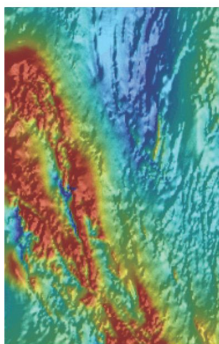


## Department of State Development

Metadata: South Australian Mineralogical  
Data package -  
TIR\_GROUP\_SMECTITE\_uTSAT

Date Printed: 25/11/2016



**Government of South Australia**  

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Department of State Development

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## Dataset

**Title:** South Australian Mineralogical Data package - TIR\_GROUP\_SMECTITE\_uTSAT

**Custodian:** Department of State Development

**Jurisdiction:** South Australia

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## Description

### Abstract:

The data package contains three sets of GOCAD™ 3D objects. Data assembled in the sets comprise complete spectral logs for all drillholes that have been scanned with the Hylogger™, a derived 1m down-sampled series of curves for a specific property, and an interpolated voxel for the same property.

### Background

As part of the AuScope National Virtual Core Library (NVCL) program, the Geological Survey of South Australia (GSSA) acquired a HyLogger™ spectral core scanner developed and supported by CSIRO Exploration and Mining. The GSSA is in the process of scanning the State drill-core collection, obtaining spectral data and linescan images. To date ~210 km of core from 852 drill holes have been scanned (Figure 1). At present HyLogger™ data is available as The Spectral Geologist™ (TSG) files, continuous linescan images, summary histograms and basic text files. Data are accessible either via the AuScope Discovery portal (<http://portal.auscope.org/portal/gmap.html>) or via the South Australian Resource Information Geoserver (SARIG) (<https://sarig.pir.sa.gov.au/Map>).

A complementary data set has been developed to meet the needs of a broader cross section of users. To achieve this:

1. A consistent and automated workflow for processing and storing the spectral data was developed
2. The entire South Australian archive as of April 2016 has received consistent reprocessing. The Level-1 HyLogger™ data prepared using TSG 7 and automated scripts has delivered a consistent format to enable whole of State analysis. [‘Level-1’ data refers to HyLogger data that has been processed to mask out non-core material from the spectral record. The term ‘User’ or ‘u’ as a prefix indicates that the mineral interpretation using the TSA library has received some attention from a specialist].
3. This data format will be made available through the South Australian Geological Survey web delivery services

A workflow was developed to export CSV files from the TSG software, perform a series of quality assurance procedures, and produce a CSV file that can be imported into a Microsoft Access 2010 database (Figure 2). A version of the data, down-sampled to one metre intervals, has been produced for the purpose of integrating spectral data into GOCAD™ and these enable analysis and assessment at various scales. To aid interpretation of this point data, 3D interpolations, in the form of voxels, are also available for download.

### ANZLIC Search Terms:

GEOSCIENCES Hylogger, GEOSCIENCES Spectral, MINERALS Exploration

**Geographic Extent Polygon:** -280,000 mE, 7,360,000 mN; 1,248,000 mE, 7,360,000 mN; 280,000 mE, 5,652,000 mN; 1,248,000 mE, 5,652,000 mN;

**North bounding latitude:** 7,360,000 mN

**South bounding latitude:** 5,652,000 mN

**East bounding longitude:** -280,000 mE

**West bounding longitude:** 1,248,000 mE

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## Data Currency

**Beginning Date:** 2015-07-01

**End Date:** 2016-04-30

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## Dataset Status

**Progress:** Not known

**Maintenance:** As required

**Version Number:** 1

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## Access

**Stored format:** DIGITAL GOCAD data

**Available format(s):** DIGITAL GOCAD project and object files (.vo, .vs, .pl, .gp)

**Access constraint(s):** Data is not to be redistributed without approval from Authorisation Officer.

**SARIG Layer(s):** SARIG: Geology/3D Geological Model Areas

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## Data Quality

**Lineage:** Source data and lineage is summarised in table below.

**Positional accuracy:** Horizontal accuracy of the drillholes is variable due to the method of capture (map, handheld GPS, differential GPS, etc)

**Attribute accuracy:** Spectral attributes are based on interpretation of reflectance spectrums produced by the Hylogger™. Mineralogy determined by The Spectral Analyst are subject to alternative interpretations.

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## Contact Information

**Contact organisation:** Department of State Development

**Contact position:** Customer Services

**Contact mail address:** GPO Box 320  
Adelaide SA 5001

**Contact telephone:** 08 8463 3000

**Contact email:** resources.customerservices@sa.gov.au

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## Metadata Dates

**Add date:** 2016-11-15

Change date: 2016-11-25

## Responsible Party

Responsible party: Program Leader, Geoscientific Information Management

Responsible party function: Custodian/Steward

## Description

Dataset classification: Principal version

Spatial representation type: Matrix

Dimension: x,y,h

## Sample Graphic(s)

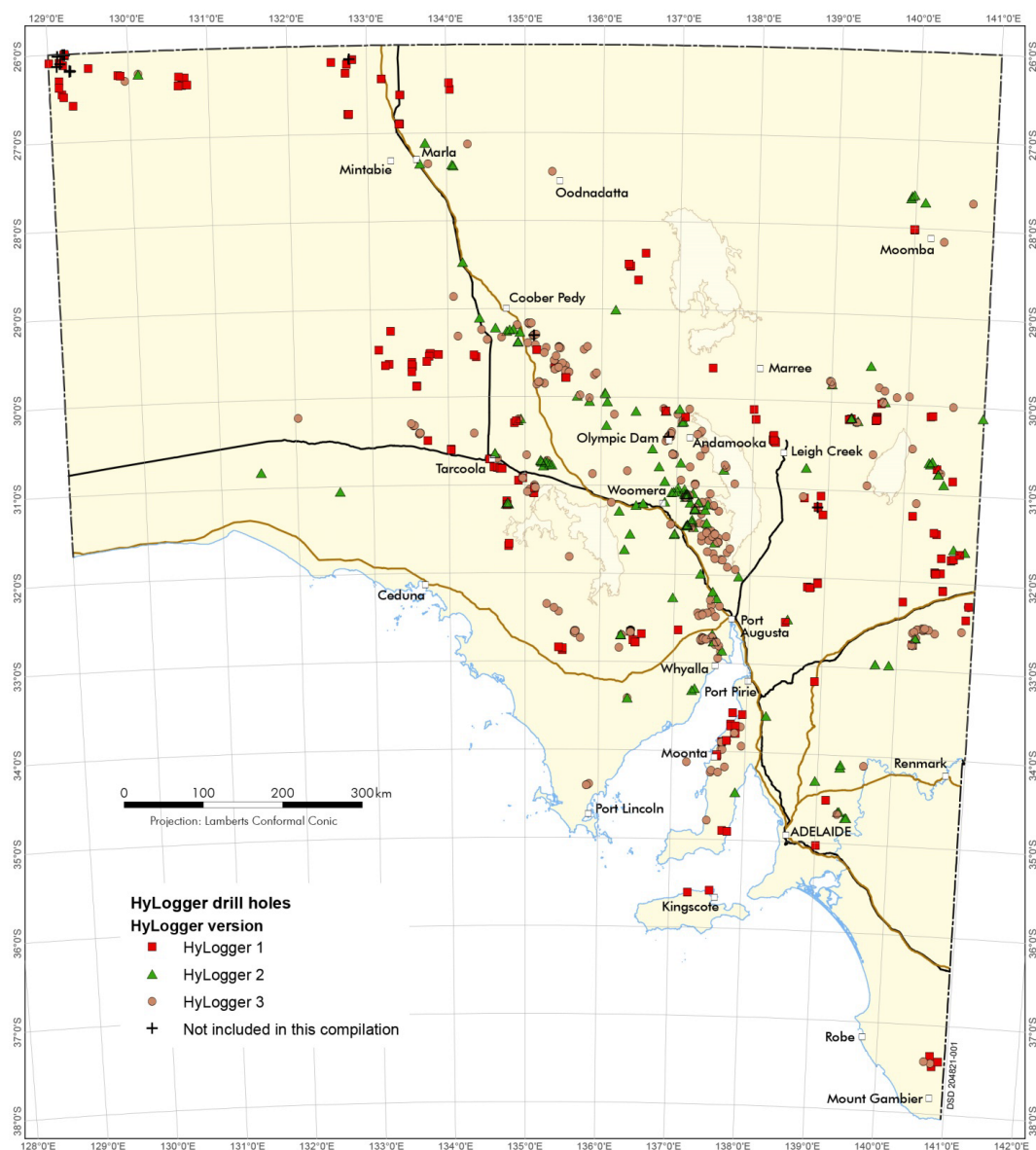


Figure 1: Location of drill holes in South Australia that have been scanned with various generations of the HyLogger<sup>TM</sup> spectral

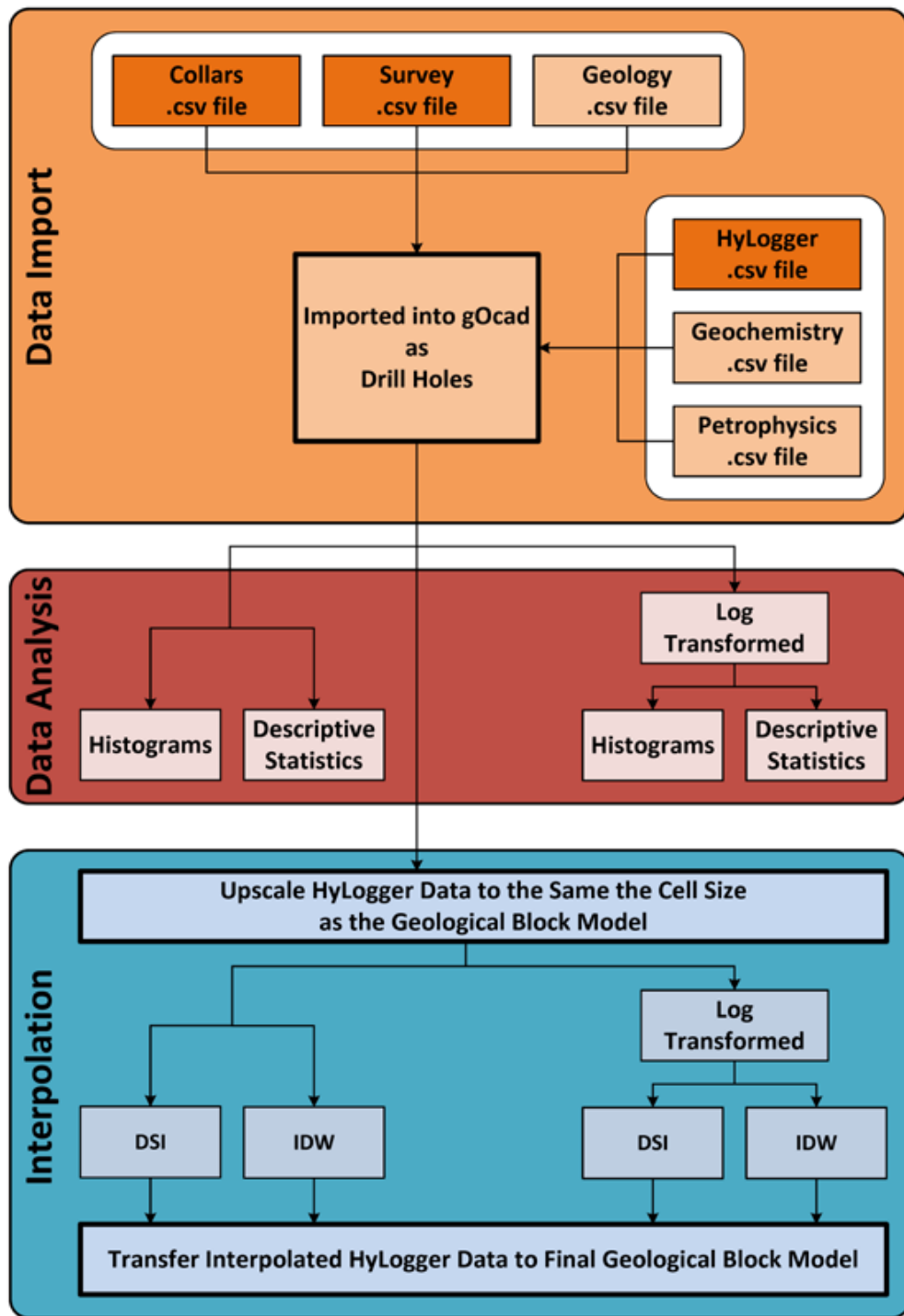


Figure 2: Processing workflow for spectral data in Gocad

| File Name                                                                                                                      | Size    | Type                | Comments and data sources                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------|---------|---------------------|-------------------------------------------------------------------------------------------------------------------------|
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel.v0                                                                      | 9 KB    |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_flags@                                                                  | 337 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_Distance_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_points@ | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_DSI@             | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_DSI_LOG@         | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_DW@              | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_DW_LOG05@        | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_DW_LOG10@        | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_DW_LOG15@        | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_DW_LOG20@        | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_DW_LOG30@        | 674 MB  |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_HyLogger_TR_GROUP_SMECTITE_uTSAS_UpScale_Average_voxel_Original@        | 674 MB  |                     |                                                                                                                         |
| SA_HyLogger_DrillHoles.gp                                                                                                      | 73.4 MB |                     |                                                                                                                         |
| SA_HyLogger_DrillHoles__curves@                                                                                                | 332 MB  | Group (Drill Holes) | Drill holes containing spectral attributes gained from the Hylogger™                                                    |
| SA_HyLogger_DrillHoles__zms@                                                                                                   | 0.83 MB |                     |                                                                                                                         |
| HyLogger_TR_GROUP_SMECTITE_uTSAS_curve.pl                                                                                      | 10.2 MB | Curve               | The spectral abundance for the TR smectite group of minerals, down-sampled to one metre intervals, displayed as curves. |

Figure 3: File descriptions

## Usage

**Purpose:** 3D mineralogical data compilation of public domain data

**Use:** Geoscientific studies and mineral exploration.

**Usage limitations:** Interpretation of spectra may change depending of the software package or version used.

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## Dataset Associations

**Dependant datasets:** van der Wielen SE, Fabris AJ, Mauger AJ, Gordon GA, Keeling JL and Giles D 2016. South Australian Spectral Database, Report Book 2016/00023. Department of State Development, South Australia, Adelaide.

Ayling B, Huntington J, Smith B and Edwards D 2016. Hyperspectral logging of middle Cambrian marine sediments with hydrocarbon prospectivity: a case study from the southern Georgina Basin, northern Australia. Australian Journal of Earth Science <http://dx.doi.org/10.1080/08120099.2016.1204625>.

Halley S, Dilles JH and Tosdal RM 2015. Footprints: Hydrothermal alteration and geochemical dispersion around porphyry Copper copper deposits. Society of Economic Geologists (SEG) Newsletter 100:12–17.

Laukamp C, Cudahy T, Caccetta M, Chia J, Gessner K, Haest M, Liu YC and Rodger, A 2010. The uses, abuses and opportunities for hyperspectral technologies and derived geoscience information. Geo-computing 2010 Extended Abstracts, AIG Bulletin 51:73–76.

Laukamp C, Termin KA, Pejčić B, Haest M and Cudahy T 2012. Vibrational spectroscopy of calcic amphiboles - applications for exploration and mining. European Journal of Mineralogy 24:863–878.

Sonntag I, Laukamp C and Hagemann S 2012. Low potassium hydrothermal alteration in low sulfidation epithermal systems as detected by IRS and XRD: an example from the Co-O Mine, Eastern Mindanao, Philippines. Ore Geology Reviews 45:47–60.

van der Wielen SE, Fabris AJ, Halley SW, Keeling JL, Mauger AJ, Gordon, GA, Keeping T, Giles D and Hill SM 2013. An exploration strategy for IOCG mineral systems under deep cover. MESA Journal 71:18– 30.

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## Origin

**Dataset size:** 7.5 GB

**Projection:** UTM Zone 53

**Datum:** GDA94

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## Dataset Management

## Attributes

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