Report"*on page 18 Section 4.4 it

appears "available" checkpoints were used

rather than new points collected. See

statement from report below: "GDS **assessed**the **check points available**

against the 4band

imagery mosaic created from

the current survey. Check points were organized

into valid NVA (Nonvegetated

Vertical

Accuracy) and VVA (Vegetated Vertical

Accuracy) groups based on the existing ground

conditions. These newly grouped NVA and VVA

points were used for the absolute vertical

accuracy checks. No check points or ground

points were used to adjust the lidar data. 10

NVA points and 4 VVA points were available for

analyses."

Checkpoints provided do not cover the entire

project are not randomly spaced and don't meet

the quantity required by the Task Order to

assess the vertical accuracy. This was all agreed on prior to task order award.  Difficult assess was a limitation back in 2014 (this is why checkpoints are not well distributed).  There is no issue from the Task Order standpoint.

**Vertical Accuracy Note:**

The **<rawnva>**reported in point cloud

& project .xmls, the NVA of the DEM **<vertaccv>**

reported in all applicable .xmls are the reported

accuracy from the vendor taken from Accuracy

Pass 2 using only 8 points for NVA. NGTOC

documented vendor reported accuracies in the

QA report from Pass 1 assessing 10 points.-explained in report.  2 points were dropped due to what appeared to be a change in elevation from when the points were originally surveyed.  Gravel area on beach.  Decided best to leave as is as it's the fairest interpretation of of the vertical accuracy.

**Swath Note:**

**all flightlines and tiles**: Legacy point count(0) does not

match 1.4 point count Not clear what comment is referring too?

Edge of flightline bits do not appear to be populated correctly, Flightlines processed in leica software, global treatment, it would have to be incorrect for an entire flight line.  Contractor does not believe this call makes sense.

**Tiled LAS and DEM note:**

Task Order requires tiles to be 1500x1500 m.

The tiles are 750x750m. - Smaller tile size was used due to data density and 750 made more sense, also 750 was the size for the previous collect in 2014, made more sense to use this. Please disregard the size mentioned in task order, all parties are in agreement to use the 750 size.

DEM tile 10UDU560250 is empty and should be

deleted from the project –Contractor states that file is not and empty and will redeliver tile.

**XML Metadata note:**

**<absres> <ordres>**parameters are only

required to be populated with the cell size in

raster data .xmls. Contractor will Fix.

Regarding Other Metadata issues:

Contractor did parse through the usgs metadata parser the they came out clean.  Was QA check done using the usgs website parser? Contractor is not sure where the reported errors are coming from?

There is a field to have laser information reported, but parser will not pass if two lasers are entered (two were used in this project).  Decided its better to have information for both lasers, but understood that this will cause the parser to not pass.