Mira Geoscience
...modelling the earth

eNewsletter Q1-2015

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In this issue:

Don't miss out!

Here is a quick glance at our Upcoming Events Calendar:

- March 10-11 Mexican Geothermal Association Annual Meeting in Cuernavaca, Mexico
- March 22-26 SAGEEP in Austin, USA
- April 19-24 World Geothermal Congress in Melbourne, Australia
- May 3-7 GAC-MAC2015 in Montreal, Canada
- May 9-13 CIM Convention in Montreal, Canada
- May 14-24 GSN Symposium in Reno, USA
- June 1-4 EAGE Conference & Exhibition in Madrid, Spain

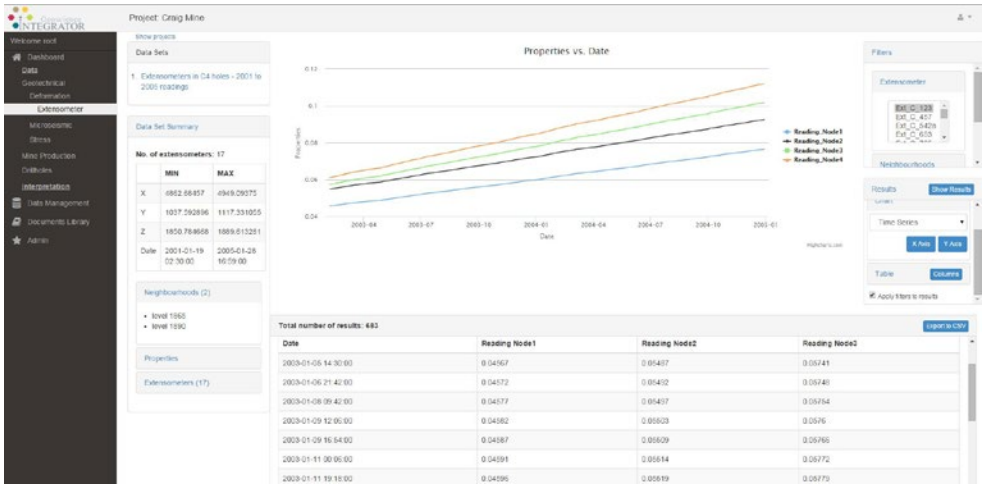
…more details on our Upcoming Events page

We hope that 2015 has started as well for all of you as it has for us here at Mira Geoscience. Our technical and management team has grown, we spent time with many of you at different events and we continue to expand our integrated interpretation and data management software and consulting services. Our software development team has continued its focus on Geoscience INTEGRATOR for data management and GOCAD® Mining Suite for advanced integrated modelling. We also continue to contribute to the development and commercialisation of UBC-GIF and the Fullagar Geophysics VP Suite. Additional research in predictive modelling and data integration is ongoing. Also featured in this eNewsletter is a closer look at our geothermal consulting practice.

Geoscience INTEGRATOR – 4D data management for exploration and mining

Integrated modelling and analysis of exploration and mining data requires sound data management infrastructure and practices. We are utilizing our experience in developing integrated geotechnical data management systems for underground mines (for example Rio Tinto's "CaveCad" system) for managing integrated exploration data. We are extending our proprietary Geoscience INTEGRATOR geotechnical data management system so that drillhole data can be managed seamlessly alongside all types of geological, geophysical, and geochemical exploration project data. The data management system features seamless connection to 3D visualization, modelling, and targeting systems. It ensures data security, QA/QC, and rapid contextual and visual query.

More details available here.



What's new:

Our team has grown!

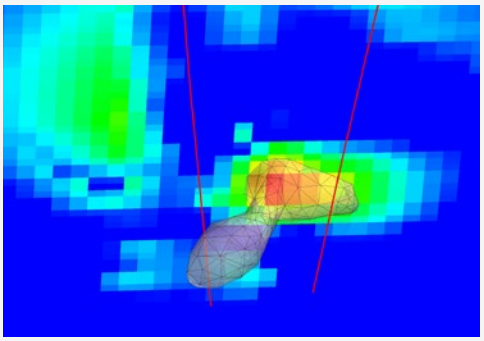
Peter K. Holmes has joined us as the Director of our Vancouver office. Peter has over 25 years of international experience in mineral exploration, resource evaluation and regional project generation and targeting. He has significant experience in managing business units, project management, and mentoring teams. Peter has held senior positions with De Beers, Peregrine Diamonds, and most recently with Avannaa Resources. He has a post-graduate diploma in Business Administration from University of Leicester and a BSc Honors Geology from Lakehead University.

Mark Hammer has joined our team as our Global Sales Director, responsible for development and implementation of sales strategy. His background in geosciences and nearly 20 years of experience in sales and business development within emerging/growth companies, provide Mark with a comprehensive understanding of our industry, market sectors and value proposition. Mark graduated from McMaster University with a BA Honours in Geology and Geography.

Peter Goulet, CPA, CA, has added Chief Operating Officer to his current responsibilities as Mira Geoscience's CFO, a position he has held since 2009. Peter has over 20 years of senior management experience, mainly in the technology sector. Having been involved with a number of businesses, ranging from start-ups to turnarounds, Peter brings extensive financial, operational and strategic management experience to his dual role at Mira Geoscience. Peter graduated with a BBA Honours from Bishops University and obtained his CPA designation in 1989.

VPem3D release

AMIRA Project P1022, "Rapid Approximate Inversion of TEM Data", completed its work in 2014 with a breakthrough in 3D TEM inversion. The research was conducted by Fullagar Geophysics and CODES (University of Tasmania), sponsored by AngloGold Ashanti, Gold Fields, Rio Tinto, and Mira Geoscience. The new inversion algorithm, VPem3D, offers both speed and practicality. It is suitable for airborne, downhole, and ground dB/dt or B-field data. As with other modelling and inversion codes in the Fullagar Geophysics VP Suite, VPem3D can operate directly on 3D geological models. It fills an important gap in interpretability of TEM data, providing a fast, approximate solution when rigorous 3D inversion is too slow and expensive, but neither CDIs nor 1D inversion is adequate. More rigorous 3D TEM software can be employed to refine the interpretation of selected anomalies later, if required. We will be releasing VPem3D in March 2015.



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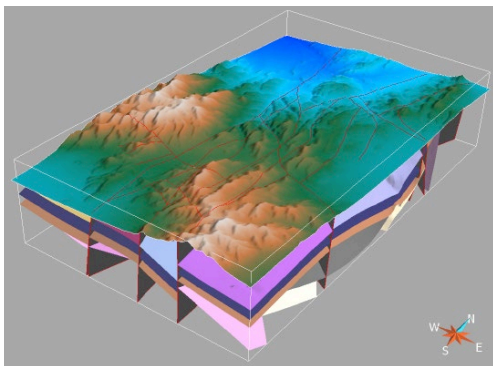
A look at our geothermal consulting practice

We have expanded our consulting practice into the geothermal power sector. It is an interesting challenge because geothermal exploration is difficult – some say more so than exploration for mineral resources. Although there are many similarities, geothermal practitioners commonly pursue targets at great depth (1 – 3 km or more) and must contend with complex geological settings. Mira Geoscience is bringing to the geothermal industry what we have provided to the mineral sector: powerful software that leverages very significant O&G R&D investment to address earth modelling challenges, combined with 3D geophysical modelling and interpretation constrained by geology. Our consulting services are useful for any type of geothermal reservoir because our flexible approach is focused on geoscience exploration compatible with a wide variety of data types and analytical processes. Jeff Witter, our geothermal specialist, will give a presentation at the World Geothermal Congress next April about how he uses GOCAD® Mining Suite as a tool for improved geothermal exploration.

More details in the article published in Think GEOENERGY Magazine: Better Exploration is Needed to Reduce Resource Development Risk.



In the news:

Exploration Trends & Development
March 2015

"Mira Geoscience, headquartered in Montreal, continued to expand its integrated interpretation software and consulting services for exploration targeting. Geophysical software development was focused on Geoscience INTEGRATOR for data management, the GOCAD Mining Suite for advanced integrated modelling, and Geoscience ANALYST for…"

International Mining
January 2015

Many positive developments at Mira Geoscience. *"[Mira Geoscience's] innovations focus on developing and applying quantitative analysis to the integrated geology-geophysics-geochemistry interpretation challenge across a range of scales, commodities, and methods…"*

3D Visualisation World
August 2014

Advanced 3D Earth Modelling Supports Mine Exploration Decision Making. *"Advances in 3D geological modelling environments are supporting multi-disciplinary 3D exploration targeting. The generation of visualizations that represent such modelling and services are critical aspects of this work. Mira Geoscience helps geoscientists to...*

Paradigm Renews its Agreement with Mira Geoscience
July 2014

"(HOUSTON: July 9, 2014) Paradigm® (www.pdgm.com) announced today that it has renewed its value added reseller agreement with Mira Geoscience for the delivery of Paradigm SKUA-GOCAD™ modeling software to the global mining industry…"

HyperCube – A new approach to mineral exploration data integration for targeting

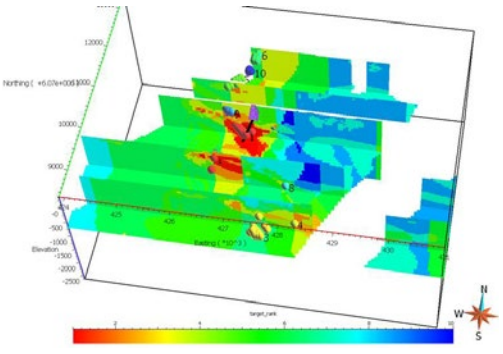
Traditional approaches to data integration for targeting typically focused on statistical classification models, employing numerous assumptions that are generally not met in practice. Recent, successful advances in stochastic, non-Euclidean approaches to the problem of understanding complex data relationships have been made in disciplines such as genomics and epidemiology. Predictive models are constructed from the integration of complex data sets without the limiting assumptions of traditional statistical approaches. These new approaches can easily handle continuous, discrete, noisy, and missing data without the imposition of statistical models or assumptions. In partnership with HyperCube Research, we are applying such an approach to the exploration targeting problem. The method provides a series of robust rules describing the relationship between input exploration data variables and mineral occurrences. The rules discovered are typically of much greater utility than statistical trend observations. These methods have the potential to improve discovery rates when applied as part of a carefully planned and systematic process of modelling, interpretation, and target generation.

AMEBC Mineral Exploration Roundup 2015 Short Course 8:

3D integrated interpretation for deep exploration targeting

During AMEBC's Mineral Exploration Roundup 2015, we offered a short course that described and demonstrated the methodology of Common Earth Modelling and integrated interpretation for the purposes of 3D mineral potential targeting.

Successful exploration targeting at depth and undercover requires recognition of ore system signatures in multi-disciplinary 3D model space. A multi-disciplinary "Common Earth Model" (CEM) must be created as the fundamental support for the various types of data that serve as the exploration criteria. The criteria are modelled as quantitative or classified properties in a 3D block model encompassing the exploration volume, and include attributes such as lithology, geochemistry, physical properties from 3D geophysical inversion, as well as geometrical target indicators such as depth, and proximity to faults or significant geologic contacts. "Target" locations are identified, ranked, and classified by computing and analyzing a score at each cell of the 3D grid.



Interested in finding out more about our trainings? Contact our support team.

Contributions

PDAC 2015
Toronto, Canada – March 3

Open Session: A novel approach to mineral exploration data integration for targeting
– John McGaughey

Technical Program Geophysics: SAM (Sub-Audio Magnetics) for mineral exploration, detection and delineation of bitumen deposits
– Scott Napier

ASEG-PESA 2015
Perth, Australia - February 16

Airborne electromagnetic survey for water supply planning - Cane River, Western Australia
– James Reid

American Exploration & Mining Conference 2014
Sparks, USA – December 2

Integrated Interpretation: Generating Geologic Value out of Geophysical Data
– Jeff Witter

Quebec Mines 2014
Québec City, Canada – November 19

Définition d'un cadre pour l'intégration des données géologiques et géophysiques
– Gervais Perron

GSA Annual Meeting
Vancouver, Canada – October 22

GOCAD® Mining Suite Software as a Tool for 3-D Geoscience Data Integration and Modeling
– Jeff Witter

Earth Modelling 2014
Montreal, Canada – October 19

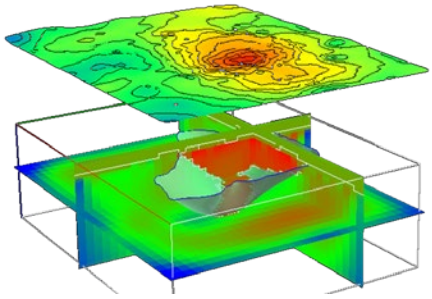
Earth Modelling is recognized as the leading forum on 3D earth modelling for the mining industry. See 2014 abstracts and presentations.

ASEG-PESA 2015 Workshop

Integrated interpretation for exploration – Potential fields modelling using GOCAD® Mining Suite workshop

In parallel to the ASEG-PESA 2015 conference, we hosted an integrated interpretation workshop. It showcased integrated interpretation techniques as applied to gravity and magnetic data sets with a focus on mineral exploration objectives.

The role of geophysics is necessarily evolving as modern exploration addresses the challenge of finding significant new deposits at depth, under cover, or in complex brownfields settings. Integrated interpretation seeks to identify and understand key components of ore systems through the quantitative combination and analysis of geophysical, geological and geochemical data. Geophysical forward modelling and inversion can be used to quantitatively interpret the rock volume in terms of geometry, structure and rock properties associated with these ore system components.



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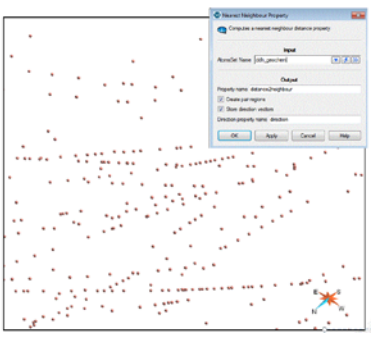
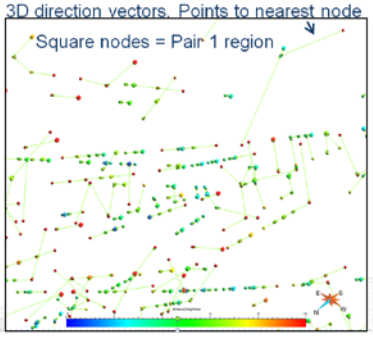
GOCAD® Mining Suite: February's tip of the month

Computing nearest neighbours





This command is for when you need to find data clusters such as when working with micro-seismic events. Computing the nearest neighbour from one node to another on an atomic object can be quickly accomplished with the Nearest Neighbour Property command: **Compute > Distance to Nearest Neighbour.**

Pair regions can be created to allow filtering out of one set of points that are within a certain distance from another set. Another feature the command has is the ability to store the 3D direction vectors between the node pairs which also can be used to filter out node pairs trending in a certain direction.

To receive our tips or to view previous ones, visit our site.