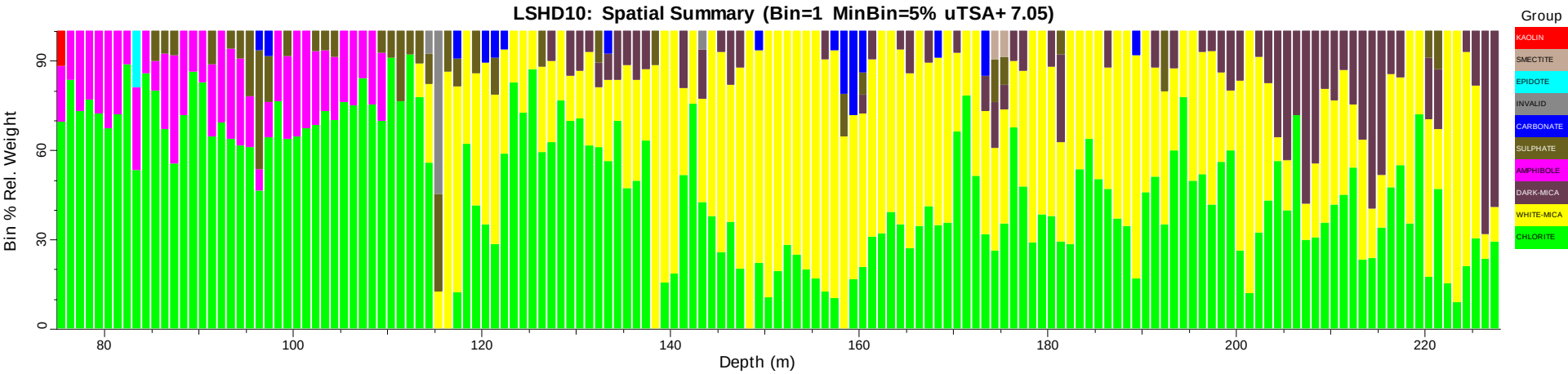
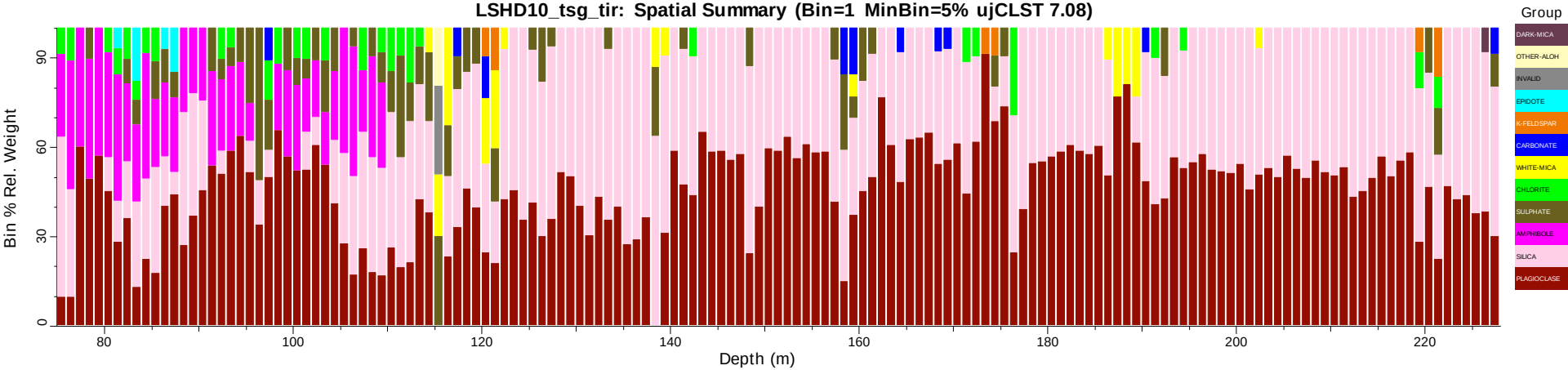
# Mineralogy Summary

## Drillhole: **LSHD10**

*HyLogger-3*
*Process Level 2*


LSHD10: Spatial Summary (Bin=1 MinBin=5% uTSA+ 7.05)
Bin % Rel. Weight
0
30
60
90
80
100
120
140
160
180
200
220
Depth (m)
Group
KAOLIN
SMECTITE
EPIDOTE
INVALID
CARBONATE
SULPHATE
AMPHIBOLE
DARK-MICA
WHITE-MICA
CHLORITE


LSHD10_tsg_tir: Spatial Summary (Bin=1 MinBin=5% ujCLST 7.08)
Bin % Rel. Weight
0
30
60
90
80
100
120
140
160
180
200
220
Depth (m)
Group
DARK-MICA
OTHER-ALOH
INVALID
EPIDOTE
K-FELDSPAR
CARBONATE
WHITE-MICA
CHLORITE
SULPHATE
AMPHIBOLE
SILICA
PLAGIOCLASE

| TERMINOLOGY | DESCRIPTION |
|---|---|
| **TSG** | The Spectral Geologist™ software package (and associated file format) |
| **Process Level 1** | Dataset processed with automated (System) mineral interpretations |
| **Process Level 2** | Dataset processed with geologist refined (User) mineral interpretations |
| **VNIR** | Visible-Near Infrared region (380-1000 nm) |
| **SWIR** | Short-wave Infrared region (1000-2500 nm) |
| **TIR** | Thermal Infrared region (6000-14500 nm) |
| **Bin** | Selected summary interval for plot (metres) |
| **MinBin** | Selected minimum spectral weight for plot (%) |
| **Bin % Rel. Weight** | Relative spectral weight %<br>(normalized to 100 for minerals above minimum spectral weight) |
| **sTSA+** | System (process Level 1) TSA+ SWIR unmixing algorithm |
| **uTSA+** | User (process Level 2) TSA+ SWIR unmixing algorithm |
| **sjCLST** | System (process Level 1) jCLST TIR unmixing algorithm |
| **ujCLST** | User (process Level 2) jCLST TIR unmixing algorithm |

**TSA+ algorithm:**
"The Spectral Assistant™ plus" - an improved TSA unmixing routine utilised in TSG. Identifies and estimates abundances of minerals from VNIR or SWIR spectra using linear modelling of in-built reference library mineral spectra. Default results are best-fit 1 to 3 mineral spectral models (Schodlok et al., 2016).

**jCLST algorithm:**
"Justified Constrained Least Squares" - an improved CLS unmixing routine utilised in TSG. Identifies and estimates abundances of minerals from TIR spectra using quadratic modelling of restricted sets of in-built reference library mineral spectra, guided by TSA results. Default results are best-fit 1 to 3 mineral spectral models (Schodlok et al., 2016).

Schodlok, MC, Whitbourn, L, Huntington, J, Mason, P, Green, A, Berman, M, Coward, D, Connor, P, Wright, W, Jolivet, M and Martinez, R 2016, HyLogger-3, a visible to shortwave and thermal infrared reflectance spectrometer system for drill core logging: functional description: Australian Journal of Earth Sciences, v. 63, no. 8, p. 929-940, doi:10.1080/08120099.2016.1231133