**Peak Ring Breccias**

**Unit 2a – 617.31 – 664.57mbsf = 618.54 – 665.72 mCCSF-A**

Unit 2a, from 617.31 – 664.57mbsf, described as a suevite during VCD has an average CT number of 1570.8 +/- 119.4 (2σ). It is characterized in CT facies by a moderate CT number matrix and clasts of bright and dark CT number material (**FIGURE 1**). In the upper core sections of this unit, stylolites appear as laminations of light grey material, locally, rare occurrences of CT bright pyrite occur, and sub-vertically oriented high D and high Z, linear structures occur, e.g. 618.80 mBSF. Downwards through the core sees a slight increase in clast size, although this occurs through several fining and coarsening upwards sequences. Furthermore, the proportion of high CT number clasts increases with depth whilst the relative proportion of low CT number clasts decreases. With increasing depth, sub-vertically oriented, low CT number, planar structures can be seen with low Zeff (effective atomic number) and low D (effective density) e.g. 620.30 mBSF. From ~650 mbsf, many of the clasts have high CT number rims. The mineralization of red minerals within the matrix of the suevite at ~658 mBSF is reflected by a relative increase in CT number, with marginal increases in both Zeff and D.

The contact to Unit 2b marks an abrupt change in clast size and variability:

1. Unit 2a has significantly fewer high CT number, high D clasts than Unit 2b.
2. Unit 2a has generally smaller clasts than Unit 2b.

**Unit 2b – 664.57-712.82mbsf = 665.72 – 713.81 mCCSF-A**

Unit 2b from 664.57 – 712.82 mBSF, described as a suevite during VCD has an average CT number of 1711.6 +/- 344.0 (2σ). The unit is characterized by a moderate CT number matrix with variable clast size, sorting, and angularity, and variably high and low CT numbers in clasts. Progressing downwards, the unit gets gradually, and continuously, coarser (**FIGURE 2**). Limestone clasts are conspicuous due to their high CT numbers, high densities, and high Zeff. Melt clasts occur as moderate CT number, moderate D, and moderate Zeff, while target rock clasts are highly variable. Rare mafic clasts can be found, which are distinct from the black impact melt clasts in CT because of their high CT numbers, High Zeff, and high D, e.g. 706.68 mBSF where a mafic target rock clast is rimmed by impact melt rock. At 701.67 mBSF, the suevite is re-brecciated, this is apparent in the CT data by the secondary matrix possessing very low D, and high Zeff.

The contact to Unit 2c marks a change in CT facies:

1. The matrix of Unit 2b has a lower D than that of Unit 2c.
2. Where most of the clasts in Unit 2c are lower D than the matrix, the majority of clasts in Unit 2b have a greater D than the matrix.
3. The Zeff of the matrix abruptly increases.

**Unit 2c - 712.82-721.60 mbsf = 713.81 – 722.98 mCCSF-A**

Unit 2c from 712.82-721.60 mBSF, described as a suevite during VCD has an average CT number of 1919.4 +/- 393.0 (2σ). The unit is characterized by high CT number groundmass with angular low CT number clasts (**FIGURE 3**). There are occasional large clasts of varied materials e.g. 84R-2, where three such clasts can be found, one has a high CT number, high Zeff, and high D, the second has a moderate CT number, high D, and low Zeff, and the third has a low CT number, low D, and low Zeff. Melt clasts typically have low CT numbers relative to the matrix. An abrupt change in CT characteristics occurs at 715.60 mBSF, where the CT number of the matrix increases, this increase in CT number is due to an increase in D. This change corresponds in a color change of the matrix from black to green-colored. From this depth, the unit has much fewer small clasts and more common melt clasts that span the entire width of the core. An anomalously high CT region occurs in the bottom 30cm of this unit. This is primarily due to an abrupt change in the matrix Zeff, and a lack of large clasts.

The contact to Unit 3a marks a change in CT facies:

1. Average CT number is comparatively high in Unit 2c.
2. Unit 3a lacks angular clasts, instead it has fluxion textures.

**Unit 3a – 721.60 – 737.57mbsf = 722.98 – 739.13 mCCSF-A**

Unit 3a from 721.60 – 737.57 mBSF, described as a clast-poor impact melt rock during VCD has an average CT number of 1879.5 +/- 277.9 (2σ). The unit is characterized by an intermixture of high and low CT number materials and occasional angular clasts (**FIGURE 4**). The high CT number material, notable for its green appearance in VCD, has high Zeff and slightly higher D in comparison to the second material, which is black upon visual inspection. Both materials contain occasional angular clasts with both high and low CT numbers.

The contact to Unit 3b marks a drop in average CT number, reflected as drops in bothZeff number and D, an increase in homogeneity, and the onset of a turtle-shell pattern in the underlying Unit 3b.

**Unit 3b – 737.57 – 746.99mbsf = 739.13 – 748.90 mCCSF-A**

Unit 3a from 737.57 – 746.99 mBSF, described as a clast-poor impact melt rock during VCD has an average CT number of 1803.7 +/- 181.5 (2σ). The unit is characterized by a turtle-shell pattern and occasional clasts of CT bright and dark material (**FIGURE 5**). The turtle-shell pattern originates from rounded, low CT-number zones, between which veins of high CT-number material occurs. The CT brightness contrast between these zones occurs primarily due to D contrasts. The upper 1m of Unit 3b lacks the turtle-shell pattern. Within this unit 3 large clasts of material of Unit 4 (granitoid) facies occurs. Finally, at 744.68 mBSF, an unusual clast of CT dark material, within which several clasts can be seen, possesses an aureole of CT bright material, related primarily to high D.

The contact to Unit 4 is marked by an abrupt reduction in Zeff and an increase in D. The net effect upon CT number is minor, however, there is a distinct change in texture to a granular material without a matrix.