



# Jefferson Lab Alignment Group

## Data Transmittal

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**Checked:**

**# :** D1911

**DETAILS:**

Data: Step2B\HALLD\Target\190301a

Below are the results from the Hall D liquid hydrogen target survey carried out on March 1<sup>st</sup>, 2019. The target was surveyed in-place on the target cart, then the survey fiducials were updated to reflect the found center of the liquid hydrogen target. During the alignment of the target, the survey crew was instructed to leave the target's z value at the same location as the previous beryllium target (see transmittal B1910).

The ideal and found coordinates are shown in meters relative to the CEBAF coordinate system. There are 2 sets of found coordinates. The first is relative to the current fiducialized liquid hydrogen target; the second uses the fiducial x, y values for the liquid hydrogen target and the z value for the beryllium target.

The beam following coordinates (bfs - millimeters) are also shown and are described as follows: Negative x is to the beam right from ideal beam looking downstream; negative y is the amount lower than beamline; negative z is amount upstream from ideal target. Positive yaw is the counter clockwise rotation about the Y axis; negative pitch is the clockwise rotation about the X axis (physics standard); positive roll is the clockwise rotation about the Z axis.

Liquid Hydrogen	Cebaf Coordinate Location [meters]			Beam Following [millimeters]			Angular Position [ degrees ]		
	X [m]	Y [m]	Z [m]	dX [mm]	dY [mm]	dZ [mm]	Yaw°	Pitch°	Roll°
Ideal	80.60000	104.70000	398.78983	-	-	-	0.00000	0.00000	0.00000
As-Set	80.60015	104.69991	398.78740	0.15	-0.088	-2.430	0.00802	-0.00344	-0.01662
As-Set [z rel Beyl]				-	-	-0.480	-	-	-