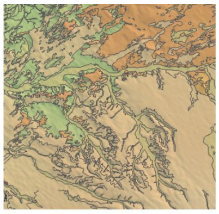
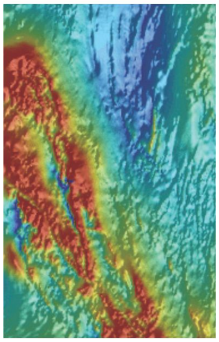


Department of State Development

Metadata: Emmie Bluff IOCG Mineral System Model.

Date Printed: 22/04/2015



Dataset

Title: Emmie Bluff IOCG Mineral System Model.

Custodian: Geological Survey of South Australia

Jurisdiction: South Australia

Description

Abstract:
The eastern Gawler Craton hosts the giant Olympic Dam iron oxide - associated copper-gold (IOCG) deposit, as well as several other world class IOCG deposits (i.e. Prominent Hill and Carrapateena). The region is covered by a thick sequence of Mesoproterozoic to Cenozoic sedimentary and volcanic rocks, making the region difficult and costly to explore using conventional methods.Sets of high quality geoscientific data from the eastern Gawler Craton, such as magnetic, gravity, seismic, radiometric, geological, geochemical, geochronological and hyperspectral data, have been systematically acquired by the Geological Survey of South Australia. Previously these datasets had been looked at independently of each other. Now, however, modern 3D geological mapping and data integration techniques have been adopted by the authors to produce a common earth model of the Emmie Bluff IOCG prospect, that can be readily updated as new data become available. By using this common earth model in conjunction with an understanding of IOCG mineral systems, future explorationists will be able predict where the particular data they are observing lies both spatially and conceptually within the alteration/mineralising system.There are two different styles of IOCG mineral systems which have been active in the eastern Gawler Craton: haematite-dominated systems on the Stuart Shelf, and magnetite-dominated systems on the Yorke Peninsula. For the subject model, UBC gravity and magnetic inversions have been used to map haematite and magnetite alteration in three dimensions, using the method outlined by Williams and Chopping (2009). Chemical modelling of these IOCG mineral systems suggests that high grade mineralisation is likely to form at the haematite/magnetite transition, but the bulk of the mineralisation should occur largely within the haematite zone (Bastrokov, et al., 2007). Multi-element geochemical and spectral mineralogy data have been used to characterise the distribution and degree of development of sericite, chlorite, albite and K-feldspar alteration.

ANZLIC Search Terms:
INDUSTRY Mining Exploration

GEN Category: Proviince

GEN Custodial Jurisdiction: South Australia

GEN Name: Gawler Province

Geographic Extent Polygon: E665000 N6596000, E726000 N6596000, E726000 N6543000, E665000 N6543000

North bounding latitude: N6596000

South bounding latitude: N6543000

East bounding longitude: E726000

West bounding longitude: E665000

Data Currency

Beginning Date: 20110501

End Date: 20120907

Dataset Status
Progress: Complete

Maintenance: As required

Version Number: 1

Access
Stored format: DIGITAL, 3D-pdf

Available format(s): DIGITAL, Gocad, 3D-pdf

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

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Data Quality

Positional accuracy: Horizontal accuracy of the drillholes is variable due to the method of capture (map, hand-heldGPS, differential GPS, etc); Horizontal accuracy of Formation boundaries is variable (interpreted); Vertical accuracy of the interpolated formation surfaces, topographic and basement surfaces are variable due to resampling (topographic surface), interpretation (formation boundaries) and interpolation.

Contact Information
Contact organisation: Department of State Development

Contact position: Customer Service Centre

Contact mail address: GPO Box 1671

Contact telephone: 08 8463 3000

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Metadata Dates
Add date: 2012-09-21

Change date: 2015-04-22

Responsible Party
Responsible party: Geophysics and Prospectivity Team, Geological Survey of South Australia

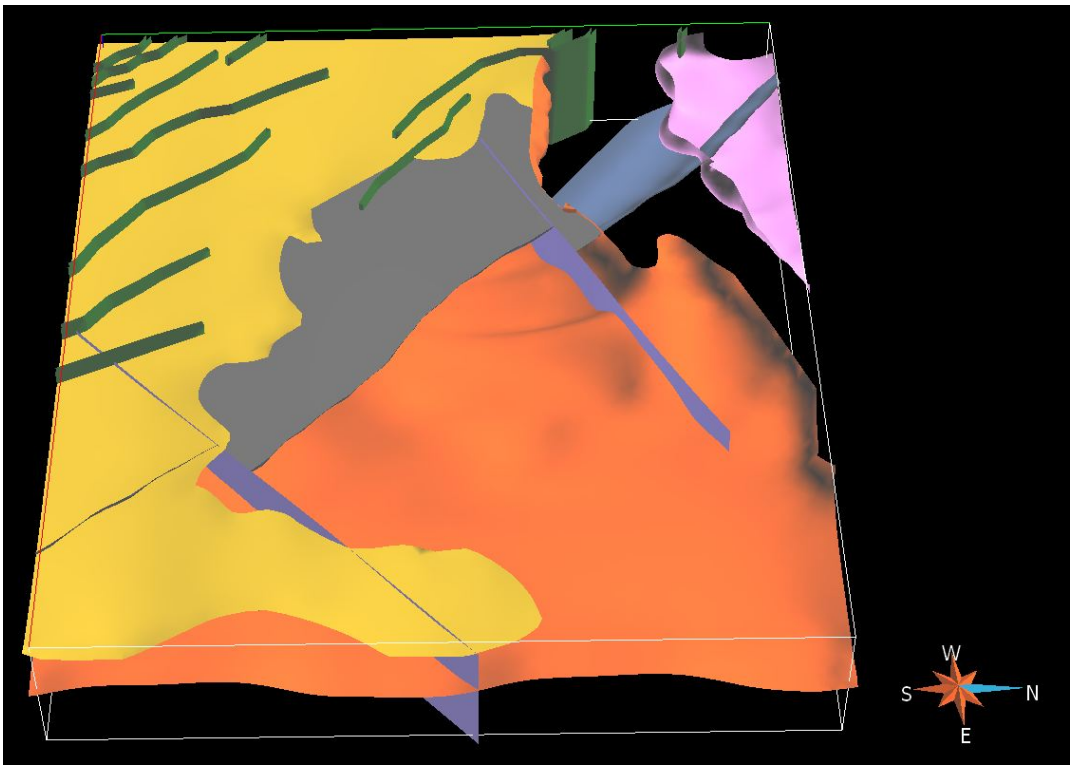
Responsible party function: Owner

Description

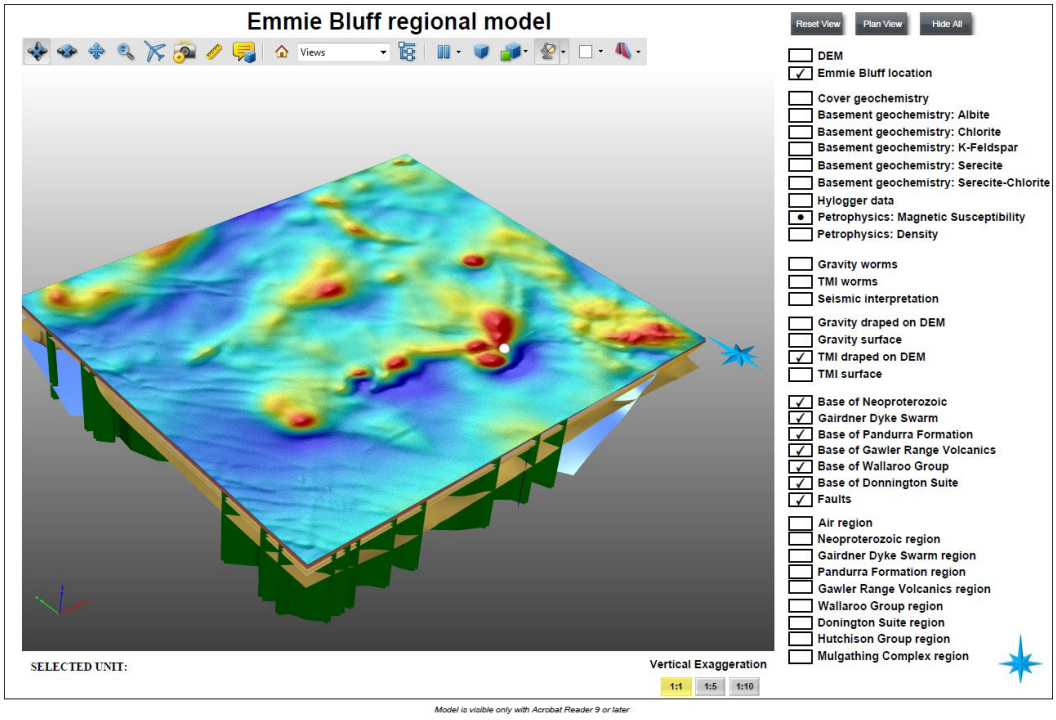
Dataset classification: Principal version

Dimension: x,y,h

Sample Graphic(s)



Perspective view of the Emmie Bluff Gocad model



Emmie Bluff 3D-pdf model

Usage

Purpose: Exploration geology, 3D visualisation

Use: Exploration geology, 3D visualisation

Usage limitations: This model is presented as a 'proof of concept' only and the accuracy (spatial or otherwise)should not be relied upon for exploration or other decision making processes.

Dataset Associations

Origin

Dataset size: Gocad 915MB; 3D-pdf 21MB

Projection: UTM Zone 53

Datum: GDA94

Dataset Management

Authorised date: 2012-09-26

Authorised by: Chief Geoscientist, GSSA Mapping and Exploration Group

Attributes