



# THE MINERAL CORPORATION

*ADVISORS TO THE MINERAL BUSINESS*

## **Updated Mineral Resource Estimate of the Adumbi Prospect, Orientale Province, Democratic Republic of Congo**

**Prepared under the Guidelines of National Instrument 43-101 and accompanying  
documents 43-101.CP (June 2011)  
for Kilo Goldmines Limited**

**by  
The Mineral Corporation, Sandton, South Africa**

**Telephone: +27 11 463 4867  
Facsimile: + 27 11 706 8616**

### **TITLE PAGE**

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**Report Author  
David Young BSc (Hons), FGSSA, MSAIMM, FAusIMM,  
Pr Sci Nat, Qualified Person**

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## 1 SUMMARY

This report is an update to The Mineral Corporation's report C-KIL-ADU-1071-690 which was entitled: "Mineral Resource Estimate of the Adumbi Prospect, Orientale Province, Democratic Republic of Congo", dated April 2011 ("Report 690"). Report 690 described the exploration activity and mineral potential of a portfolio of eight Permis d'Exploitation ("Exploitation Licences") held by KGL Somituri sprl, located in the Orientale Province of the Democratic Republic of Congo ("DRC") and the report declared Mineral Resource estimates for one prospect within this portfolio.

The Adumbi Prospect is one of several gold prospects within Exploitation Licence PE9691 which in turn is one of the eight gold exploitation licences held by KGL Somituri sprl. These licences are collectively called the Somituri Project. The remaining seven Exploitation Licences are PE9692, PE9693, PE9694, PE9695, PE137, PE138 and PE140 and are referred to as the "Remaining Seven Licences".

In this report C-KIL-ADU-1071-775 ("Report 775"), the only material changes reported are changes to mineral tenure (Section 4.2 and Section 4.6), an update on the mineral processing and metallurgical test work (Section 13) and an update to the Mineral Resource estimates for the Adumbi Prospect (Section 14). Other minor changes include an update to the rent fees and expenditures incurred on the Somituri Project since Report 690 (Section 9.8) was issued. All further references to the Remaining Seven Licences have been removed, and the reader is referred to Report 690 as the reference document for exploration activities on these seven licenses.

Technical information in this Report 775 is based upon data that has been provided by Kilo Goldmines Ltd ("Kilo") to The Mineral Corporation. This includes a site visit to the Adumbi Prospect by Dr Johan Krynauw (2010), an employee of The Mineral Corporation, to collect independent data and a site visit by Mr David Young (2012), a director of The Mineral Corporation, ahead of this Mineral Resource update.

This Report 775 has been prepared by the professional staff at The Mineral Corporation's offices in Sandton (South Africa) under the leadership of David Young. The other professionals involved are Stewart Nupen and Johan Krynauw who are specialists in the fields of exploration, geology and Mineral Resource estimation and classification. Together, they meet the requirements of SACNASP in order to allow them to act as Qualified Persons (QP) under the requirements of the SAMREC Code as recognised by National Instrument 43-101 (NI43-101).

The Exploitation Licences of the Somituri Project are located in the Mambasa and Wamba Territories, District of Ituri and Haut-Uele in Oriental Province (Province Orientale) of the north-eastern DRC. The Adumbi Prospect lies between X 594500 and 596000 and Y 191500 and 193100 (WGS 84 Zone 35N UTM co-ordinates) and totals 210ha in extent.

Mineral tenure for the Adumbi Prospect is held through Exploitation Licence PE9691. The licence was granted to Société Minière de l'Ituri sprl ("Somituri") for the period 22 February 2009 to 22 February 2039 for gold and diamonds. The portfolio of eight Exploitation Licences covers a total of 605.73 square kilometres (the "Somituri Property") held by KGL - Somituri sprl ("KGL Somituri"), a DRC registered company to which Somituri irrevocably assigned its interest in the Somituri Property pursuant to an assignment agreement dated 29 April 2010. These licenses have been transferred to

KGL Somituri, as per the April 2010 agreement, and evidence of this transfer has been provided to The Mineral Corporation.

Kilo Goldmines Inc, a wholly-owned subsidiary of Kilo Goldmines Ltd owns 71.25% of KGL Somituri. The balance is held by the DRC State (5%) and by Somituri (23.75%). No legal research as to the validity of the mineral right tenure has been undertaken by The Mineral Corporation. The ownership structure and agreements that govern the relationships between Somituri sprl, Kilo Goldmines Ltd, Kilo Goldmines Inc and the DRC State are summarised in Section 4 of this document.

The Adumbi Prospect is well situated for the development of a mining venture, as it is located at a low altitude in undulating topography amenable to construction of access roads. On-site infrastructure to support a hard-rock mining operation will need to be constructed. The immediate area will not be capable of supplying sufficient materials other than timber to support the construction of mine-site infrastructure. There is a significant local labour pool available for training and recruitment for any envisioned mining operation.

Significant gold was recovered between 1920 and 1959 from historical workings in Exploitation Licence PE9691, other than at the Adumbi Prospect, such as at the Bagbaie and Kitenge and Maipinji gold mines.

Archaean gneisses and granite-greenstone terrains cover much of northeast DRC and extend into the Central African Republic ("CAR"), western Uganda and southern Sudan (Schlüter, 2006). Old basement gneisses, dated at about 3.5Ga, are known as the Bomu (amphibolite-pyroxene gneisses and granites) and West Nile Complexes. Scattered greenstone belts known as the Ganguan and Kibalian Greenstone Belts have been dated at older than 2.9Ga and 2.81Ga, respectively.

The Upper Congo Granite-Greenstone association of north DRC belongs to the granite-greenstone belts of north-eastern DRC and CAR. In north-eastern DRC, the greenstone belts are referred to as the Kibalian Supergroup of Archaean age. Greenstones form a number of zones of approximately 10 to 100km<sup>2</sup> composed of metavolcanics and some metasediments. Granitoids form a significant part of the Precambrian rocks in north-eastern DRC.

According to Randgold Resources Limited (Hamilton *et al*, 2006), gold mineralisation within the Kilo-Moto Greenstone Belt in the eastern part of the DRC is associated with epigenetic mesothermal style mineralisation. This style of mineralisation is typical of gold mineralisation in Archaean and Proterozoic greenstone terranes and is generally associated with regionally metamorphosed rocks that have experienced a long history of thermal and deformational events. These deposits are invariably structurally controlled.

Mineralisation in this environment is commonly the fracture and vein type in brittle fracture to ductile dislocation zones. At the Adumbi Prospect, the gold mineralisation is generally associated with quartz and quartz-carbonate-pyrite  $\pm$  pyrrhotite  $\pm$  arsenopyrite veins in a banded iron formation (BIF) horizon composed of magnetite and chert, with no evidence to date for an association with the metasedimentary, metavolcanic and metavolcaniclastic rocks which dominate the lithologies of the area.



Kilo carried out an initial exploration program on PE9691 from January to December 2010 and continued exploration during 2011 from an exploration camp constructed about 0.5km to the west of Adumbi Village. This report summarises exploration up to and including December 2011. The database for Adumbi Prospect now comprises approximately 10 750m of geological data, including data from 4 underground adits, 49 diamond boreholes and 18 surface trenches.

Kilo incurred an unaudited expenditure of CDN\$18 354 532 up to and including 2011 in the exploration of the licence areas within the Somituri Project, the majority of which was on the Adumbi Prospect.

Based on the sample preparation techniques observed at the ALS Chemex preparation facility in Mwanza (Tanzania), the security protocols described by Kilo geologists and the analytical procedures adopted by the ALS Chemex Laboratory (Johannesburg), The Mineral Corporation is satisfied that the protocols and procedures have been followed to acceptable levels and the analytical results may be employed for Mineral Resource estimation up to the Indicated classification only. It is understood that Kilo will be installing their own sample preparation facility on site and thus mitigate to some extent the chain-of custody protocols and possible low contamination of samples at the ALS Chemex Mwanza facility.

The Mineral Corporation has undertaken an updated Mineral Resource estimate for Adumbi Prospect on the basis of the additional 22 boreholes and some additional analytical results from the trenches.

The Mineral Resource update is founded on a revised structural geological interpretation, which has guided the identification of three mineralised zones, which are oriented in parallel with the BIF and are also steeply dipping.

Borehole assay data has been composited to represent 2.5m thick composites normal to the orientation of the mineralised zones, known as Zones 1, 2 and 3. The gold grade distribution within these mineralised zones is log-normal, but not sufficiently skewed as to prevent the generation of variograms in normal space. Zones 1 and 3 were analysed together, and a variogram (with a range of 25m parallel to the mineralised zone and 7m normal to the mineralised zone) has been modelled. Ordinary Kriging has been employed to estimate grade into 20m by 20m by 5m blocks.

Estimates for Zone 2 utilised the variograms and parameters employed for Zones 1 and 3. Ordinary Kriging was also used to estimate grade in mineralisation within the interburden between and surrounding the mineralised zones.

The resulting block model has a deepest point which is 350m below surface. A geological loss of 1.5% has been applied to account for post-mineralisation intrusive material, and a volume of rock which represents the void created by historical mine workings near surface has been removed from the estimates.

At a cut-off grade of 0.5g/t, the resulting Mineral Resource estimate is 35.6 million tonne at a grade of 1.63g/t. The contained gold is 1.87 million troy ounces.



The following is recommended to Kilo for execution in the next phase of the project development:

- The existing Inferred Mineral Resource model should be employed in a scoping level study to understand the likely Mineral Reserves to be hosted in the Adumbi Prospect.
- Further work to identify additional gold Mineral Resources within PE9691 and / or the Remaining Seven Licences.
- The Mineral Resource classification could be improved via in-fill drilling that will also assist in the understanding of the gold grade continuity. Borehole orientation for evaluation should be balanced between the requirements of intersection depth and obtaining an orthogonal intersection. However, boreholes steeper than 60° should be avoided.
- The structural geology of the region, and in particular for the Adumbi Prospect, needs to be understood to assist in gold grade continuity modelling. This will have a positive impact on the classification of the gold Mineral Resources.
- Erect the sample sample preparation facility on site and institute Kilo's revised dispatch of samples to ALS Chemex Johannesburg to mitigate the chain of custody issues.
- Samples specifically taken for density measurements should be collected over a suite of different rock and material types.
- Focus on the historically depleted Mineral Resources and potential for geological losses needs to be made.
- The budget that Kilo proposes for the next phases of works (1 and 2) appears to be adequate to fulfil the above works. If this is successful, further evaluation drilling may be required.

## 2 INTRODUCTION

This Report 775 is an update to Report 690 which is entitled: "Mineral Resource Estimate of the Adumbi Prospect, Orientale Province, Democratic Republic of Congo", dated April 2011. Report 690 described the exploration activities and mineral potential of a portfolio of eight Exploitation Licences held by KGL Somituri sprl, which are collectively called the Somituri Project, located in the Orientale Province of the Democratic Republic of Congo ("DRC") and declared Mineral Resource estimates for the Adumbi Prospect within this portfolio.

The Adumbi Prospect is one of several gold prospects within Exploitation Licence PE9691; the Remaining Seven Licences are PE9692, PE9693, PE9694, PE9695, PE137, PE138 and PE140.

Report 775 contains changes to mineral tenure (Section 4.2 and Section 4.6.4), an update on the mineral processing and metallurgical test-work (Section 13), an update to the Mineral Resource estimates for the Adumbi Prospect (Section 14) and updates to the rent fees and expenditures incurred on the Somituri Project since Report 690 (Section 9.8). The reader is referred to Report 690 for any information relating to exploration efforts on the Remaining Seven Licences.

This report has been prepared with the objective of Kilo making the report public with other documentation as per the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) as set out in Form 43-101F1 (June 2011).

Technical information in this report is based upon data that has been provided to The Mineral Corporation by Kilo, geological data measured by David Young from site in January 2012 and data collected by Dr Johan Krynauw, an employee of The Mineral Corporation from site in 2011.

### **3 RELIANCE ON OTHER EXPERTS**

This Report 775 has been compiled by The Mineral Corporation, a South African company with international affiliations, which comprises 26 professional technical staff and numerous associates offering expertise in a wide range of geoscientific and mining disciplines. The Mineral Corporation has a demonstrated track record in undertaking independent assessments of exploration and in preparing qualified and competent person's reports and independent feasibility studies on behalf of exploration and mining companies and financial institutions world-wide.

This report has been prepared by the professional staff at The Mineral Corporation's offices in Sandton (South Africa) under the leadership of David Young who conducted a site visit to the Adumbi Prospect field camp in January 2012. The members of staff involved in this report are specialists in the fields of exploration, geology and Mineral Resource estimation and classification, and meet with the requirements of the South African Council of Natural Professional Scientists (SACNASP) in order to allow them to act as Qualified Persons (QP) under the requirements of the SAMREC Code as recognised by National Instrument 43-101 (NI43-101). A visit to the ALS Chemex sample preparation facility in Mwanza, Tanzania, which is employed by Kilo, was undertaken during the 2010 visit by Dr Krynauw. David Young visited the ALS Chemex (Pty) Ltd assay laboratory in Johannesburg, South Africa, which is currently employed to conduct all gold analyses.

Neither The Mineral Corporation nor any of its consultants employed in the preparation of this report has any beneficial interest in the assets of Kilo. The Mineral Corporation has been paid professional fees and will continue to receive fees for this work in accordance with normal professional consulting practices.

### **4 PROPERTY DESCRIPTION AND LOCATION**

#### **4.1 Location and area**

The Somituri Project Exploitation Licences are located in the north-eastern DRC as illustrated in Figure 2. The Project is located in the Mambasa and Wamba Territories, District of Ituri and Haut-Uele in Oriental Province (Province Orientale) of the DRC. The Adumbi Prospect lies between X 594500 and 596000 and Y 191500 and 193100 (WGS 84 Zone 35N UTM co-ordinates) and totals 210ha in extent.

Nia-Nia Village is approximately half-way by road between Beni and Kisangani and situated about 30km south of the Adumbi Prospect. Kilo maintains an administrative office in Beni; Kisangani is the capital of Oriental Province. The Exploitation Licences reference the geodetic Datum as WGS 84 and the UTM co-ordinates are UTM WGS 84, Zone 35N.

The Mineral Corporation has been provided with copy of DRC cadastre certificate for the Exploitation Licence PE9691. The Mineral Corporation has

validated the geographic integrity of the license provided to the extent that is possible based on the copy of the certificate.

#### 4.2 Mineral tenure and identifying numbers

Kilo has supplied information to The Mineral Corporation that mineral tenure for the Adumbi Prospect is held through Exploitation Licence PE9691. The licence was granted to Société Minière de l'Ituri sprl ("Somituri") for the period 22 February 2009 to 22 February 2039 for gold and diamonds and covers a total of 12 234ha.

No legal research as to the validity of the mineral right tenure has been undertaken by The Mineral Corporation. The co-ordinates of the Exploitation Licence are listed in Table 1 and the summary information is detailed in Table 2.

In accordance with the Mining Regulations of DRC, the surface area of an Exploitation Licence is measured in a unit defined as a carré (in English, a square) which is defined as an area that measures 30 seconds of latitude and longitude on each side. The sides must be oriented north-south and east-west. A square has an area of 84.955ha or 0.84955km<sup>2</sup>. The maximum size allowable for an Exploitation Licence is 471 carrés. Given that an Exploration Licence can be converted into an Exploitation Licence, it follows that the maximum possible size of an Exploitation Licence is also 471 carrés. The Adumbi Prospect Exploitation Licence (PE9691) covers an area of 12 234ha.

**Table 1: Coordinates of the Exploitation Licence PE9691**

Licence	Corner	East Longitude	North Latitude
E9691	1	27° 50' 00"	01° 41' 00"
	2	27° 50' 00"	01° 47' 00"
	3	27° 53' 00"	01° 47' 00"
	4	27° 53' 00"	01° 44' 30"
	5	27° 56' 00"	01° 44' 30"
	6	27° 56' 00"	01° 44' 00"
	7	27° 59' 00"	01° 44' 00"
	8	27° 59' 00"	01° 41' 00"
	9	27° 56' 00"	01° 41' 00"
	10	27° 56' 00"	01° 41' 30"
	11	27° 53' 00"	01° 41' 30"
	12	27° 53' 00"	01° 41' 00"

**Table 2: Summary information on the Somituri Project Exploitation Licences**

Exploitation Licence	Date Granted	Expiry Date	Hectare	Territory	District	Province	Minerals <sup>1</sup>
PE9691	23/02/2009	22/02/2039	12 234	Mambasa	Ituri	Oriental	Au, Di

<sup>1</sup>Au: Gold; Di: Diamonds

### 4.3 Interest, obligations, expiration dates

#### 4.3.1 Interest

According to information supplied to The Mineral Corporation, Kilo effectively holds 71.25% of the Somituri Project, subject to the provisions of the Mining Code 2002 and the Mining Regulations as summarised herein under this Section entitled Obligations.

Kilo's interest in the Somituri Project is through KGL Somituri sprl, a DRC company to which Somituri irrevocably assigned its interest in the Somituri Property pursuant to an assignment agreement dated 29 April 2010.

The Mineral Corporation understands that this licence has been transferred from Somituri to KGL Somituri, and The Mineral Corporation has scrutinised the re-registered license certificate.

Kilo Goldmines Inc, a wholly-owned subsidiary of the company owns 71.25% of KGL Somituri. The balance of 28.75% is held between the DRC State (5%) and by Somituri (23.75%). The ownership structure is summarised in Figure 1.

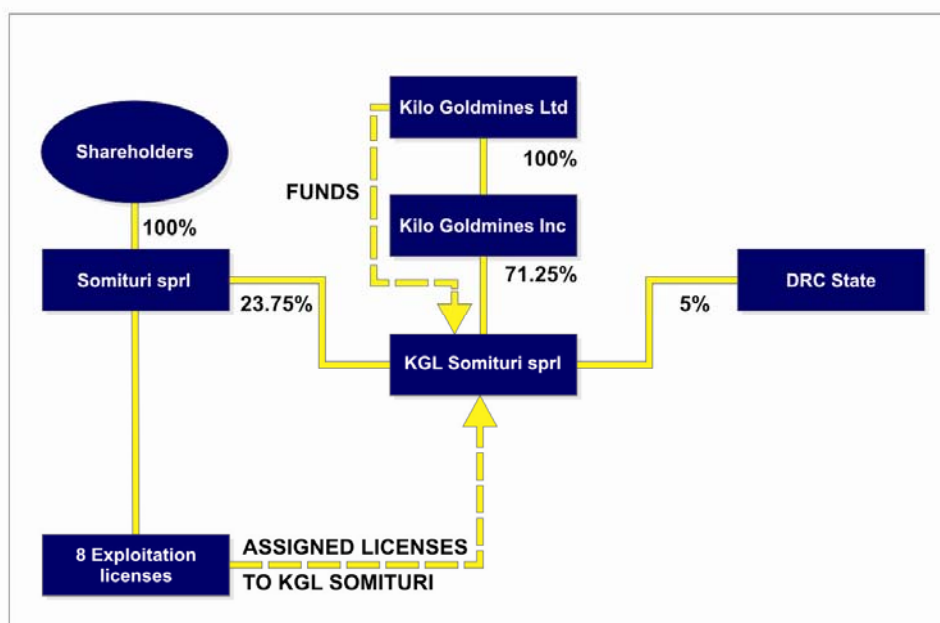


Figure 1: Ownership structure for the Somituri Project.

#### 4.3.2 Obligations:

All mineral substances, including artificial deposits, underground water and geothermal deposits on surface or in the sub-soil or in water systems of the National Territory vest in the State of the Democratic Republic of Congo. The President of the Republic is responsible for the enactment of the Mining Code by Decree on his own initiative or on the proposal of the Minister in charge of mines and quarries based on the opinion of the Geological Department or the Mining Registry. The mineral tenure system is provided for in the Mining Code 2002 and in the Mining Regulations

2003. An environmental consulting firm of recognised standing is required for guidance and assistance in regards to environmental matters.

Pursuant to the Mining Code 2002, the following types of licences or permits may be granted by the Minister in charge of mines and quarries, for the exploration and exploitation of minerals:

- Prospecting Certificate;
- Exploration Licences; and
- Exploitation Licences to cover:
  - small scale mining (artisanal)
  - large scale mining
  - tailings
  - quarry.

Prior to undertaking exploration, holders of an Exploitation Licence must obtain 'final approval' from the Ministry of Mines. Pursuant to the Mining Code 2002, holders of an Exploitation Licence must complete and submit an Etude D'Impact Environnemental et Plan de Gestion Environnemental du Project, impact assessment study and environmental management plan ("EIE-PGEP") for approval in order to convert the Exploration Licence into an Exploitation Licence.

An EIE-PGEP report dated 11 December 2007 was prepared for former Exploration Licences (PR127, PR128, PR129 and PR130), which included the Adumbi Prospect and an acknowledgment receipt, number CE/5400/09, has been issued by the Cadastre Minière (CAMI).

All holders of a Mineral Right must pay annual rent and taxes to the Government of the DRC prior to 31 March of each year and maintain journals of administrative and technical activities. Rent and taxes on the Somituri sprl Exploitation Licences were US\$311 694 for 2009 and US\$364 606 for 2010 and 2011. Rent and taxes to the amount of US\$364 606 were due by 31 March 2012 and a report of work in accordance with Ministerial Decree n°3156/CAB MIN/MINES/01/2007 of 6 August 2007, establishing a model for annual reporting on mining or on quarry activities (RDC, 2007) was due to be filed on or before 31 March 2012. Kilo has confirmed that these taxes have been paid and the report submitted for the year ended 31 December 2011, and copies of the report receipt and proof of payment have been provided to The Mineral Corporation.

#### **4.4 Methodology of locating property boundaries**

All Mining Rights are maintained on 1:200 000 scale maps in CAMI in Kinshasa. The holder of an Exploitation Licence must survey the perimeter at the holder's cost. A survey marker post with the holder's name, title number and survey marker identification must be placed at each corner of the perimeter. It is understood that Kilo has contracted a Kinshasa-based survey company (approved by CAMI) to survey the perimeter and establish the corners of the Exploitation Licence. The survey has been hampered by logistical constraints,

partly due to the dense jungle canopy and, at this stage, has not yet been completed.

#### **4.5 Location of mineralised zones**

Mineralised zones on the Exploitation Licence PE9691 hosting the Adumbi Prospect include the former gold producers (Adumbi, Bagbaie, Manzako, Kitenge and Maipinji) as well as a number of other auriferous quartz veins that were exploited during the Belgian administrative era.

#### **4.6 Agreements and encumbrances**

The information on the agreements as discussed below has been supplied by Kilo.

##### **4.6.1 Agreement 1**

Title of Agreement: "Definitive Agreement".

Date: 15 November 2006

Parties: Kilo Goldmines Inc and Moto Goldmines Ltd.

Kilo entered into an agreement with Moto Goldmines Limited ("Moto") on 15 November 2006, whereby Kilo acquired all of the rights and interests of Moto under three option agreements entered into with DRC companies. One of these option agreements pertained to the Somituri Property. Pursuant to the transaction, Kilo assumed Moto's responsibilities under the option agreement relating to the property and specified the issuance of common shares upon the completion of a going public transaction (the "Moto Anti-Dilution Right") as consideration to Moto for the acquisition rights and interests of Moto. Kilo also granted Moto the right, at its option, to acquire a 10% equity interest in the property for consideration of US\$5.0 million exercisable when a bankable feasibility study is concluded if, at that time, the Measured Resources for the property exceeds two million ounces of gold. The 15 November 2006 agreement between Kilo and Moto was amended on 20 June 2008. Said amendment pertains to corporate matters without impact on matters pertaining directly to the Somituri Property.

##### **4.6.2 Agreement 2**

Title of Agreement: "Accord de Societe en vue de la creation de KGL-SOMITURI sprl."

Date: 10 July 2007

Parties: Kilo Goldmines Ltd and Deltago International Ltd, R Wynne, J Ntumba, J-M Lokaanga, J-CI Mukengheshay, Societe Somituri sprl.

The KGL-Somituri sprl partnership was formalised on 12 December 2007, and, pursuant to the terms of the partnership, Kilo Goldmines Inc owned 75% in KGL Somituri. The asset was the original twenty Research Permits. In accordance with the partnership, Kilo Goldmines Inc committed to paying €50 000 on the property assignment Registration Date and €75 000, €150 000 and €300 000 on the first, second and third anniversaries of the Registration Date respectively. Kilo Goldmines Inc also committed to investing, at a minimum, €1 million during the first year



after the Registration Date, and €500 000 during each of the second and third years after the Registration Date in research activities.

#### **4.6.3 Agreement 3**

Title of Agreement: "Accord de Societe en vue de la creation de KGL-Somituri sprl."

Date: April 2008

Parties: Kilo and Deltago International Ltd, R Wynne, J Ntumba, J-M Lokaanga, J-CI Mukengheshay, Societe Somituri sprl.

This agreement was a revision of Agreement 2 above to cover Exploitation Licences which were not included in Agreement 2. Pursuant to the terms, Kilo Goldmines Inc agreed to finance all activities of KGL-Somituri between the execution date of the new Partnership Agreement and the filing of a bankable feasibility study by way of loans which bear interest at the rate of 5%. The loans are repayable by KGL-Somituri from revenues it generates to the extent of 75% of available funds, with the remaining 25% to be distributed to the equity holders. The minority partners may also request that one or more of the permits be transferred into new entities owned by the company in exchange for a 2% net smelter royalty. As of 30 June 2010, interest income related to these loans had not been recorded as the properties' ability to generate revenue in the future is still being evaluated by Kilo Goldmines Inc.

#### **4.6.4 Agreement 4**

Title of Agreement: "Accord de Societe relative a KGL-Somituri sprl"

Date: 29 April 2010

Parties: Kilo and Deltago International Ltd, R Wynne, J Ntumba, J-M Lokaanga, J-CI Mukengheshay, Societe Somituri SPRL.

Kilo Goldmines Inc signed a new Partnership Agreement dated 29 April 2010 (entitled "the 2010 Partnership Agreement"), as well as an Assignment Agreement providing for the transfer of the eight Exploitation Permits to KGL-Somituri. As a result of the transfer of the Exploitation Permits and under the mining code rules, the State acquired a 5% equity interest in KGL-Somituri. This interest was proportionately taken from both Kilo Goldmines Inc and the partners' interest. Following the assignment of 5% to the State, the retained interest held by Kilo Goldmines Inc became 71.25%. Under the 2010 Partnership Agreement signed on 29 April 2010 (the "Effective Date"), Kilo Goldmines Inc committed to paying €75 000, €200 000 (or an equivalent value in Kilo Goldmines Inc common shares) and €250 000 (or an equivalent value in Kilo Goldmines Inc common shares) on the Effective Date, three days following the Effective Date and three days following the property assignment Registration Date, respectively. Kilo Goldmines Inc has also committed to investing €2 million during the three years following the Effective Date with a minimum of €1 million during the first year. Subsequent to 30 June 2010, Kilo Goldmines Inc issued 520 915 common shares at a deemed price of CDN\$0.482 per share to satisfy the Kilo Goldmines Inc obligation to pay €200 000 three days following the Effective Date as described above.

Under the 2010 Partnership Agreement, Kilo Goldmines Inc has also agreed to finance all activities of KGL-Somituri, until the filing of a bankable feasibility study, by way of loans which bear interest at the rate of 5%. Within thirty days of the receipt of a bankable feasibility study, the minority partners may collectively elect to exchange their equity participation for either a 2% net smelter royalty or a 1% net smelter royalty plus an amount equal to €2 per ounce of Proven Mineral reserves. The 2010 Partnership Agreement ("Agreement 4") cancels and replaces the ones signed in 2007 and 2008.

The Mineral Corporation understands that this agreement is now in effect, as a result of the fact that the licenses have been re-registered in the name of KGL Somituri.

#### **4.7 Environmental liabilities**

Kilo has stated that there are no pre-existing environmental liabilities known to it on the Adumbi Prospect.

#### **4.8 Work Permits**

In accordance with the Mining Code of 2002 and the Mining Regulations of the DRC, certain procedures are set forth that must be carried out before work can begin on a *Permis d'Exploitation*. The Governor of Orientale Province issued Somituri the required *Récépissé* (numbered 011) on 17 September 2009, which allows work to be carried out on the Adumbi Prospect, subject to completion of other formalities.

Copies of the abovementioned *Récépissé* and of the EIE-PGEP were delivered to, and receipts of their acceptances, were received from various officials. In addition, the Chief of Mines in the District was required to provide a 'local *Récépissé*'. Once the local *Récépissé* had been received, the documents were delivered to the land administrators and village chiefs in the respective Territory and District.

Kilo has informed The Mineral Corporation that it has obtained a document from the Okapi Reserve at Epulu, whereby it acknowledges that the Adumbi Prospect is located outside of the official boundaries of the Reserve as presented in the official gazette. The Mineral Corporation has independently sourced the boundary position of this reserve from UNESCO quoted diagrams (Congo, DPR) and its understood location is shown on Figure 2. The Mineral Corporation cannot vouch for the accuracy of this information.

## 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 Topography, elevation and vegetation

The Somituri Project covers an undulating terrain that varies from about 60m above sea level (mamsl) to about 800mamsl. The property is drained by numerous creeks and streams. The hills tend to have relatively steep slopes and the valley floors within the areas of the linear hills are relatively narrow. Away from the linear hills, the property is gently undulating and the entirety of the Prospect is heavily covered by the Ituri Tropical Rainforest.

### 5.2 Property access

The Adumbi Prospect is accessible by an all-weather road northerly from Nia-Nia to Village 47 (47km north of Nia-Nia). Access within the property is via several gravel roads and trails. Away from areas of habitation and artisanal activity, access is on foot through the dense forest growth.

Nia-Nia, illustrated in Figure 2, is accessible from the Ugandan border either through Mahagi in Orientale Province or through Kasindi in North Kivu Province. From Mahagi, travel is via the all-weather road westerly to Bunia, Komanda, Mambasa, followed by Nia-Nia a distance of about 440km from the Ugandan border. From Kasindi, travel is via the all-weather road westerly for 77km to Beni, then northerly to Komanda and westerly to Mambasa and on to Nia-Nia. The road north from Beni for 66km to the Oriental Province border was upgraded and paved in 2010. Nia-Nia is located about 360km east of Kisangani, the capital of Oriental Province. Bunia and Beni are accessible several days per week via regularly scheduled commercial flights from Entebbe, Uganda. Kilo maintains an administrative office in Beni. Nia-Nia is also accessible by charter aircraft from Beni, Bunia or Kisangani. Kilo owns and maintains a 1200m long grass-covered laterite base air-strip in Nia-Nia (Figure 2), which can accommodate propeller driven aircraft including medium sized cargo planes.

Entebbe (Uganda) is directly linked to South Africa, Europe, the United Kingdom and Asia via regularly scheduled commercial carriers. Entebbe is also linked to other African countries as well as Kinshasa, Lubumbashi and Kisangani via Nairobi (Kenya). In addition, Entebbe is linked to the DRC border points of Mahagi and Kasindi by paved highway from the deep sea port of Mombasa (Kenya).

Although DRC-based commercial aircraft operators provide regularly scheduled service between communities in the north-eastern DRC with Kinshasa and Lubumbashi, it is recommended to avoid travel on these carriers due to safety issues.

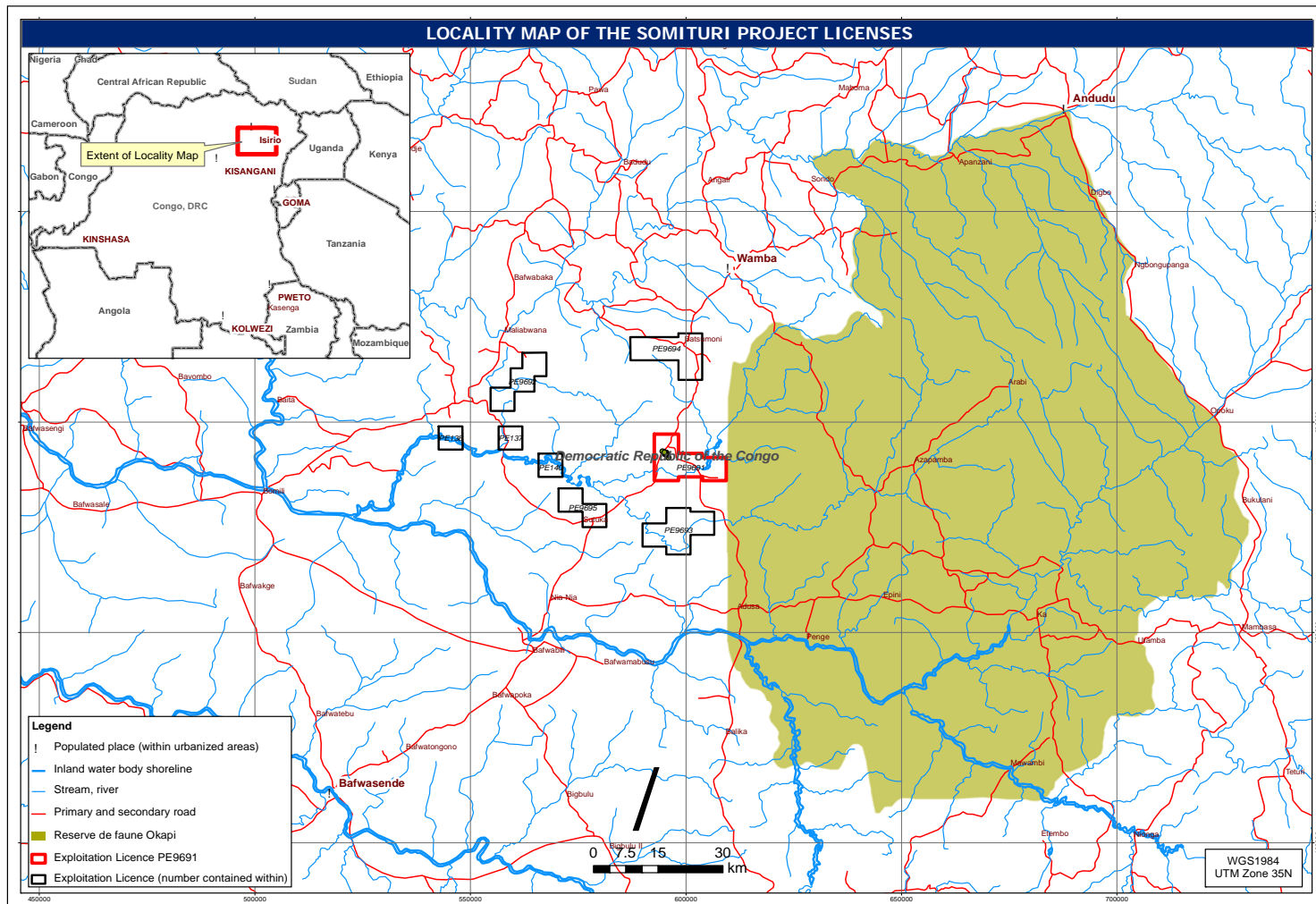
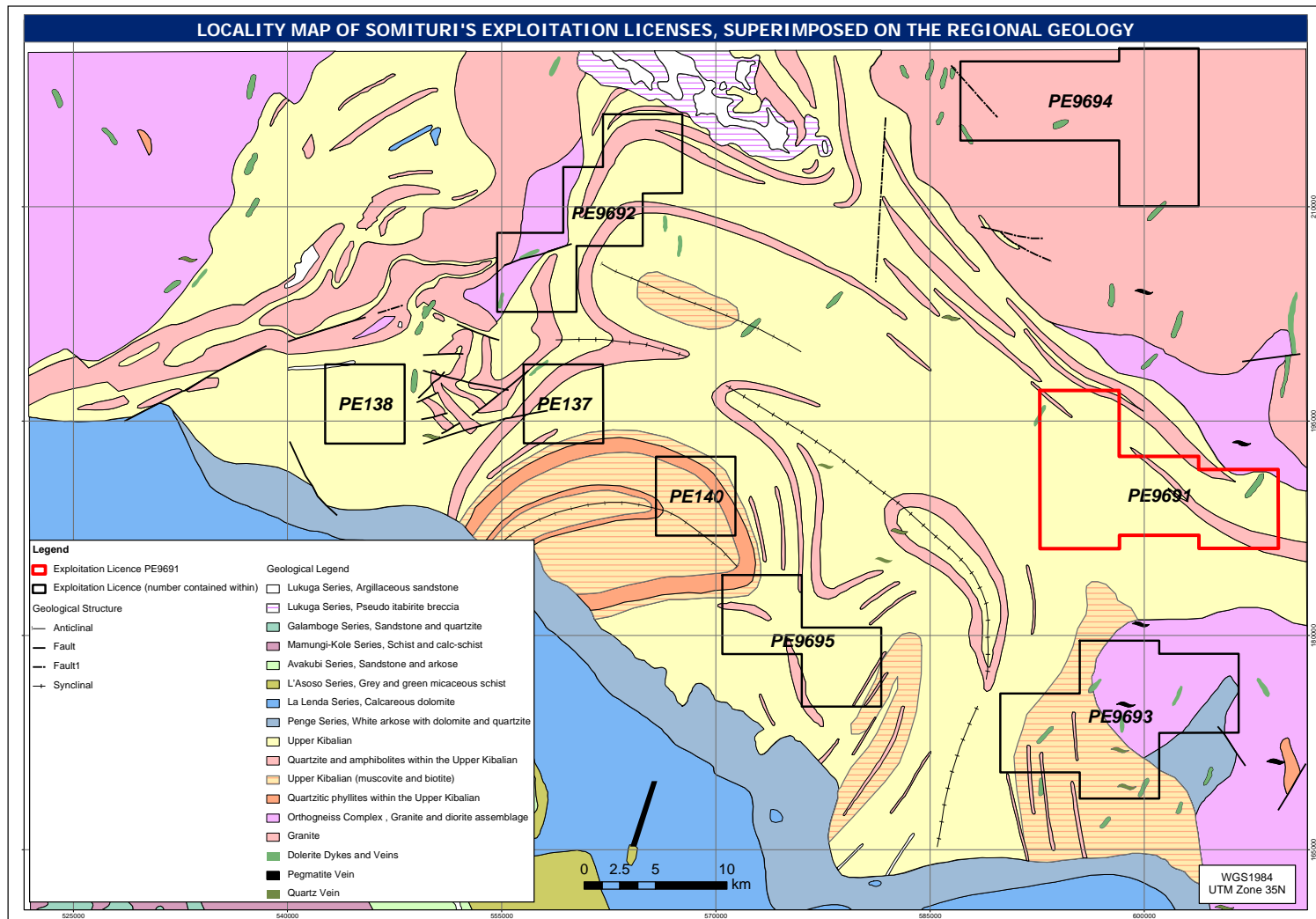


Figure 2: Locality map of the Somituri Project Licences.



**Figure 3: Locality map of the Somituri Exploitation Licenses, superimposed on the regional geology (after Aime *et al*, 1980).**

### 5.3 Proximity to population centre, nature of transport

The Adumbi Prospect is located within a remote area of Oriental Province. Within the immediate environs, there are a number of small villages connected to one another with unmaintained roads and trails. These villages are accessed by motorcycle, bicycle and on foot. In addition, the larger rivers in the area provide access, at least part of the way, by dug-out canoe. The majority of these villages have less than 300 residents; several larger communities on the Nia-Nia road to Wamba and Isiro (Figure 2) have populations exceeding several thousand residents.

### 5.4 Climate, operating season

The climate is typically tropical and characterised by wet and dry seasons. The dry season covers the one to three month period of late December to February and the wet season covers the period of late February to late December. The average annual temperature is circa 30° C. The annual low is circa 19°C and the high is circa 38°C. The annual rainfall is circa 1 780mm (Wynne, 2007). It is understood that Kilo carried out exploration on the Adumbi Prospect throughout the entire 12 months of 2010 and progress was not impeded by weather.

### 5.5 Mining operation infrastructure

The Adumbi Prospect is well situated for development of a mining venture, as it is at a low altitude in undulating topography amenable to construction of access roads. On-site infrastructure to support a hard-rock mining operation will have to be constructed. The immediate area will not be capable of supplying sufficient materials other than timber to support the construction of mine-site infrastructure. There is a significant local labour pool available for training and recruitment to any envisioned mining operation. Although some main roads dissect the district, it will be necessary to build access roads and bridges for any envisioned mine. The location of the nearest sources of power and water as well as tailings and process areas will have to be understood via a scoping study.

## 6 HISTORY

### 6.1 Prior Ownership

From the 1920s to the late 1950s, two exploration groups, Société Internationale Forestière et Minière du Congo ("FORMINIERE") and Société minière de l'Aruwimi – Ituri ("SMAI"), held mineral concessions in the area (RMCA, 2007). Société Minière de la Tele ("SMT"), a subsidiary of FORMINIERE, was in charge of development and exploitation for both companies. All remaining Somituri Project PEs were on the FORMINIERE concession. The Mineral Corporation has no knowledge of the historical ownership of the property covered by the Somituri Project PEs prior to and since independence in 1960.

### 6.2 Nature of exploration and development by previous owners

Kilo contracted RMCA in December 2006 to carry out a compilation of the RMCA archives on gold in the region of Adumbi Prospect in the DRC. The compilation focused on gold exploitation on 20 Exploitation Licences, now held



as eight Exploitation Licences (Figure 3) and collectively referred to as the Somituri Project. The majority of the data available to RMCA was prior to the 1960 independence of the DRC.

Presented in Table 3 is a summary for Exploitation Licence PE9691 extracted from the RMCA (2007) compilation. Subsequent activity and data sources are also presented.

**Table 3: Summary of historical production**

1927 – 1951	The M'Boro and Amuango deposits produced alluvial gold.
1938 – 1955	Primary and alluvial gold was produced from the Kitenge and Maipinji deposits.
1944	The Kitenge plant was built.
1948	Underground and surface exploration at Manzako.
1952 – 1959	Primary gold was produced from the Bagbaie & Adumbi deposits.
1955	Kitenge and Maipunji closed.
1959	Adumbi and Bagbaie closed.
1975	BRGM summarise the property
1980 – 1981	BRGM map, sample and drill 3 holes at Adumbi.
1984	BRGM complete a literature study of Adumbi.
1989	BHP-Utah Mineral International property review of Adumbi.

### 6.3 Historical Mineral Resource and Reserve Estimates

A non-NI43-101 compliant historical resource by BRGM (1984) concluded that a 700m section of the Adumbi gold deposit plus a 200m section of the Bagbaie gold deposit to a vertical depth of 20m below the base of Adumbi Mountain could host approximately 20 tonnes of gold which equates to 643 000 troy ounces ("oz").

The conclusions of a non-NI43-101 compliant historical resource for Adumbi by BUGECO (1988) concluded that remaining resources in the main zone, after mine closure in 1959, were 929 880oz Au. In addition, the BUGECO's (1988) non-NI43-101 compliant historical resource further concludes that an additional 5 tonnes of gold (160 750oz) could be hosted outside the main zone within Adumbi Hill. The total BUGECO (1988) non-NI43-101 compliant resource is 1 090 630oz Au as presented in Table 4.

**Table 4: Adumbi non-NI43-101 compliant historical resource (BUGECO,1988)**

Oxide Ore Tonnes	Grade g/t Au	Sulphide Ore Tonnes	Grade g/t Au	Ounces Au
<b>Main Zone</b>				
1 000 000	9.8	-	-	315 050
-	-	2 250 000	8.5	614 830
<b>Outside Main Zone</b>				
-	-	-	-	160 750
<b>Total Ounces Gold</b>				<b>1 090 630</b>

### 6.4 Historical Production

Historical exploitation from the Adumbi, Bagbaie, Kitenge and Maipinji gold mines between 1920 to 1959 is reported as 291 000oz Au (RMCA, 2007). The

gold production is summarised in Table 5. Vertical and longitudinal sections of the Adumbi mine, circa  $\pm 1958$ , are illustrated on Figure 5. Evident from the vertical section is that exploitation has only occurred, for the most part, above the level of the creek. In addition, mining only focused on a high grade continuous quartz vein.

**Table 5: Historical gold production at Adumbi, Bagbaie, Kitenge and Maipinji.**

Mine	Tonnes Au	Total Au Production			Recovered Grade g/t Au
	Alluvial	Primary	Tonnes	Ounces	
Adumbi & Bagbaie	2.180	4.440	6.620	212 840	9.1
Kitenge & Maipinji	0.401	2.030	2.431	78 158	6.8
<b>TOTALS</b>	<b>3.370</b>	<b>8.135</b>	<b>11.505</b>	<b>291 000</b>	

## 7 GEOLOGICAL SETTING

### 7.1 Regional Geology

The description of the regional geology of the north-eastern portion of the DRC is a simplified summary from a draft research paper on the geology of the DRC by Deblond and Tack (2000) and Schlüter (2006) and concentrates on the regional geology of eastern DRC.

Archaean gneisses and granite-greenstone terrains cover much of northeast DRC which extend into the Central African Republic ("CAR"), western Uganda and southern Sudan (Schlüter, 2006). Old basement gneisses, dated at about 3.5Ga, are known as the Bomu (amphibolite-pyroxene gneisses and granites) and West Nile Complexes. Scattered greenstone belts (known as the Ganguan and Kibalian Greenstone Belts) have been dated at older than 2.9Ga and 2.81Ga, respectively.

The Archaean Ganguan supracrustal series overlies the Bomu Complex, and includes quartzites, slates and metavolcanics (talc schists). It is considered to be part of the Kibalian-Ganguan greenstones. The Ganguan series is intruded by aplitic and quartz veins and by small doleritic massifs.

The Upper Congo Granite-Greenstone ("UCGG") association of north DRC belongs to the granite-greenstone belts of northeastern DRC and CAR. In north-eastern Congo, the greenstone belts are referred to as the Kibalian (Supergroup) of Archaean age. Greenstones form a number of zones of approximately 10km<sup>2</sup> to 100km<sup>2</sup> composed of metavolcanics and some metasediments. Granitoids form a significant part of the Precambrian rocks in north-eastern DRC. The simplified geology of the north-eastern DRC is illustrated in Figure 3.

Deblond and Tack (2000) have identified Upper Kibalian sediments with some andesitic volcanics, resting upon a Lower Kibalian volcanic granitoid association in DRC. The metavolcanics of the Lower Kibalian have been subdivided into ultramafic, mafic, intermediate and andesitic. The sediments of the upper Kibalian are pelites and banded iron formation ("BIF", also referred to as itabirites). The Lower Kibalian is intruded by 2.81Ga old tonalites, whereas the

Upper Kibalian is intruded by 2.46Ga old granodiorites and granites that represent most of the volume of the UCGG belt.

The UCGG associations of the Archaean greenstone belts of the northern Congo craton have been classified according to their characteristics and to that of their basement as: (a) the type A UCGG association (about 95% of the gold output) consists of greenstones with abundant mafic-ultramafic volcanics and scarce sediments. Associated granitoids correspond to a typical Tonalite-Trondhjemite Granitoid suite. The tonalites of this UCGG association intruded 2.8 - 2.9Ga ago; and (b) the type B UCGG association comprises mafic-intermediate volcanics and sediments (mainly BIFs). Associated granodiorites and granites (2.4 - 2.5 Ga) represent most of the volume of the entire greenstone belts, and intruded this type B association and its basement.

The areas of the volcanic-granitoid Lower Kibalian display a synclinal tectonic style, while the greenstones of the Upper Kibalian form belts less than 10km wide, 30 - 60km long, made up of units isoclinally folded along subvertical axial planes and horizontal axis. These units "float" within the granitoids.

## 7.2 Local Geology

The 1980 1:200,000 scale geological maps edited by the Geological Survey of the Republic of Zaire (currently the DRC), in conjunction with the BRGM of France, covers the area of the Somituri Project as illustrated in Figure 3 (Aime *et al*, 1980).

The Adumbi Prospect is located within the Upper Kibalian Paragneiss Complex (Figure 3), which regionally consists of quartzitic sandstone commonly containing pyrite, with lesser amounts of pelitic and graphitic shales, fine-grained quartzitic sandstone, banded sericite schists, quartz-sericite schists, phyllites, spotted schists, red banded shale and BIF.

Intrusive rocks in the area of the Somituri Project, intruding indiscriminately all the basement formations, consist of possibly Late Proterozoic dolerite/diabase and doleritic gabbro and diorite. Quartz veins are predominantly associated with the Upper Kibalian. The Proterozoic Lindian metasedimentary rocks unconformably overlie the Kibalian rocks. Palaeozoic, Cenozoic and Quaternary metasediments and alluvial sediments are locally present within the project area. Post Karoo rocks are essentially represented by lateritic cuirasse. The Karoo formation comprises black shales, alluvial and alluvial deposits.

## 7.3 Somituri Project Geology

The local geology for the Exploitation Licences, presented below, encompasses information derived from the 1:200 000 geological map (Aime *et al*, 1980) and airborne magnetic data used by Kilo. Gold in the Ngayu Greenstone Belt is known to be associated with siliceous chemical metasedimentary rocks, including BIFs, and quartz veins.

The published geological map and historical reports indicate that this Exploitation Licence is underlain by Upper Kibalian rocks. On PE9691, the dominant lithologies include a well bedded BIF unit, tuffaceous

metasedimentary rocks from time to time referred to as greywacke, black shale, and a mafic intrusion.

The characteristics and spatial distribution of the geology of PE9691 is presented in more detail in Section 9 on Exploration and Section 10 on Drilling.

#### **7.4 Structural Geology**

The Mineral Corporation and Kilo have collaboratively developed a structural framework for the Adumbi deposit, in order to support the Mineral Resource estimates. The prominent BIF unit described in Section 7.3 was used to develop the structural interpretation. A structural plan (at 850mamsl) is provided in Figure 4.

The strike orientation of the BIF is northwest-southeast, which is parallel to the trend of the Upper Kibalian rocks described in Section 7.2. The BIF is interpreted to have a steep, near-vertical dip, which is supported by The Mineral Corporation's observations in adits at Adumbi. A series of north-northwest striking faults appear to dislocate the BIF, and it is interpreted that these faults have a strike slip component, resulting in an apparent thickening of the BIF in the centre of the Adumbi Hill. The Mineral Corporation identified this trend, with the sense of movement, in an earlier report (The Mineral Corporation, 2010) which included an analysis of the linear trends evident on the regional DTM of the Adumbi area.

The zones of gold mineralisation oriented at 315° are interpreted to be parallel to the BIF, and cross-cut the faults and are supported by two orientations of measured artisanal mining strike of 300° and 330°. (Section 7.5 contains more regional descriptions on the mineralisation orientation.)

#### **7.5 Mineralisation**

Mineralisation on Exploitation Licence Number PE9691 is known to occur at Bagbaie (referred to as Adumbi North), Adumbi Prospect, Kitenge, Manzako, Monde Arabe, Maipinji and Vatican (Figure 6).

The mineralisation at the Adumbi Prospect predominantly occurs as gold in association with sulphides, mainly fine grained pyrite but also arsenopyrite, pyrrhotite and chalcopyrite. Gold bearing mineralisation is hosted within the BIFs, consisting of chert, magnetite BIF, hematite BIF and lesser amounts of chert banded with fine-grained clastic metasedimentary rocks and chert banded with black shale. Locally thin layers of black shale are interlayered with the BIFs.

Gold mineralisation within the Adumbi Prospect is related to the northwest trending shear zones, which dip steeply towards the northeast and which, in some parts of the area, seem to utilise the competency contrast between two lithologies, namely the BIF-chert and the tuffaceous-greywacke metasedimentary rocks.

This mineralisation occurs over a strike length of 2km in a zone approximately 100m wide to a depth of approximately 350m. The continuity of mineralisation appears to be oriented vertically close to the wall rocks of the BIF.

Preliminary interpretations by Kilo conclude that several mineralising events occurred at Adumbi. The earliest event produced diagenetic pyrite in the black shales and in some of the tuffaceous metasedimentary and greywacke rocks. The second event consisted of pyrrhotite, which may be a syn-chemical precipitate in accordance with the volcanogenic massive sulphide deposit model. This was followed by two additional mineralising events; their sequence is not yet fully understood but a possible scenario is that the next event was sulphur-poor, resulting in the precipitation of arsenopyrite. The final event is thought to have been pyrite in association with gold, probably syn-late stage or a D3 tectonic event. Tectonically induced permeability in the form of macroscopic to microscopic brittle and ductile network of micro-fractures, breccias and shear zones served to channel and concentrate hydrothermal fluids that were considered to be responsible for the gold mineralisation and the extensive alteration of chemical metasedimentary rocks, BIF and chert.

Mineralisation associated with the early stage pyrrhotite and pyrite event is highly deformed. The subsequent mineralising event is recognised by silica flooding and disseminated fine-grained subhedral arsenopyrite  $\pm$  pyrite within a macroscopic to microscopic brittle network of micro-fractures. Medium to coarse-grained, euhedral pyrite, may be syn to post-deposition of the gold mineralisation events. Visible gold was not observed in the drill core, but free gold is recovered by local artisanal miners. However, this does not necessarily indicate the nature of the gold mineralisation but may be a reflection of the fact that the artisanal miners operate in the near-surface, oxidised environment.

High gold values are associated with marked silicification (mainly quartz veining), coupled with iron- and magnesium-rich carbonate flooding and sulphidisation of magnetite in the BIF. BRGM (1982) concluded that gold on PE9691 occurs in association with pyrite, pyrrhotite and arsenopyrite. In addition, chalcopyrite and galena have been observed. Gold can occur within the pyrite as electrum. It was noted that the highest gold grades do not have a direct correlation with the grades of arsenic. In polished section, ankerite and calcite were observed in association with the gold mineralisation, in addition to quartz.

According to BRGM (1975), three 'barrels' of pyrite found near Adumbi Hill returned gold values of 79g/t, 212g/t and 297g/t, indicative that there is a direct link between gold and pyrite.

## 8 DEPOSIT TYPES

According to Randgold Resources (Hamilton *et al*, 2006), gold mineralisation within the Kilo-Moto Greenstone Belt in the eastern part of the DRC is associated with epigenetic mesothermal style mineralisation. This style of mineralisation is typical of gold mineralisation in Archaean and Proterozoic greenstone terranes and is generally associated with regionally metamorphosed rocks that have experienced a long history of thermal and deformational events. These deposits are invariably structurally controlled.

Mineralisation in this environment is commonly the fracture and vein type in brittle fracture to ductile dislocation zones. At the Adumbi Prospect, the gold mineralisation

is generally associated with quartz and quartz-carbonate-pyrite  $\pm$  pyrrhotite  $\pm$  arsenopyrite veins in a BIF horizon.

## 9 EXPLORATION

### 9.1 Introduction

The Mineral Corporation has made two site visits and, based on these visits and inspection of data and reports supplied by Kilo, it is of the opinion that Kilo's procedures and methodologies, summarised in the following sections, are acceptable for the reporting of Mineral Resources.

Kilo carried out an initial exploration program on PE9691 from January to December 2010. Geological mapping, collection of 1 043 soil samples, 593m of adit sampling, 734m of trench excavation and sampling and 6 607m of diamond drilling was completed on the Adumbi Prospect.

The areas targeted by the 2010 exploration programme by Kilo are illustrated on Figure 6. A fully functional exploration camp was constructed about 0.5km to the west of Adumbi Village. In 2011 Kilo completed a further 22 drill holes that have been added to the 2010 data and employed in this Mineral Resource update.

Kilo have explored a 2 058m strike length of the Adumbi Prospect with 53 drill holes (including 6 re-drilled abandoned holes). In addition, the Adumbi Prospect has been explored by the sampling of 4 adits and excavation and sampling of 19 trenches (six completed in 2011).

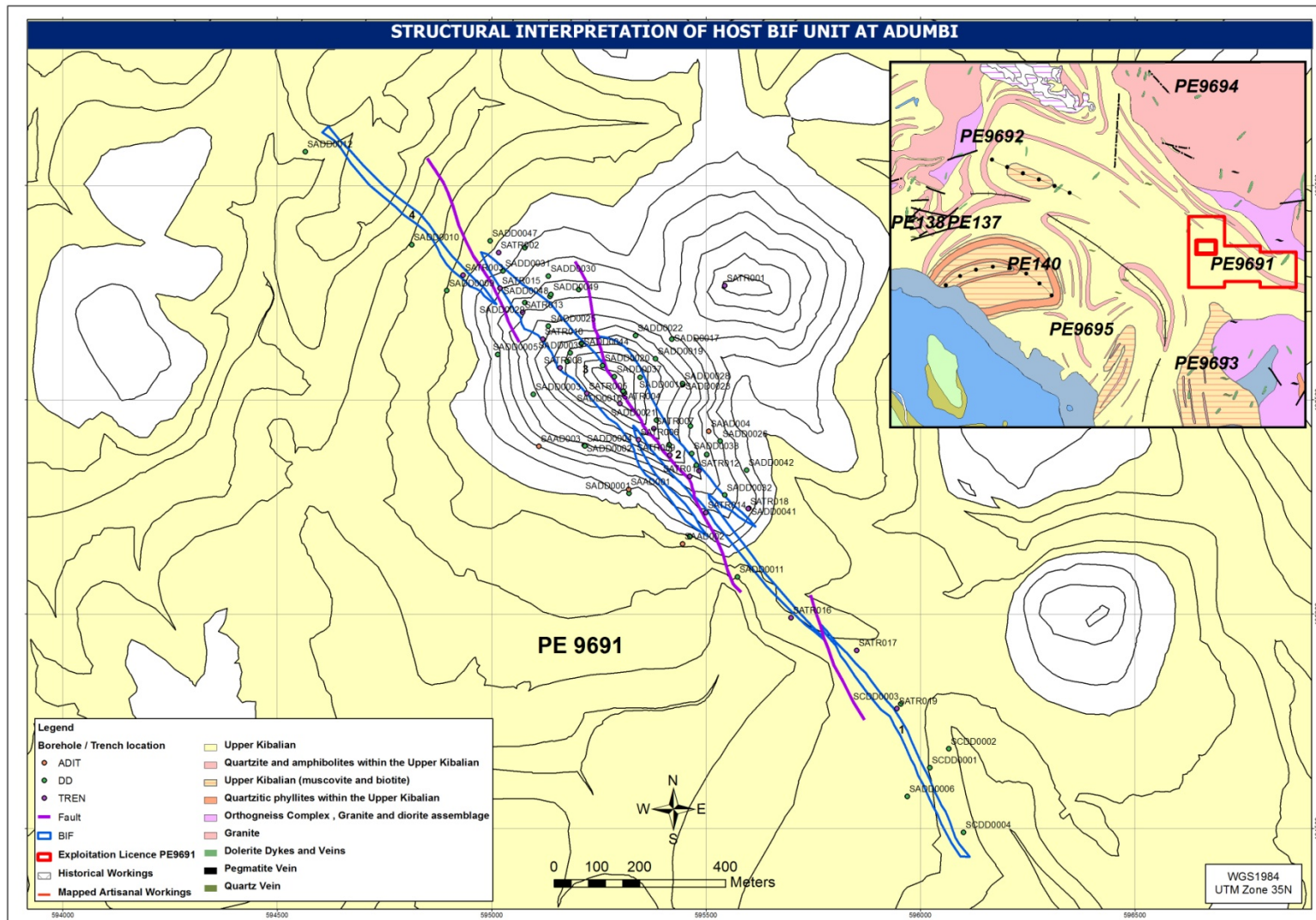
The previously producing Kitenge gold mine and its northwest strike extension were explored over a 2km strike length with 5 drill holes, 2 trenches, a road cutting and 3 lines of soil sampling. Manzako, a former gold producer from surface and underground, was targeted over a 1 360m strike length by 3 drill holes. An artisanal working, locally known as Monde Arabe, which may be the northwest strike extension of the Kitenge gold-bearing structure, was tested with one drill hole.

### 9.2 Exploration Rationale and Objectives

Kilo has primarily used the localities of previous mining and current artisanal mining operations to define drill targets in PE9691. The type of exploration being currently undertaken is diamond drilling, trenching over selected target areas, mapping and sampling of existing adits, limited geological mapping and soil sampling. Details of the type and number of exploration drill holes at Adumbi, Kitenge and Manzako are discussed below.

The primary objectives of the exploration strategy are: to improve understanding of the extent and style of mineralisation and derive Mineral





**Figure 4: Structural interpretation of host BIF at Adumbi Prospect**

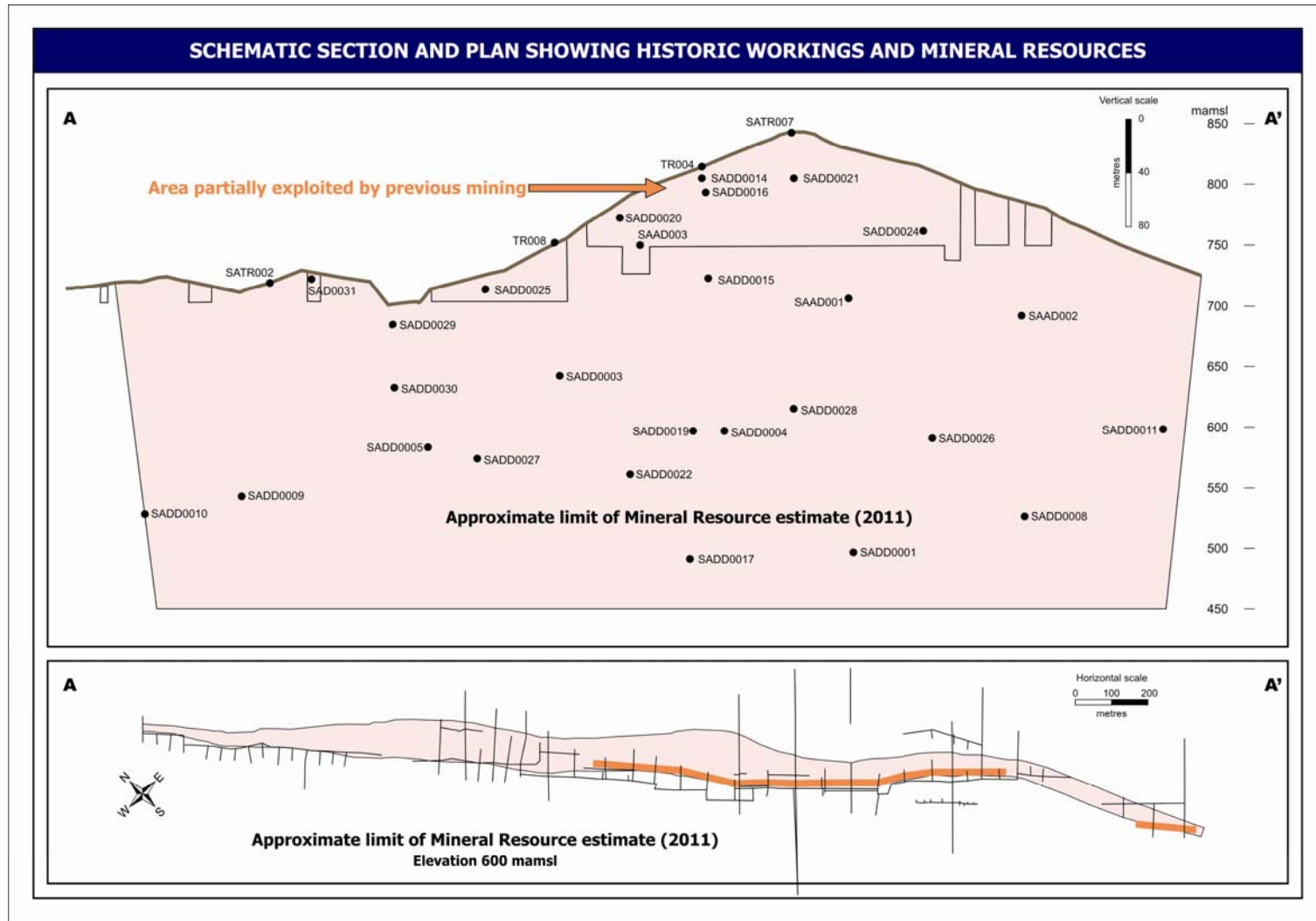


Figure 5: Vertical and Longitudinal Section of Adumbi Mine

Resource estimates for the Adumbi Prospect; to test evidence for mineralisation at Manzako and Kitenge; and optimise exploration models and strategies.

### 9.3 Geological mapping

Reconnaissance geological mapping focussed on areas of historical gold exploitation and active artisanal gold exploitation sites. The areas mapped in 2010 are the Adumbi Prospect, Kitenge, Manzako, Adumbi North and the Vatican Prospects. The spatial distribution of each of the Prospects mapped in 2010 on PE9691 is illustrated on Figure 6.

The dominant lithologies within the Adumbi Prospect (Figure 6) were determined from mapping of the historical era adits, complemented by Kilo's diamond drill core and the historical and Kilo's trenches.

The lithologies at Adumbi are well-bedded magnetite-chert and hematite-chert units, fine clastic metasediments, black shales, and minor thin intervals of black shale. Chert layers interbedded with these lithologies are common. Black shale typically occurs as 1-2m wide layers within the BIF and chert units. This sheared and folded chemical metasedimentary sequence is flanked by tuffaceous metasediments and/or greywacke to the northeast and to the southwest. The rocks to the southwest are loosely referred to as the "greywacke footwall" and those to the northeast as the "tuffaceous metasedimentary hangingwall" units. The structure and the relations between the rocks to the northeast and southwest of the BIFs are currently poorly understood and there is no evidence on which to determine a younging direction. The terms hangingwall and footwall, therefore, do not have any stratigraphic connotation in this context. Weathered or oxidised BIF and chert units are exposed at and near the top of Adumbi Hill.

Belgian era mining focused on mineralised quartz veins about 3-4m wide, localised within the BIF chert. Mapping to date has revealed multiple quartz veins hosted within the Kitenge shear zone.

Reconnaissance mapping on Manzako (Figure 6) delineated a northwest-southeast trending shear zone over a strike length in excess of 2km. This shear zone hosts multiple parallel to sub-parallel quartz veins ranging in width from 1-2m wide. There are a number of existing adits and narrow open pits within the shear that trend parallel to the strike direction of the shear zone, indicating that the previous Belgium mining mainly focused on quartz veins close to surface.

Adumbi North was exploited by Société Minière de la Tele, originally as the M'Boro mine, then as the Bagbaie Mine, subsequently the Bagbaie-Adumbi mine and finally as Adumbi. Gold processing plant included mills that were situated at Bagbaie and Adumbi (RMCA, 2007).

Monde Arabe is situated about 400m east of the Adumbi Prospect (Figure 6). Geological mapping has delineated a northwest-southeast trending shear over a strike length in excess of 2km. Preliminary indications are that the Monde

Arabe shear zone may be the on-strike continuation of the Kitenge shear zone. However, detailed mapping is required before this can be confirmed.

Vatican is situated approximately 1km to the east of Adumbi Hill (Figure 6). Reconnaissance geological mapping of exposures in the artisanal pits indicates that the area is dominated mainly by weathered, sheared metasedimentary rocks that trend east-west to northwest-southeast. The rocks in both orientations dip from a shallow angle to sub-vertical. Quartz vein-hosted gold mineralisation appears to be controlled by utilising both of the shear zone orientations. Based on the limited mapping to date, it can be concluded that Vatican has in excess of 600m of strike length hosting possible multiple quartz veins. Active artisanal gold exploitation indicates that Vatican has the potential for gold mineralisation, although the width and depth of mineralisation is not known.

#### **9.4 Structural mapping**

No detailed structural mapping has been completed to date. However, observations by The Mineral Corporation suggest that, in general, the Adumbi BIFs appear to be more intensely sheared than the wall rocks, probably due to the fact that the BIFs are more competent than the encompassing rock mass and probably subjected to brittle failure.

The Mineral Corporation is also of the opinion that an understanding of the regional tectonic events will be necessary to develop models for controls of mineralisation. The Mineral Corporation has identified linear features from the regional digital terrain model (DTM) of the Adumbi area and classed them based on its orientations. Initial impressions suggested that the gold mineralisation may be associated with the tension related to a northwest sinistral shearing orientation.

#### **9.5 Trench sampling**

Kilo excavated 13 trenches totalling 734m on the Adumbi Prospect during 2010 and a further six in 2011. Trenches were excavated to evaluate the strike continuation of the BIF unit and gold mineralisation. Trenches were excavated a few centimetres into fresh bedrock underlying the overburden, saprolite and/or saprock.

Trenches were excavated at 80m intervals oriented normal to the lithological strike direction on Adumbi Hill. The focus of the trenching was to evaluate the near surface gold mineralisation and to provide lithological information to determine on-strike continuation of mineralisation as well as that of the gold bearing host rocks.

#### **9.6 Adit sampling**

Kilo had completed 593m of adit sampling on the Adumbi Prospect in 2010 and nil in 2011. Horizontal chip channel samples were collected over the length of 4 adits. The analytical results from the adit samples suggest that the operators at the former producing Adumbi Mine only focused on mining the 'high-grade' wide near surface quartz vein zones.

## 9.7 Diamond drilling

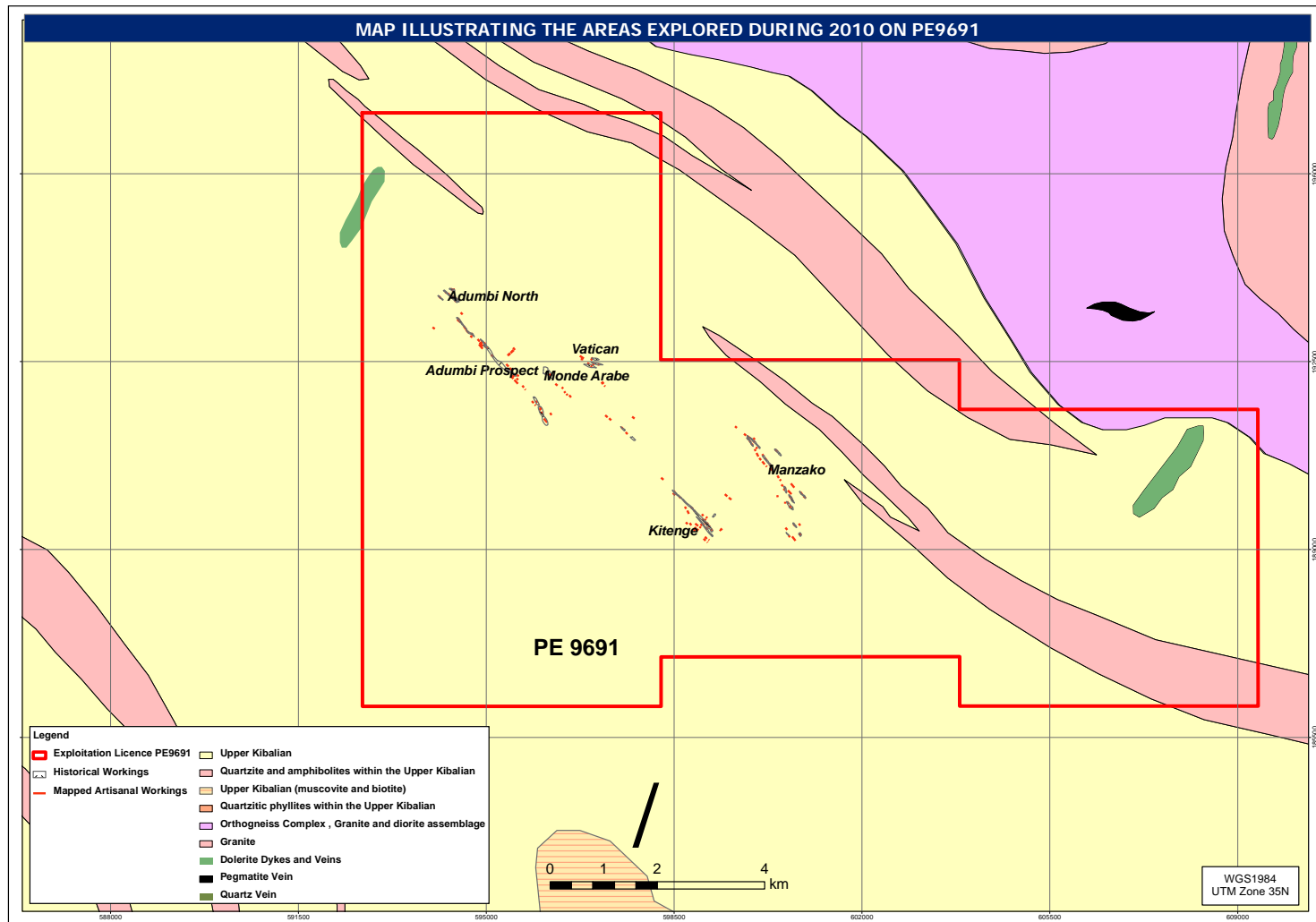
Kilo has carried out 9 928m of diamond drilling on the Adumbi Prospect under a contract with SENEX sprl, a DRC subsidiary of the drilling company Geosearch. Two helicopter-portable Longyear 38 diamond drill rigs were utilised. The Mineral Corporation observed the drilling methodologies and procedures during the site visit of December 2010 (Section 12.1.1). Drill holes commenced with PQ size drill rods (core diameter of 85mm). Once the upper weathered zone and fractured formations had been drilled, the drill hole was reduced to HQ sized core (63mm) through the transition zone from highly weathered and/or oxidised units to fresh unweathered competent rocks. The fresh rock was drilled with NQ size drill rods, producing 48mm diameter core. No down hole surveys were completed during the site visit. Perusal of down hole survey data and Kilo reports indicated that down hole survey data was collected at 15m intervals using a FlexIT survey tool with a digital readout. The data was digitally stored and manually transferred to the daily drill log sheets by SENEX sprl personnel.

The location of the drill site collars was determined in the field with a hand held Garmin 60CSx GPS (WGS 84 Zone 35N UTM co-ordinates) by Kilo geologists. Kilo geologists reported to The Mineral Corporation that the drill site preparation was generally completed manually, although a bulldozer was used on accessible sites. After clearing the drill pad, the collar site was pegged with respect to UTM co-ordinates determined by GPS. A compass was used to establish a line oriented with respect to magnetic north to indicate the drill hole azimuth. Once the drilling rig was moved onto the pad by a Eurocopter B3 helicopter, a Kilo geologist verified the set-up orientation of the drill hole by a clinometer and a compass.

Rehabilitation of sites is the responsibility of Kilo. A verbal report to The Mineral Corporation by the Kilo site geologist, Mr S Robinson, indicated that this process started during January 2011 and is now completed.

Standard procedure reported to The Mineral Corporation and observed during the site visit (Section 12.1.1) indicated that drill rig personnel placed the recovered drill core into metal core trays labelled at the drill site with the drill hole number. End-of-run markers are placed in the core tray between the end and start of each recovered drill run. Information on core recovery, depth of the run, stickup length and ground conditions are recorded for each run and inspected by Kilo geologists. The core is transported from the drill site by helicopter to the core yard facility at Kilo's exploration camp.





**Figure 6: Map illustrating the areas explored in 2010 on PE9691 (after Aime *et al*, 1980).**



## 9.8 Expenditure

Kilo has reported the following information on expenditure on Exploitation Licence EP9691 to The Mineral Corporation:

Un-audited expenditure totalling CDN\$18 354 532 was incurred by Kilo to December 2011 (Table 6). This amount includes CDN\$1 271 749, comprising exploration expenditure for which invoices were received and/or paid in calendar Q1 2012.

**Table 6: Expenses incurred to Q1 2011 on PE9691 (CDN\$)**

ACTIVITY	2012 Q1	2011 Q1	2010	2009	2008	2007
Acquisition costs	82 425	73 640	126 277	172 384	10 866	84 776
Drilling	759 856	7 075 026	6 800 089			
Sampling	76 579	127 090	151 563			
Professional Fees	165 774	329 223	318 294	27 451	49 620	10 665
Management/ Administration	59 336	374 665	672 539	34 055	36 808	17 424
Geological	16 145	74 903	165 687			105
Travel	28 120	10 135	1 398		8 013	13 825
Trenching	4 540	51 240	47 664			
Other	78 999	202 054	9 481			5 823
<b>TOTALS</b>	<b>1 271 749</b>	<b>8 317 976</b>	<b>8 292 992</b>	<b>233 890</b>	<b>105 307</b>	<b>132 618</b>

## 9.9 Sampling method, type, area and sampling intervals

The Mineral Corporation inspected sampling sites and core sampling methods and is of the opinion that all relevant sampling locality data was recorded and sample collection took place according to generally accepted industry procedures. All collected samples were retained in a locked secure shed until they were dispatched by vehicle to Kilo's administrative office in Beni. A commercial freight forwarding agent transported the samples from Beni to ALS Chemex laboratory in Mwanza, Tanzania for sample preparation.

### 9.9.1 Trench samples

The Mineral Corporation inspected the trenching and sampling processes during the 2010 Site Visit (Section 12.1.1). Trench samples were dug by labourers, using picks and shovels to bedrock where practicable. Sampling commenced following completion of geological logging of trenches. In mineralised sections and sections of geology considered to be favourable for mineralisation, a maximum sample length of 1.0m was applied. Where lithologies were deemed unmineralised samples of approximately 1.5m were generally taken. Sampling intervals did not cross lithological boundaries, with the exception where the presence of narrow veining hosted within a unit were sampled. After all the sample intervals were marked, continuous channel samples were collected from each marked interval under the supervision of the geologist. Sampling took place along one wall of the trench to minimise the possibility of contamination.

### 9.9.2 Adit samples

The Mineral Corporation inspected one adit which had been sampled by Kilo during the site visit (Section 12.1.1). Sampling intervals in adits were marked by inserting concrete nails into the rock at the ends of each sample. Horizontal chip channel samples were collected by hammer and chisel over predetermined sample intervals. The sampling was based on the lithological and alteration characteristics. Sample lengths varied from 0.5-2.0m in horizontal length.

### 9.9.3 Drill core samples

The Mineral Corporation inspected sampling procedures during the 2010 Site Visit. The drill core (laid in appropriately sized SANDVIK metal core trays) was transported from the drill site in an aluminium bin by helicopter, using a sling. This procedure was reported to The Mineral Corporation, but not observed at the time of the site visit. However, the method was observed for transport of building material. Prior to logging and sampling, the drill core was digitally photographed in order to maintain a permanent record. All of the drill core photographs were downloaded into the Somituri Project data base retained in company computers on site and in the corporate office in Toronto, Canada.

One metre sample lengths were marked on the core in the BIF horizon during logging. The sample depths for each sample were entered into a sample ticket book, which contained removable duplicate sample ticket tags. The core sample numbers and sample intervals were written onto pre-printed diamond drill log forms. Each marked sample was split along its length by trained staff using a dedicated drill core diamond saw. The core was broken at the sample position marks using a geological pick. The sampling lengths were reduced when necessary, (e.g. where lithological contacts or core size changes were encountered, with the bottom/top end of the sample being about 2cm from the contact). One half of the core was replaced in the core tray and the remaining half was placed in a plastic sample bag, in which the sample number is folded in along the open end of the bag, which was then closed using a stapler. Sample tags were placed in the core tray at the position of the bottom end where samples had been obtained. A brick was sawn ("brick cleaning") after each sample had been split to ensure that no cross-contamination takes place between samples.

The total length of core through the BIF horizon was sampled and a further 30m above and below the contacts with the hanging- and footwalls. Sample lengths in the hangingwall and footwall were increased to 2m. Hanging- and footwall zones where there are any features, such as sulphide concentrations which may be gold-bearing, were also sampled. Sampling intervals ranged between 0.5-2.0m, depending on lithological and alteration characteristics. Samples in the mineralised section were generally 1.0m in length

or less. Samples did not cross lithological, alteration or sulphide mineralisation boundaries or where core size was changed.

The individual samples were placed into large rice bags, labelled and weighed and retained in locked storage on-site. Samples were transported in Kilo owned vehicles to Kilo's administrative office in Beni, and then to ALS Chemex in Tanzania by a commercial freight forwarding agent.

The drill core inspected by The Mineral Corporation during the site visit of 2012 (Section 12.1.2) indicated recoveries between 97% and 104%, averaging 100%.

#### **9.9.4 Factors affecting reliability of results**

The following items have the potential to affect reliability of analytical results, based on The Mineral Corporation's observations:

- Chain of custody during sample transport;
- Possible sample contamination within the laboratory due to poor dust collection;
- Possible inadequate pulp particle size for the assay charge; and
- Inhomogeneous medium being sampled (i.e. a nugget effect).

#### **9.9.5 Sampling quality and biases**

Based on the site visit and data verification (Section 12) on results received to date and, in the opinion of The Mineral Corporation, the sampling quality is within acceptable standards and no material biases have been identified.

#### **9.9.6 Rock types and mineralisation**

The main rock types observed on PE9691, as provisionally classified by Kilo field geologists and observed by The Mineral Corporation, include magnetite BIF, hematite BIF, chert, black shale, tuffaceous metasedimentary rocks, greywacke, shale, chlorite schist, quartz and carbonate veins, mafic intrusives and mafic ash tuff. These rocks are relatively fine-grained and no petrographic studies have been conducted to date, with the result that the terminology employed may change in future.

The magnetite BIF unit is defined by alternating layers of amorphous white to pale grey chert and massive black magnetite. This is the dominant lithological unit that occurs on the Adumbi Prospect. This unit is host to numerous pale grey to smoky quartz veins and veinlets, generally parallel to the bedding. Fine grained sulphides (pyrite, arsenopyrite and pyrrhotite) are associated with the quartz veining. Kilo has reported that high gold values are associated with high concentrations of pyrite, whereas lower gold values are associated with pyrrhotite and a lack of pyrite.

The hematite BIF unit consists of amorphous grey to dark grey chert interbanded with reddish brown hematite. Due to the oxidation of the sulphides in this lithological unit, no base metal sulphides are macroscopically visible. This unit is host to numerous smoky quartz veins and veinlets oriented parallel to the bedding.

Chert is normally an amorphous, massive grey rock. It is commonly host to quartz veinlets and veins and to sulphides (pyrrhotite, pyrite and arsenopyrite) mineralisation. Preliminary simplistic observations by Kilo indicate that there have been at least three, and possible more, mineralising episodes. The preliminary interpretation places the majority of the gold with the last episode of pyrite mineralisation. The pyrrhotite commonly displays volcanogenic massive sulphide characteristics in that the pyrrhotite occurs, in part at least, as semi-massive veins resembling typical 'stringer ore'. Those intervals containing in particular abundant fine grained pyrite return significant gold values.

The black shale is a fine-grained rock containing detrital particles. It is dark grey to black, normally foliated and sheared displaying bedding and rarely primary sedimentary features such as flame structures. Large cubic pyrite crystals in the order of 1cm occur throughout this unit. This rock type is commonly host to numerous thin quartz veins and veinlets, but typically does not carry significant gold values. This rock type occurs at several intervals within the chemical metasedimentary unit.

The tuffaceous metasedimentary rocks are generally grey to purplish in colour and are comprised of fine to medium-grained clastic detrital particles. It is dominantly associated with the hangingwall side of the Adumbi Prospect mineralised structure. Sulphides and gold values are not normally reported. Rarely, it may host a mineralised quartz vein.

The greywacke is a grey, metasedimentary rock comprising medium-grained clastic detrital particles. This unit occurs on the footwall side of the Adumbi Prospect mineralised structure and it may have formed from the re-working of an ash tuff. Locally, it is host to quartz and carbonate veins and veinlets. In addition, calcite veinlets with some rusty iron stains along the margins occur in places. Minor late stage cubic pyrite occasionally occurs.

The visual differentiation between the tuffaceous metasedimentary and the greywacke units is difficult. Given that the structure of the Adumbi Prospect is not well understood with respect to folding and stratigraphic top directions, Kilo arbitrarily distinguishes the footwall and hangingwall as two separate units.

**Table 7: Location and orientation data of the Adumbi Prospect diamond drilled holes**

Drill Hole	UTM WGS 84		Elevation Metres	Azimuth Magnetic	Dip	Length Metres	Completed yyyy/mm/dd
	UTM E	UTM N					
SADD0001	595320	192282	683.0	40.0	-50.0	316.60	2010/03/12
SADD0002	595216	192394	701.0	40.0	-50.0	142.80	2010/03/31
SADD0003	595097	192513	712.0	40.0	-50.0	384.12	2010/04/27
SADD0004	595217	192393	701.0	40.0	-50.0	352.80	2010/04/25
SADD0005	595014	192606	687.0	40.0	-50.0	346.70	2010/06/08
SADD0006	595969	191575	669.0	40.0	-50.0	303.55	2010/06/23
SADD0007	595462	192182	673.0	40.0	-50.0	108.30	2010/07/03
SADD0008	595462	192181	673.0	40.0	-50.0	320.70	2010/07/14
SADD0009	594895	192755	658.0	40.0	-50.0	333.00	2010/07/26
SADD0010	594813	192862	652.0	40.0	-50.0	295.70	2010/08/08
SADD0011	595573	192087	647.0	40.0	-50.0	301.70	2010/08/16
SADD0012	594565	193079	635.0	40.0	-50.0	296.70	2010/08/22
SADD0013	595309	192517	783.0	220.0	-50.0	36.30	2010/08/21
SADD0014	595309	192517	783.0	220.0	-57.0	34.80	2010/08/26
SADD0015	595346	192553	778.0	220.0	-50.0	169.70	2010/09/06
SADD0016	595306	192521	786.0	220.0	-60.0	157.70	2010/09/05
SADD0017	595420	192642	723.0	220.0	-50.0	379.70	2010/09/25
SADD0018	595382	192596	745.0	220.0	-50.0	24.30	2010/09/14
SADD0019	595382	192596	745.0	220.0	-50.0	294.40	2010/10/13
SADD0020	595258	192580	783.0	220.0	-50.0	109.80	2010/10/17
SADD0021	595384	192453	761.0	220.0	-50.0	81.30	2010/10/19
SADD0022	595335	192650	740.0	220.0	-50.0	295.70	2010/11/01
SADD0023	595446	192536	731.0	220.0	-50.0	92.00	2010/10/27
SADD0023a	595446	192536	731.0	220.0	-50.0	40.80	2010/10/30
SADD0024	595477	192348	710.0	220.0	-50.0	50.30	2010/11/05
SADD0025	595132	192672	753.0	220.0	-50.0	126.30	2010/11/10
SADD0026	595533	192404	697.0	220.0	-50.0	253.80	2010/11/18
SADD0027	595203	192758	699.0	220.0	-50.0	270.70	2010/11/23
SADD0028	595445	192538	722.0	220.0	-50.0	287.48	2010/12/01
SADD0029	595077	192727	707.0	220.0	-50.0	57.30	2010/11/27
SADD0030	595132	192789	698.0	220.0	-50.0	236.00	2010/12/07
SADD0031	595026	192801	692.0	220.0	-50.0	103.70	2010/12/07
SADD0032	595543	192278	703.0	220.0	-50.0	208.93	2011/05/29
SADD0033	595501	192372	710.0	220.0	-50.0	69.43	2011/05/31
SADD0034	595501	192373	710.0	220.0	-50.0	187.00	2011/05/31
SADD0035	595183	192610	762.0	220.0	-50.0	49.90	2011/06/21
SADD0036	595176	192590	769.0	220.0	-50.0	34.90	2011/08/01
SADD0037	595286	192554	785.0	220.0	-50.0	151.68	2011/08/11
SADD0038	595466	192375	711.0	220.0	-50.0	81.90	2011/08/10
SADD0039	595463	192439	720.0	220.0	-50.0	193.90	2011/08/25
SADD0040	595414	192396	738.0	220.0	-50.0	11.00	2011/12/14
SADD0041	595600	192247	692.0	220.0	-50.0	223.68	2011/12/25
SADD0042	595594	192336	687.0	220.0	-50.0	308.90	2011/09/07
SADD0043	595414	192395	738.0	220.0	-50.0	90.00	2011/09/01
SADD0044	595209	192632	754.0	220.0	-50.0	166.90	2011/09/11
SADD0045	595077	192855	680.0	220.0	-50.0	250.00	2011/09/16
SADD0046	595136	192742	711.0	220.0	-50.0	46.50	2011/09/18
SADD0047	594996	192871	675.0	220.0	-50.0	367.90	2011/10/04
SADD0048	595138	192746	719.0	220.0	-50.0	49.40	2011/09/21
SADD0049	595138	192746	719.0	220.0	-62.0	362.88	2011/10/15
SCDD0001	596022	191642	657.0	220.0	-50.0	87.00	2011/06/02
SCDD0002	596066	191686	639.0	220.0	-50.0	193.70	2011/06/15
SCDD0003	595954	191791	652.0	220.0	-50.0	95.00	2011/06/27
SCDD0004	596100	191491	625.0	220.0	-50.0	92.90	2011/07/05

Note: SADD0023a is a deflection of SADD0023.

Shale, consisting of grey, fine grained particles, is rarely observed. It exhibits sericitic alteration and rare cubic pyrite crystals.

Chlorite schist, not seen by The Mineral Corporation, is uncommon and is typically a medium dark green, massive rock.

Quartz veins, ranging in thickness from 1mm to 5m in thickness, occur throughout the chemical metasedimentary sequence on the Adumbi Prospect. Multiple generations, represented by variations in colour and relationships to one another, are present and a detailed study will be required to understand the relationship of the gold and different generations of sulphide mineralisation. Kilo geologists have reported that there is a definitive relationship between gold mineralisation and episodic quartz veining.

## **10 DRILLING**

### **10.1 Drilling Programme**

Kilo prospected the Adumbi Prospect with 43 diamond drill holes to a total of 9 928m of core (Figure 7).

### **10.2 Drill localities**

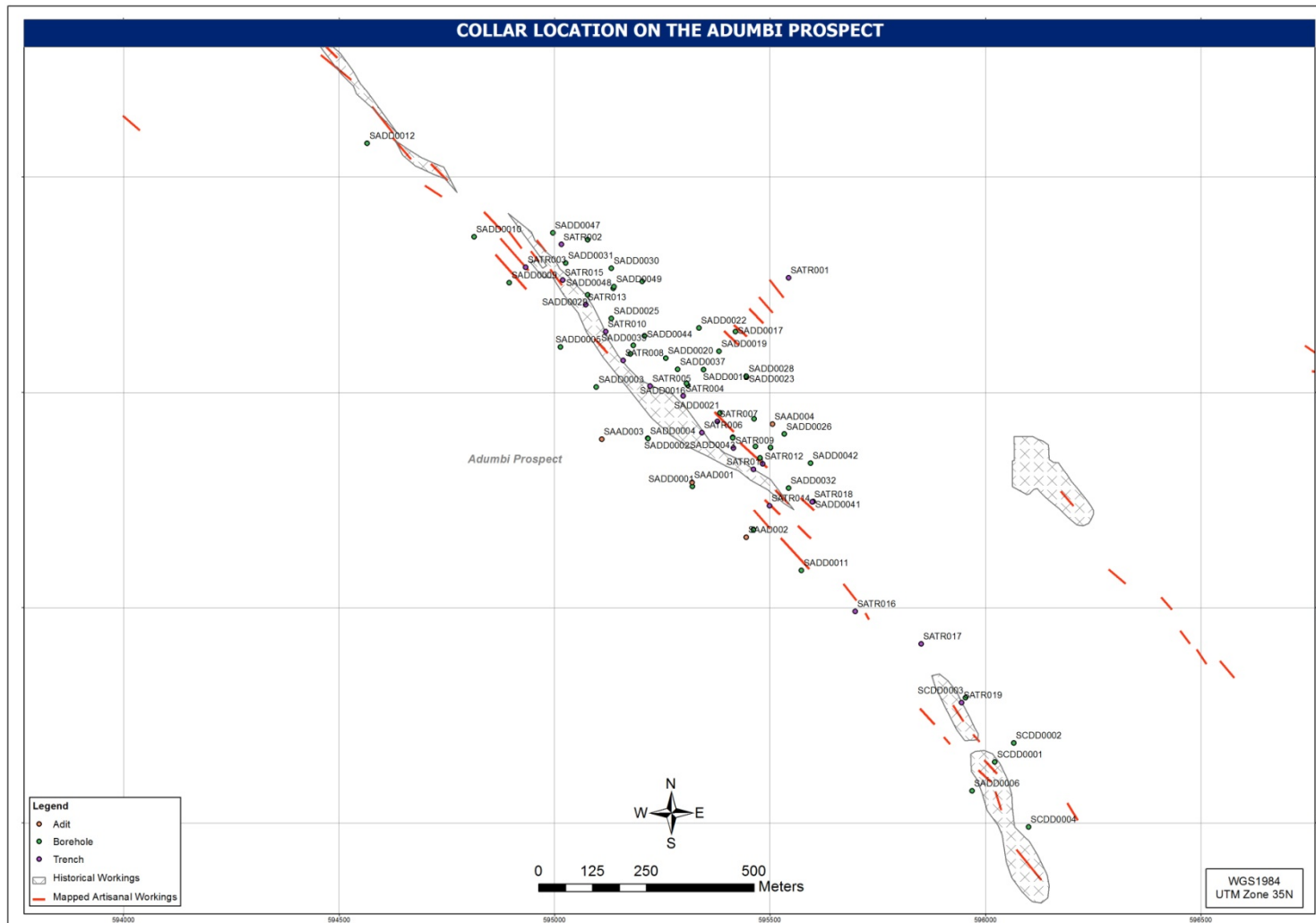
General details of each borehole are summarised in Table 7, as supplied by the Kilo site geologist.

### **10.3 Results of the diamond drilling programme**

Information supplied by Kilo to The Mineral Corporation indicated that diamond drilling on the Adumbi Prospect intersected gold-bearing mineralisation over a strike length in excess of 2.0km. This gold mineralised structure strikes northwest–southeast and dips steeply sub-vertically to the northeast. The drilling in the 1.2km long central section intersected mineralised BIFs over true widths in the order of 100m over a depth below surface of 350m.

(The true width is the width normal to the interpreted ore body side-walls and can be generally considered as the horizontal width of the ore body.) Modelling of the data supplied supports this interpretation (Section 14).





**Figure 7: Collar locations on the Adumbi Prospect**

### **10.3.1 Summary of relevant samples, values and estimated true widths**

A summary of holistic evaluation BIF cut gold values is supplied in Appendix 1.

### **10.3.2 Borehole Logging Procedures**

Logging takes place on site at the Adumbi exploration camp. In 2010, The Mineral Corporation observed the logging procedures on site and noted the following:

- An initial visual assessment of the core was made and zones of good and poor mineralisation were noted; and
- Detailed geological logging was completed. Notes were made of the lithology, alteration, mineralisation and general rock description. The rock description recorded colour and approximate mineral assemblage.

#### **10.3.2.1 Site Visit 2010**

The Mineral Corporation inspected one drill hole, SADD004, in detail for quality and detail of logging and sampling, and one, SADD019, was checked in detail across the BIF horizon for the same features. Observations are summarised in Table 8.

#### **10.3.2.2 Site Visit 2012**

The Mineral Corporation inspected boreholes SADD0009, SADD0015, SADD0016, SADD0017, SADD0019, SADD0047 and SADD0049 and briefly visited the Belgian underground workings. This review has allowed The Mineral Corporation to gain an insight into the ore body host rocks, geometry, continuity and mineralisation as well as a better understanding of the oxide/sulphide (hematite/magnetite) boundary. The logging findings contained in Table 8 stand and have been updated where applicable.

## **11 SAMPLE PREPARATION, ANALYSES AND SECURITY**

### **11.1 Involvement of an employee, officer, director or associate of the issuer in sample preparation**

Kilo has informed The Mineral Corporation that no Kilo employee, officer, director or associate of the issuer carried out any sample preparation of samples from the exploration programme described herein on the KGL Somituri Project.

### **11.2 Sample Delivery Procedures**

All collected samples are retained in a secure locked shed until they are dispatched by company vehicle to the Kilo administrative office in Beni. A commercial freight forwarding agent transported the samples from Beni to ALS Chemex laboratory in Mwanza, Tanzania for sample preparation.

### 11.3 Sample Preparation

All sample preparation takes place at the ALS Chemex sample preparation facility in Mwanza, Tanzania. Standard procedures and quality controls are in place to ensure that samples are prepared in compliance with client requirements. The laboratory does not have a LIMS (digital Laboratory Management System) in place at present, but perusal of the laboratory records indicated that continual control of individual samples is maintained during the various preparation phases.

Kilo submitted adit, trench and diamond drill core samples to the sample preparation facility of ALS Chemex in Mwanza, Tanzania. The sample preparation procedures carried out by ALS Chemex consists of the following:

- The samples are sorted and compared with the packing documents;
- The samples are placed in metal trays and air dried; final drying is in an oven;
- The samples are weighed;
- The entire sample is crushed to a minimum of 70% passing a 2mm screen;
- The entire crushed sample is pulverised to 90% less than 75 µm; and
- The sample pulps are shipped by commercial courier to either ALS Chemex in Johannesburg, South Africa or to ALS Chemex in Vancouver, Canada for analysis.

**Table 8: Observations and comments on drill hole logging**

Drill Hole	Check Item	Comments
SADD004 SADD019	Depth control (markers) and measurements	Acceptable
	RQD (Rock quality designation)	Completed in the 2011 drilling programme
	Protocols	A written procedure for logging and sampling has been completed
	Lithological identification and description	Acceptable. Interim nomenclature being used e.g. <i>greywacke</i> , <i>tuffaceous metasediment</i> . Nomenclature to be updated following results of petrographic studies
	Classification of mappable lithological units	Currently only detailed descriptions are recorded. Unit identification will be done in the next logging phase
	Identification, description and structural analysis of veins and structural features	Currently acceptable general descriptions are being recorded. No core-bedding or core-structure angles are being recorded. This will be done in the next logging phase
	Identification and description of alteration	Alteration, specifically sericitisation, silicification and chloritisation, is being recorded. More attention to the recognition of type, styles and intensity of alteration is required in the next logging phase
	Identification and description of sulphides	Acceptable

	General comments	<ol style="list-style-type: none"> <li>1. Structural information may be lost in sampled zones. It is important to ensure that the half-core that is sampled is always taken on one side of the core, otherwise structural orientations will be incorrectly measured;</li> <li>2. In order to complete a structural study and understand the mineralisation, oriented core drilling should be employed;</li> <li>3. Due to time pressures, Kilo employed a "quick log" method during the initial drilling phase, resulting in the need to relog detailed aspects in a later logging phase. This relogging campaign has commenced.</li> </ol>
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#### 11.4 Sample Analysis

ALS Chemex in Mwanza, Tanzania, submitted pulps of adit, trench and diamond drill core samples to the ALS Chemex full service facilities in both Johannesburg, South Africa and in Vancouver, Canada. The sample analysis is carried out as follows:

- Multi-element suite of 34 elements is analysed by the low level ICP-OES method, ALS Assay method ME-ICP41;
- The gold content in adit, trench and diamond drill core pulps is determined on a 50g charge by the fire assay method with an Atomic Absorption ("AA") finish (ALS Assay method Au-AA24).
- In the fire assay with AA finish method, a prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents, as required, inquarted with 6mg of gold-free silver and cupelled to yield a precious metal bead (inquarting is the addition of gold-free silver). The bead is then digested in 0.5ml dilute nitric acid in a microwave oven. 0.5ml concentrated hydrochloric acid is added and the bead is further digested in the microwave oven at a lower power setting. The digested solution is cooled, diluted to a total volume of 4ml with demineralised water and analysed by atomic absorption spectrometry against matrix-matched standards.
- Gold is reported in ppm; and
- Adit, trench and diamond drill core pulps samples that returned gold values greater than 10ppm were re-assayed by the gravimetric method (ALS Assay method Au-AA23). In this method, a prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents in order to produce a lead button. The lead button containing the precious metal is cupelled (oxidation and melting of lead under high temperatures, which is absorbed into a porous cupel) to remove the lead. The remaining gold and silver bead is parted in dilute nitric acid, annealed and weighed as gold.

ALS Chemex in Johannesburg is accredited by SANAS, the South African National Accreditation System, according to the recognised international Standard ISO/IEC 17025:2005 for gold analysis by fire assay and either gravimetric, AAS or ICP-AES finish. The SANAS Facility Accreditation Number is T0387 and is valid to April 2013.

The ALS Chemex sample preparation facility in Mwanza is not currently accredited.

### 11.5 Analytical Quality Assurance and Control Results

In addition to the analytical quality assurance and control samples employed by ALS Chemex, Kilo, as the owner of the Prospect, inserted blanks and standards into the sampling streams. Duplicate trench samples (Section 11.5.2) were also inserted. To date, Kilo has not submitted repeat samples (pulp samples that had been analysed and are resubmitted to the original assay laboratory under new sample numbers) for analysis. The results reported herein are based on the current total database (2010 and 2011 data).

**Table 9: Summary of standards and blanks inserted by Kilo for the total adit, drill hole and trench samples**

Sample Type	No of Samples	No of Standards	No of Blanks	No of Duplicates	Total QC samples (%)
Adit	512	11	18	0	
Drill hole	6838	158	251	0	
Trench	818	22	36	43	
<b>Total</b>	<b>8168</b>	<b>191</b>	<b>305</b>	<b>43</b>	
<b>% of Field Samples</b>	<b>100</b>	<b>2.3</b>	<b>3.7</b>	<b>0.5</b>	<b>6.6</b>

Table 9 is a summary of standards and blanks inserted by Kilo for the adit, drill hole and trench samples. A total of 8 168 samples were assayed, for which an additional 191 standards and 305 blanks were inserted. Forty three duplicates were inserted in the trench sample streams. The total number of control samples represents 6.6% of all field samples that have been assayed.

It is the preferred method of The Mineral Corporation to analyse comparative results by error deviation percentage or mean deviation percentage charts for standard and duplicate analytical results respectively, as a sense of proportion is gained from the differences. The definitions are as follows:

$$\text{Error Deviation} = \frac{(X_{\text{analysis}} - X_{\text{standard}})}{X_{\text{standard}}}$$

By using this convention, negative deviations are noted as under-reporting and positive deviations are noted as over-reporting of results.

Due to the fact that a preferred or certified value is not known for duplicate samples, the Mean Deviation definition is:

$$\text{Mean Deviation} = \frac{(X_A - X_B)}{(\text{Mean}(X_A, X_B))}$$

### 11.5.1 Duplicate and Repeat Data

Laboratory repeats are sample pulps which have been re-analysed and are, therefore, a measure of the analytical error. Approximately 15% of laboratory repeats were checked. The % Mean Deviation was generally in the range -10% to +10%.

Apart from poor precision near the detection limits, the laboratories display acceptable analytical precision.

Kilo geologists duplicated 43 samples from trenches. These duplicates represent the sampling and analytical error and show a large range of errors between approximately -100% and +100%. This large error range is not a reflection of poor laboratory results or practices, but is considered to be the result of the high nugget effect of this style of gold mineralisation (Figure 8).

Duplicate samples inserted by ALS Chemex (Figure 9) show a typical spread of Mean Deviations towards the lower detection limit. Above abundances of 1.1ppm gold, the Mean Deviations show typical distributions for Au. Most of these Mean Deviations are within -10% to +10%. Abundances outside these limits are likely to be the result of nugget effects of Au. The results show an acceptable bias of -4.7%.

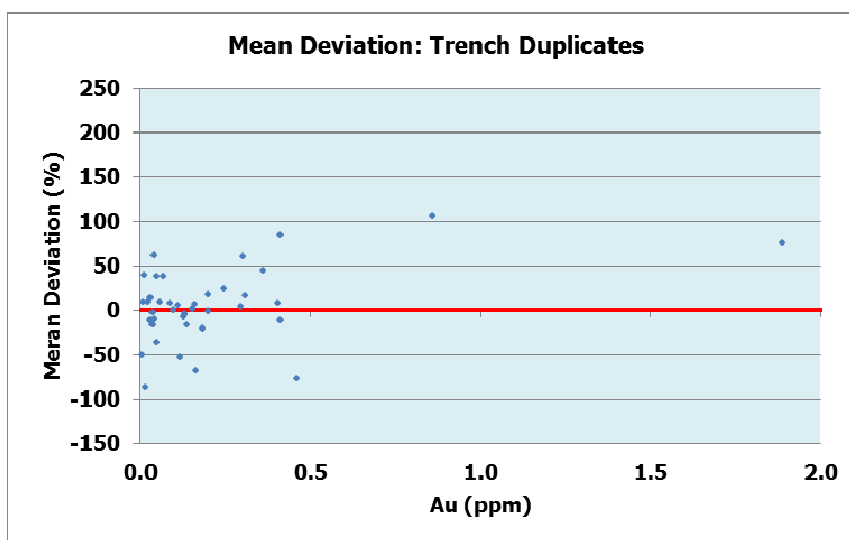


Figure 8: Percentage mean deviation for field duplicate data.



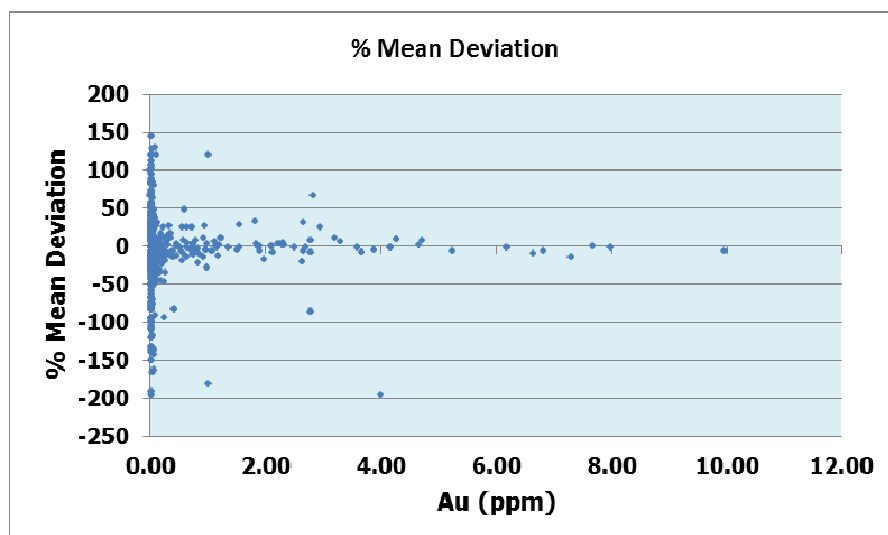


Figure 9: Analytical and sampling % Mean deviation for laboratory in-house repeats.

### 11.5.2 Certified Reference Material Data

Certified reference materials (standards or CRM's) were introduced by Kilo geologists into the sample streams and, internally, by ALS Chemex. The standards employed by Kilo are provided in Table 10. A certified value for Std 252, a standard supplied by Gannet Holdings (Pty) Ltd, of 0.058ppm was supplied to The Mineral Corporation by Kilo. However, no certificate was obtained, and standard deviation information was not available for Std 252. The remaining Standards in Table 2 are supplied by Rocklabs of New Zealand.

The Error Deviations from the expected mean value are expressed as a percentage using the formula as described in Section 11.5.2. Inspection of in-house laboratory QAQC results indicates that samples returned acceptable % Error Deviations.

Table 10: Information on standards inserted by Kilo

Std name	Au ppm	% Bias	Comments
OxE74	0.615	0.95	
OxJ64	2.366	0.54	
OxL63	5.865	-0.13	
OxN49	7.635	3.53	Inclusion of 2 spurious samples increases bias to 7.29
Std 252	0.058		

The Standards assay results are graphically shown in Figure 10 to Figure 14, which show that the majority of % Error deviations plot between -10% and +10%. Seven % Error Deviations returned values less than -20% or more than +20%. Although these results may indicate laboratory error, they are more likely to relate to incorrect sample numbering.

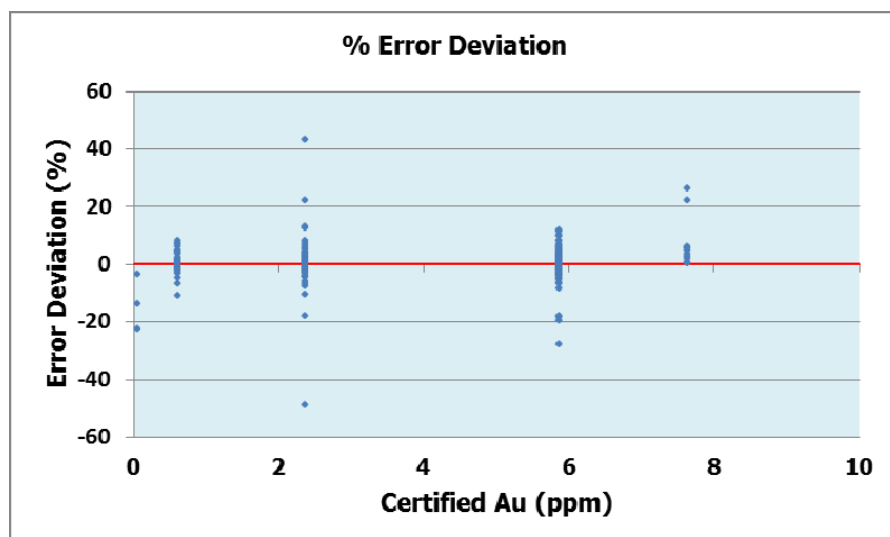


Figure 10: Summary of Error Deviations for all inserted Standards. Details for each Standard are shown in Figure 11 to Figure 14.

Determination of the mean of all % Error Deviations for each standard gives a measure of the overall bias. The bias for all standards is positive in all cases, indicating over-estimation of Au abundances. However, the bias is less than 1% for standards OxE74, OxE64 and OxE63. The limited data from OxE49 consistently plots between 0% and 6.22%, showing a bias of 3.5%, except for a single point, which plots at 22.2%. Three Std 252 Standards were submitted and the results, therefore, cannot be considered to be statistically valid.

Trend lines of Error Deviations (Figure 11 and Figure 12) indicate a general increase in bias with time. However, this trend is within acceptable limits, but Kilo should monitor future trends.

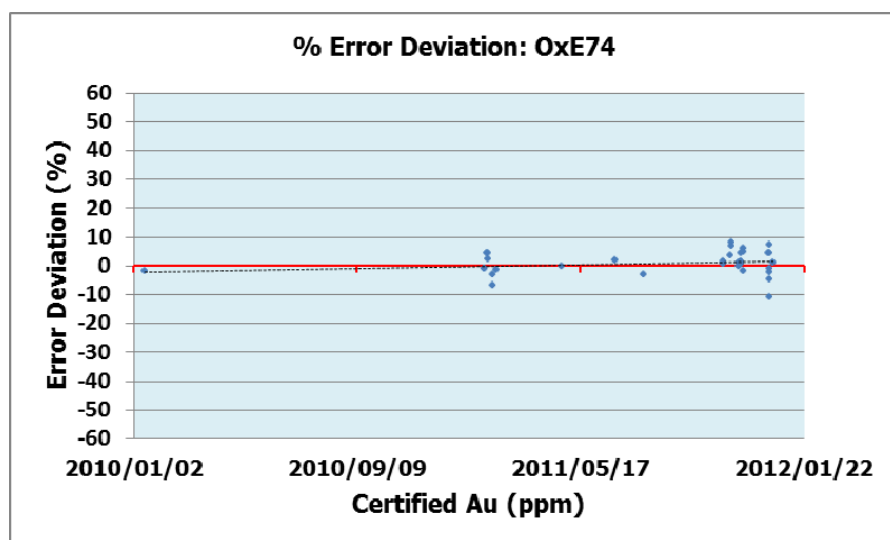


Figure 11: Error deviations for OxE74 plotted against the laboratory's finalised dates. The dashed line is a linear trend line. See text for discussion.

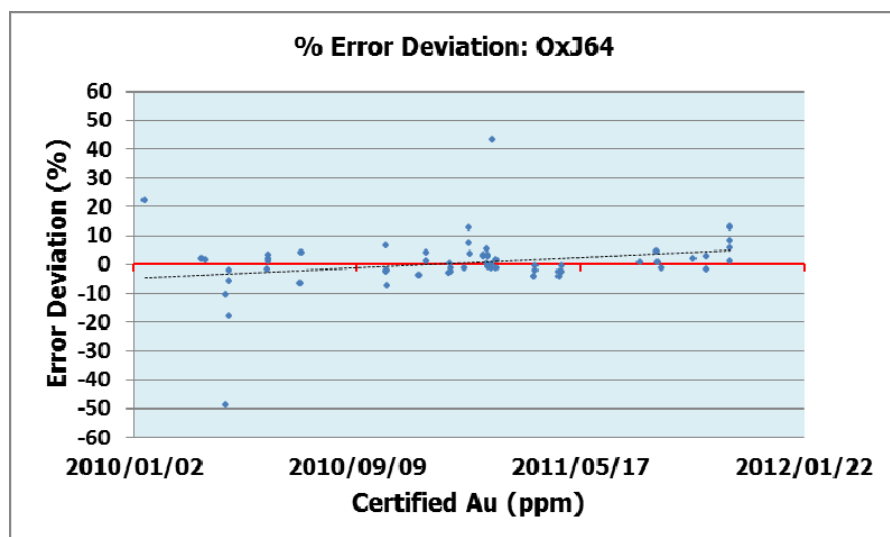


Figure 12: Error deviations for OxJ64 plotted against the laboratory's finalised dates. The dashed line is a linear trend line. See text for discussion. Note three spurious abundances.

ALS Chemex made use of 43 internationally accepted CRMs for their internal QC. The Error Deviations are shown in Figure 15, which indicates that the Error Deviations are generally acceptable. Below 2.4ppm, the spread of Error Deviations increases, with some samples plotting outside the -10% and +10% limits. However, the overall % Bias is 0.4% and the increased spread may be ascribed to analytical error as the Au abundance approaches the lower detection limit. Error Deviation results for fire assays are shown in Figure 16. One assay returned an Error Deviation of -29% and two samples returned Error Deviations of 11.4 and -11.9%. The results are acceptable.

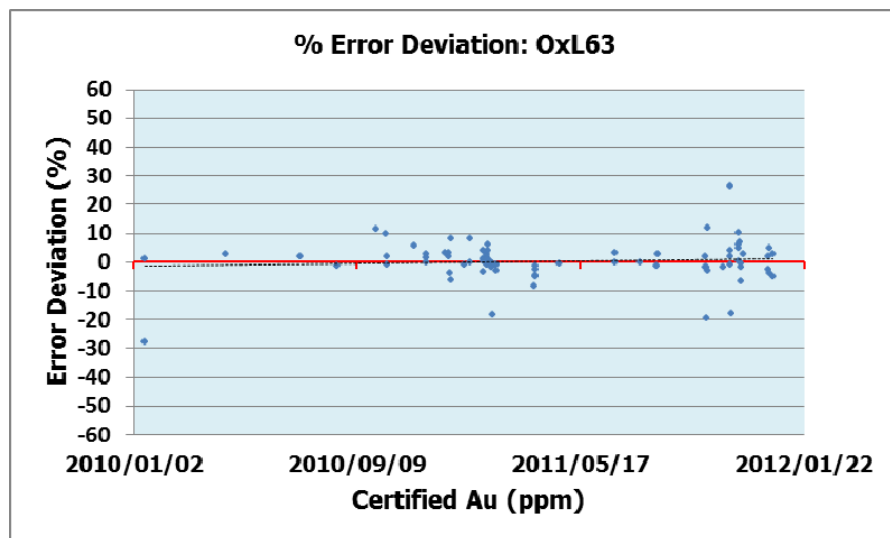


Figure 13: Error deviations for OxL63 plotted against the laboratory's finalised dates. The dashed line is a linear trend line. See text for discussion. Note two spurious abundances.

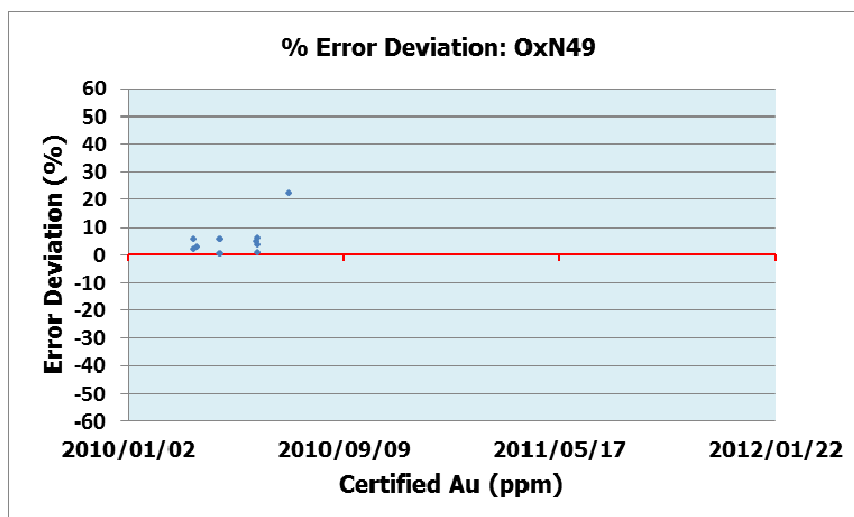


Figure 14: Error deviations for OxN49 plotted against the laboratory's finalised dates. The dashed line is a linear trend line. See text for discussion. Note two spurious abundances.

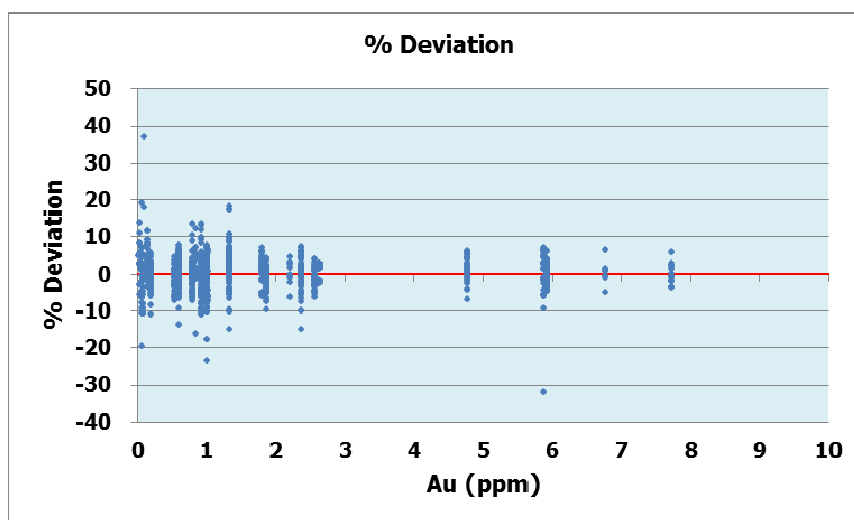


Figure 15: Error Deviation for Standards used by ALS Chemex for Au abundances less than 10ppm.

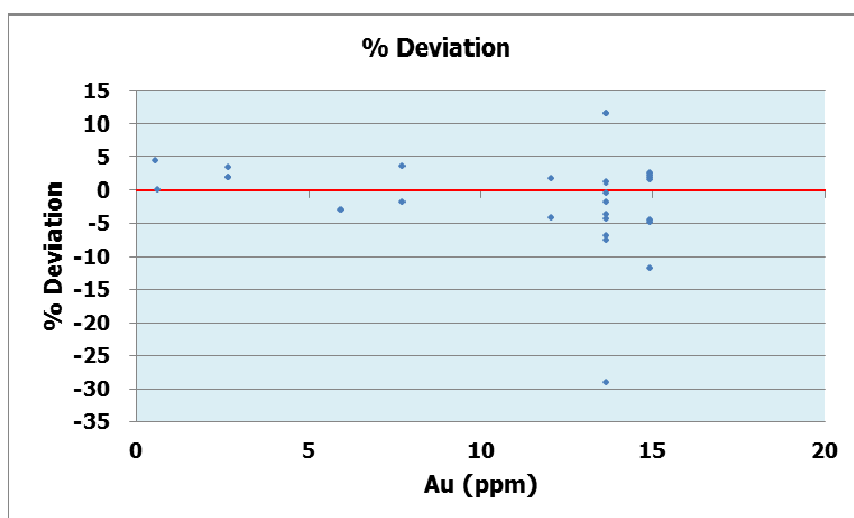


Figure 16: Error Deviation for Standards used by ALS Chemex for Au abundances using the fire assay method.

### 11.5.3 Blanks

Blanks of granite from the Mwanza area, understood to contain a gold abundance of less than 3ppb, were employed to obtain a measure of contamination in the sample preparation and in the laboratory. All Blanks inserted by ALS Chemex returned gold abundances within acceptable limits close to or below the lower detection limit (LDL) of 0.005ppm or 0.05ppm for gravimetric determinations.

Figure 17 shows the distribution of Au abundances in Blanks inserted by Kilo and indicates that a relatively high proportion returned gold abundances above the LDL. A total of 305 Blanks had been submitted in the sample streams and 9.5% of this total returned abundances above 0.01ppm. Comparison of the data obtained during 2010 and 2011 indicates that there has been little improvement between the two data sets.

Although the absolute degree of possible contamination is low, there is cause for concern that minor contamination may be taking place during the sample preparation stage.

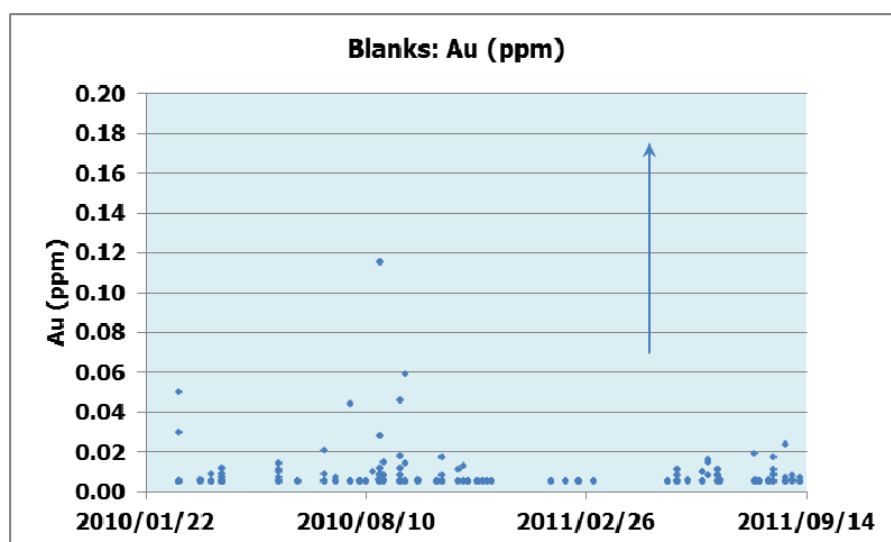


Figure 17: Distribution of Blank Au abundances with time. The arrow indicates a spurious abundance of 0.748ppm, not represented on this diagram.

### 11.6 Sample Database

Kilo maintains a comprehensive MS Excel (2007) database for the Adumbi Prospect. Data include, among others, drill hole/adit/trench numbers, collars surveys and azimuths, name of the logger, sample type and number, recoveries, lithological, mineralogical, mineralisation and alteration data, gold abundance and standard and blank information. The Mineral Corporation has inspected the level of detail and it is considered adequate for an operation during the current exploration phase. Cross checks to determine whether transcription of data has occurred was undertaken. No material errors were evident.

### 11.7 Overall Adequacy Statement

Based on the sample preparation techniques observed at the ALS Chemex preparation facility, the security protocols described by Kilo geologists and the analytical procedures adopted by the ALS Chemex Laboratory, Johannesburg, The Mineral Corporation is satisfied that the protocols and procedures have been followed to acceptable levels for the use in Mineral Resource estimation.

## 12 DATA VERIFICATION

### 12.1 Quality Control and Data Verification Procedures

The Mineral Corporation has undertaken the following steps to verify the validity of the data used in this Mineral Resource evaluation.

#### 12.1.1 Site Visit 2010

One Qualified Person, an employee of The Mineral Corporation, visited the area from 6 to 8 December 2010, obtained information on logistics and the geology of the Adumbi-Kitenge-Manzako area, and assessed the exploration methods and types and quality of information being obtained with regard to the geology, artisanal activity and borehole logging.

Three drill sites were visited where drilling operations were in progress. Drill core was stacked in core trays on site and the core was inspected for recovery, level of cleanliness and correctness of the depth markers. The co-ordinates for four collar positions were checked and compared with the information supplied by Kilo. Within the errors expected for hand-held GPS equipment, position data is acceptable.

Three boreholes were examined and checked for logging detail and accuracy. Current logging is considered by The Mineral Corporation to be a rapid method, which will be followed by more detail. To date, detailed structural relationships have yet to be determined. Alteration logging has been completed to a limited level. The general lithological logs and recording of mineralisation are acceptable.

Following the Adumbi visit, the ALS Chemex sample preparation facility in Mwanza was inspected and is reported in Section 11.3.

#### 12.1.2 Site Visit 2012

David Young visited the project in January 2012 for two days and focused his attention on understanding the geology of the ore body, locating boreholes and their orientation and core recovery through the ore body. Boreholes on Sections 4, 12, 17 and 20 (Appendix 2) were viewed and superficially logged for mineralisation, oxide/sulphide depth and gross geology; these results are contained in the following text.



### 12.1.2.1 Ore Body Geology

The mineralisation/alteration can consist of pyrite, pyrrhotite, arsenopyrite and low abundances of chalcopyrite with high levels of silica. Carbonate alteration was also noted. The pyrrhotite and pyrite mineralisation can form into separate zones on a macroscopic scale.

The underground exposure of the ore mined by the Belgians indicates that it is oriented northwest-southeast (310°) with dips ranging from 75° to 85° to the northeast. It would appear that only a core (high grade?) zone was mined with some flanking ore body (quartz-hematite) left *in situ*. Quartz veining displaying dilational growth textures oriented along the ore body strike was noted. Numerous thin (up to 1cm wide) quartz veins at a slightly flatter dip to the northeast (65°) were noted in the 'footwall' metasediments.

### 12.1.2.2 Oxide/Sulphide Surface

In all greenstone hosted gold projects, it is desirable to have some form of understanding of the oxide/sulphide surface as it can impact on the gold processing recoveries and the sources of suitable samples for metallurgical test work.

Due to the orientation of the drill holes (inclined) with respect to the ore body (vertical), the actual location of the oxide/sulphide contact has to usually be interpreted from the section data. However, the ore body has also undergone alteration from magnetite to hematite in the weathering process that was noted in some cases to be associated with the sulphide to oxide location. Thus, the magnetite to hematite location that can be drawn from many of the drill hole logs can be employed in the construction of the sulphide to oxide surface.

### 12.1.2.3 Borehole Locations

Thirteen drill holes, mostly from the sections mentioned in Section 16.1.2, were located in the field and their location measured with a hand held GPS. The dip of the drill hole collar and direction of dip (azimuth) were measured with a clinometers and compass respectively; the results are contained in Table 11. Only two drill holes have possible material errors in their location (SADD005 and SADD011) but these two did not have identification markings on the collars and were only advised by Kilo as being these identities. The orientation results are deemed acceptable based in the errors associated with the method of measurement.

**Table 11: Drill hole location comparison**

Kilo Data					The Mineral Corporation Measurements				Differences			
BHID	X Coord	Y Coord	Azimuth	Dip	X Coord	Y Coord	Azimuth	Dip	Δ X Coord	Δ Y Coord	Δ Azimuth	Δ Dip
SADD0009	594895	192755	40	-50	594895	192752			0	3		
SADD0005	595014	192606	40	-50	594983	192610			31	-4		
SADD0047	594996	192871	220	-50	594999	192872	216	-52	-3	-1	4	2
SADD0046	595136	192742	220	-50	595138	192748	220	-52	-2	-6	0	2
SADD0048	595138	192746	220	-50	595138	192748	220	-50	0	-2	0	0
SADD0036	595176	192590	220	-50	595176	192595	207	-53	0	-5	13	3
SADD0035	595183	192610	220	-50	595185	192613	203	-52	-2	-3	17	2
SADD0037	595286	192554	220	-50	595280	192551	205	-49	6	3	15	-1
SADD0016	595306	192521	220	-60	595303	192520	215	-52	3	1	5	-8
SADD0015	595346	192553	220	-50	595353	192555	214	-52	-7	-2	6	2
SADD0018	595382	192596	220	-50	595382	192593			0	3		
SADD0017	595420	192642	220	-50	595422	192644	210	-52	-2	-2	10	2
SADD0011	595573	192087	40	-50	595588	192101	20	-54	-15	-14	20	4
Average Differences									1	-2	9	1

#### 12.1.2.4 Core Recovery

Selected core from drill holes SADD0016, SADD0017 and SADD0019 was scrutinised and the actual remaining half core between core marker blocks was measured. The results of this analysis is contained in Table 12. The recoveries above 100% would suggest that the core marker blocks have been misplaced after the core was cut and sampled. However, the long runs of over 20m have overall recoveries of 100%.

#### 12.1.3 Field Logs/Electronic Log

Field sheets from 21 boreholes were inspected by The Mineral Corporation. The borehole logging and sampling data was checked against the Excel database that was provided to The Mineral Corporation. There was good correspondence between the intervals noted in the field logs and those entered in the electronic database.

#### 12.2 Sample Database/Laboratory Certificate

A random sample of analytical results from 10 boreholes within the electronic borehole logs were cross checked with gold grade as reported in the laboratory certificates. No errors were encountered in this process.

**Table 12: Core Recovery Analysis Results**

Borehole	From (m)	To (m)	Length (m)	Measured Length (m)	Recovery (%)
SADD0017	289.70	292.70	3.00	2.96	98.67%
SADD0017	292.70	295.70	3.00	3.02	100.67%
SADD0017	295.70	298.70	3.00	3.03	101.00%
SADD0017	298.70	301.70	3.00	2.98	99.17%
SADD0017	301.70	304.70	3.00	2.92	97.33%
SADD0017	322.70	325.70	3.00	3.03	101.00%
SADD0017	325.70	328.70	3.00	2.90	96.67%
SADD0017	328.70	331.70	3.00	3.13	104.33%
SADD0017	331.70	334.70	3.00	3.06	102.00%
		Totals	27.00	27.03	
		Recovery	100.09%		
SADD0019	235.70	238.70	3.00	2.98	99.33%
SADD0019	238.70	241.70	3.00	2.97	99.00%
SADD0019	241.70	244.70	3.00	3.01	100.33%
SADD0019	244.70	247.70	3.00	2.94	98.00%
SADD0019	247.70	250.70	3.00	2.98	99.33%
SADD0019	250.70	253.70	3.00	3.02	100.67%
SADD0019	253.70	256.70	3.00	2.94	98.00%
		Totals	21.00	20.84	
		Recovery	99.24%		
SADD016	88.70	91.70	3.00	4.94	164.67%
SADD016	91.70	94.70	3.00	1.20	40.00%
SADD016	94.70	97.70	3.00	2.95	98.33%
SADD016	97.70	100.70	3.00	3.10	103.33%
		Totals	12.00	12.19	
		Recovery	101.58%		
				<b>Average</b>	<b>100.09%</b>
				<b>Max</b>	<b>104.33%</b>
				<b>Min</b>	<b>96.67%</b>

### 12.3 Independent Sample Analysis

The Mineral Corporation resubmitted four sample pulps of samples prepared by ALS Chemex in Mwanza, and previously assayed samples, to the ALS Chemex laboratory in Johannesburg as unknown samples. The comparative results are summarised in Table 13.

**Table 13: Independent Sampling - Mean Deviation for Repeat samples and percentage Error Deviation for inserted Standard**

TMC Sample No	Kilo Sample No	TMC Au (g/t)	Kilo Au (g/t)	% Mean Deviation	% Error Deviation
L2296	6579	1.08	1.625	40.30	-
L2297	6597	3.47	3.97	13.44	-
L2298	6585	2.94	3.62	20.73	-
L2299	6590	7.53	7.67	1.84	-
L2300	AMIS0044	2.96	2.90	-	-2.07

Note: L2300/AMIS0044 is a reference material Standard inserted by The Mineral Corporation (TMC)

Results from Table 13 indicate that the Mean Error Deviations are relatively high, whereas the Error Deviation for the standard (L2300) is well within acceptable limits. It is normal for Repeats data to vary considerably due to the nugget effect of gold, and The Mineral Corporation is satisfied that the ALS Chemex preparation laboratory in Mwanza complies with all relevant procedures for the sample preparation methods. Kilo may have to consider prescribing a finer mill product by the Mwanza laboratory, which may reduce the nugget effect. The current specification for the laboratory is for 85% of sample material to be finer than 75µm.

#### **12.3.1 Qualified Person's Statement**

The Mineral Corporation and the Qualified Person has independently processed the data presented by Kilo and their agents in verifying the data employed in the Mineral Resource estimates.

#### **12.3.2 Limitations of Verification**

Due to the relatively poor duplicate pulp analytical results obtained from The Mineral Corporation visit (Table 13), the minor possible sample preparation contamination and chain of custody issues, the data is considered only adequate for the reporting of Inferred and/or Indicated Mineral Resources.

#### **12.3.3 Failure to Verify**

Not applicable.

### **13 MINERAL PROCESSING AND METALLURGICAL TESTING**

Wardell Armstrong has completed certain metallurgical test-work on quarter core samples from a seven boreholes that represent material from the modelled oxide and sulphide zones of the Adumbi Prospect over a strike length of 650m taken from the centre of the ore body. The focus of this work has been to broadly understand the recovery of gold by gravity separation and then the recovery of gold from the gravity tailings by cyanide leaching as opposed to a conventional cyanide leach on material milled to a  $d_{80}$  of 100µm. To obtain the required grind Wardell Armstrong had to complete preliminary Bond Ball Mill Work indices in order to generate grind calibration curves specific to each type of ore. This work will be useful in mill sizing at the scoping study level. The results are contained in Table 14 and Table 15.

**Table 14: Wardell Armstrong metallurgical test work results – gold recovery**

Wardell Armstrong Composite No	Location wrt Oxide/Transition Model Contact	Location wrt Transition/Sulphide Model Contact	Gravity Testing			Cyanidation Testing
			Gravity Separation (% Recovery)	Tailings Leach (% Recovery)	Combined (% Recovery)	Conventional Leach
Oxide 1	0m to 100m above	N/A	46.1	46.2	92.2	80.6
Oxide 2	60m above to 75m above	N/A	33.7	60.6	94.3	86.8
Oxide 3	50m above to 80m above	N/A	32.8	59.4	92.2	90.0
Oxide Averages	0m to 100m above	N/A	37.5	55.4	92.9	85.8
Sulphide 1	N/A	130m below to 140m below	5.6	37.3	42.9	38.2
Sulphide 2	N/A	15m below to 50m below	35.0	57.5	92.5	93.8
Sulphide 3	N/A	0m to 50m below	36.6	59.6	96.2	87.3
Sulphide Span	N/A	0m to 140m below	25.7	51.5	77.2	73.1

**Table 15: Wardell Armstrong metallurgical test work results – Bond Ball Mill Work Indices**

Material	Bond Ball Mill Work Indices (kWhr/tonne)
Oxide	10.46
Sulphide	11.76

Due to the volume of the material investigated, these results can only be considered as indicative and not definitive. The good recoveries reported from two of the three sulphide cores indicates that the refractory gold component that may be present is not ubiquitous below the transition zone.

## 14 MINERAL RESOURCE ESTIMATES

### 14.1 Borehole Database

The borehole database was provided to The Mineral Corporation in an Excel spreadsheet. The borehole database comprised collar, survey, lithology and assay information.

Three validation exercises have been carried out on comparing the Excel database with the raw field data. A review of the accuracy of the lithological data was carried out on site by Johan Krynauw, and the results are presented in Section 12.1.3.

A further review of the assay table with the raw analytical certificates was carried out by The Mineral Corporation and the results are presented in Section 12.2.

Drill hole collar co-ordinates have been checked in the field as documented in Section 12.1.2.3.

Finally, a cursory examination of the down hole survey data revealed that the azimuth data varied widely in places from the intended direction of drilling. As these variations typically occurred close to the BIF intersections and, as the azimuth trends returned to normal towards the base of the borehole, it was interpreted that the survey data was compromised in places by the magnetic properties of the BIF.

The Mineral Corporation evaluated the data for each borehole individually discarding survey records where the variation between the azimuth and the intended drilling direction was greater than 30° and where a visual inspection of the data provided evidence that the azimuth readings had been compromised due to the presence of magnetic rock formations (BIF).

The correction of 2°E was applied to convert the Magnetic North azimuths to UTM North azimuths.

The Excel database was imported into Datamine Studio Version 3.19 (Datamine) for further processing. Datamine's borehole validation tools were employed to check for sample overlaps and duplicates. Sample overlap errors were corrected by Kilo and returned to The Mineral Corporation.

As the borehole collars are surveyed by hand-held GPS, the elevation of borehole collar co-ordinates were corrected by projecting them vertically to the topographic surface.

A summary of the additional data received since Report 690 is provided in Table 16.

**Table 16: Comparison of data used for Report 690 and Report 775**

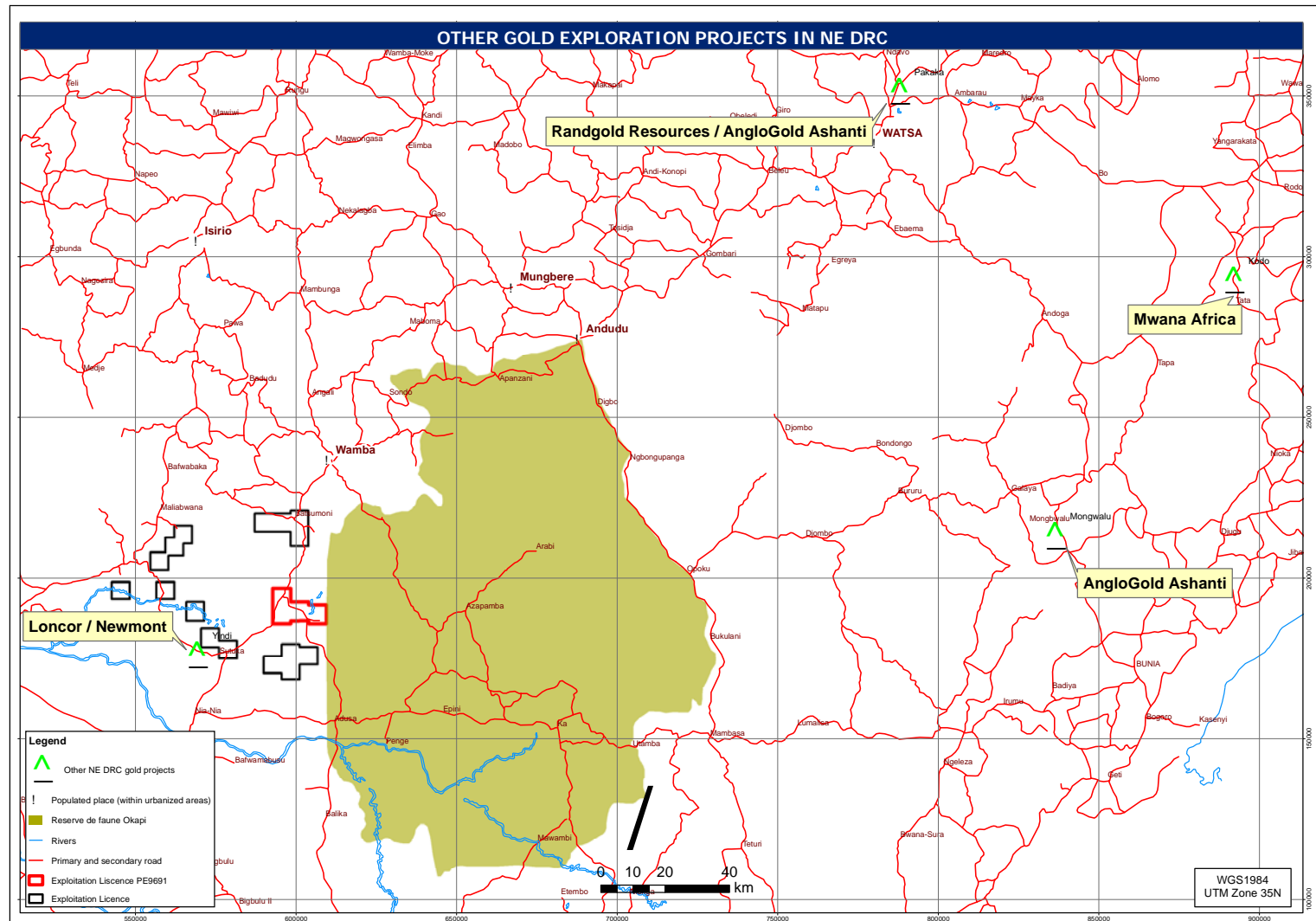
<b>Data</b>	<b>Report 690</b>	<b>Report 775</b>
Trenches	13	19
Adits	4	4
Boreholes	31	53
Sampling records	5462	9105

## **14.1 Exploration Data Analysis**

### **14.1.1 Identification of mineralised zone**

Mineralisation is broadly identified as being hosted within the BIF unit. Guided by the structural model for the BIF, The Mineral Corporation identified three zones of mineralisation, through a combination of cross-section and plan interpretation assisted by the generation of three dimension grade isoshells. These mineralised zones are interpreted to be oriented parallel to the BIF and to also have a steep-to-vertical dip.

The three zones are illustrated in Figure 19. It is evident that gold mineralisation is found outside of these three mineralised zones, and thus exploratory data analysis was undertaken on a fourth "zone", that being the interburden material between the mineralised zones.



**Figure 18: Other gold exploration projects in NE DRC**



### 14.1.2 Composites

In general, analytical samples were taken at 1m intervals down the borehole.

The Mineral Corporation interprets that the gold tenor trends are most likely to be parallel to the contacts of the mineralised zones, and hence to the BIF contacts (i.e. vertical and in a plane which lies parallel to the strike of the BIF unit).

When viewed in cross-section which is aligned normal to the strike of the mineralised zones, the drilling undertaken to date intersects the mineralised zones at variable angles to the dip of the unit. As such, the 1m samples represent different apparent thicknesses relative to the dip. The Mineral Corporation corrected for this apparent thickness by measuring the intersection angle with the mineralised zones and taking a variable composite length in each borehole so that the resulting composites have the same support relative to the dip of the ore body. This is illustrated schematically in Figure 20.

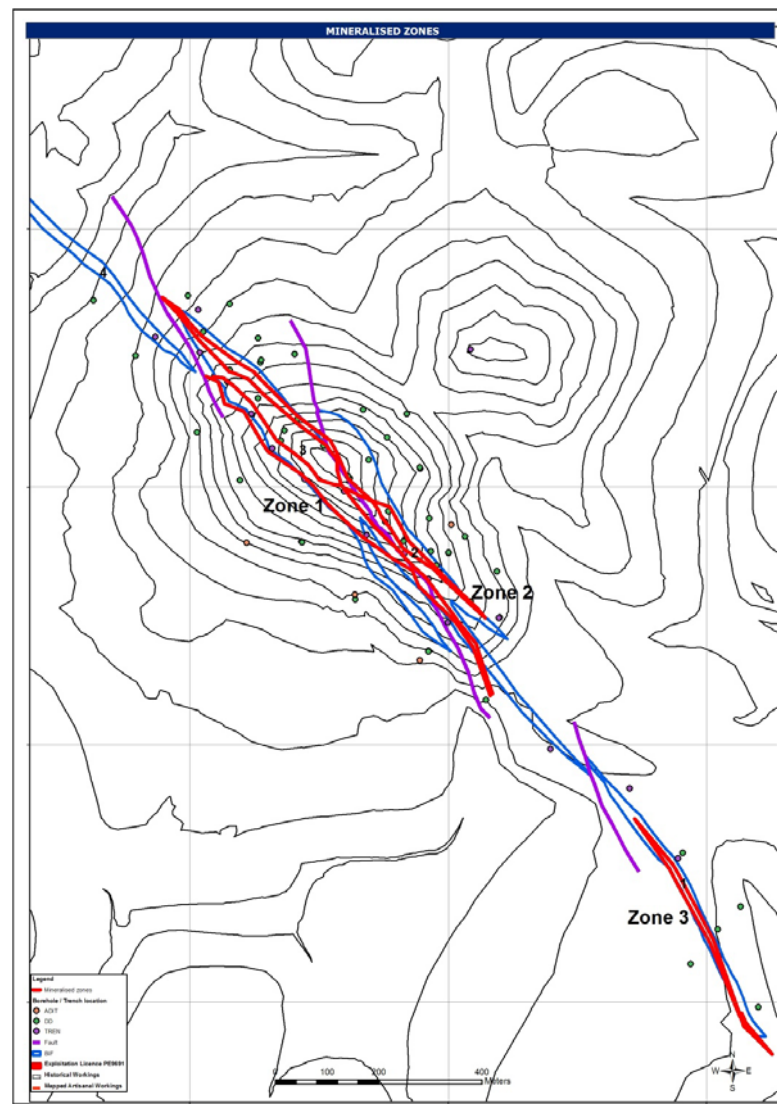


Figure 19: Interpreted location of mineralised zones (at 650mamsl)

The resulting composite dataset is thus considered to represent samples with equal true thickness of 2.5m. This dataset was used for statistical and geostatistical analysis.

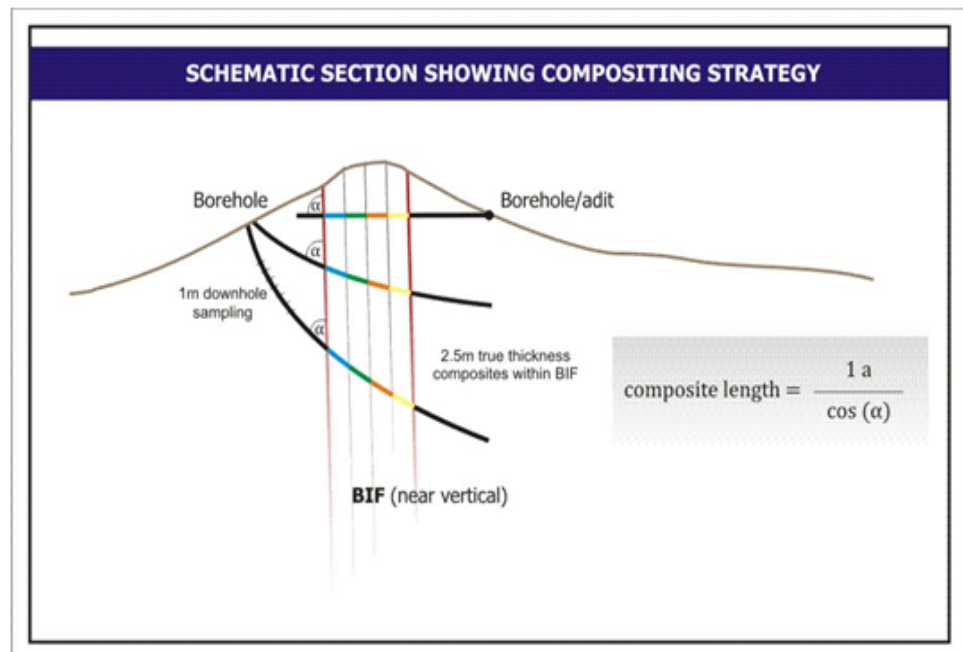


Figure 20: Schematic section showing compositing strategy

#### 14.1.3 Distribution

The distribution of the true thickness composites is skewed in all zones, but particularly in Zone 0, the interburden. The distribution of gold within these zones is shown in histograms in Figure 21. The mean gold grade for the four zones is 0.22g/t, 2.12g/t, 2.75g/t and 1.16g/t respectively.

It is noted that impact of isolating the individual mineralised zones (Zones 1 – 3) is that the data is much less skewed than for Report 690 where the skewed distribution of the data and the difficulty in discriminating between mineralised and un-mineralised zones within the BIF caused The Mineral Corporation to elect to employ Indicator Kriging as the primary estimation tool. In this case, The Mineral Corporation was able to employ Ordinary Kriging (OK) in normal space.

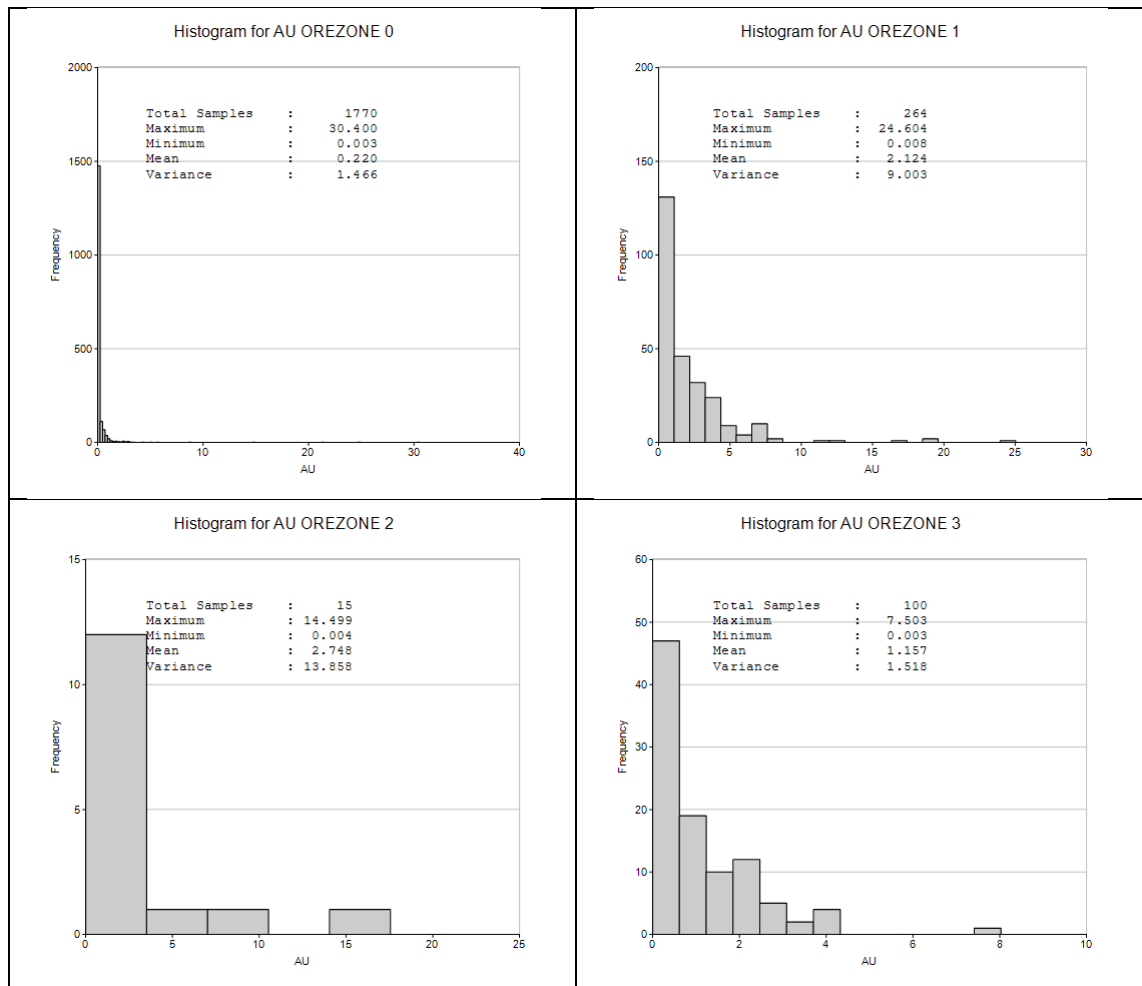


Figure 21: Histogram of gold data for each Zones 0 - 3

## 14.2 Variogram Analysis

### 14.2.1 Rotation

The Mineral Corporation analysed 3D variograms of the true thickness composites within each zone. In line with the compositing strategy, which assumed that the mineralisation trends would be sub-parallel to the strike of the mineralised zones and orientated vertically, all 3D variography was carried out in a rotated co-ordinate system. The rotated co-ordinate system's Y axis was oriented along strike (45° west of north) then rotated 90° about the Y axis onto a vertical plane.

### 14.2.2 Anisotropy

Within the rotated co-ordinate system (Section 14.2.1), various angles of anisotropy were investigated. It is to be expected that grade continuity should be longest within the plane of the BIF and shortest orthogonal to the plane of the BIF. Furthermore, within the plane of the BIF, it is to be expected that grade continuity is longest in a vertical sense and shortest in a horizontal sense based on a vertically moving hydrothermal gold mineralisation fluid genesis.

### 14.2.3 Variograms

Zones 1 and 3, which are oriented parallel to each other and have similar grade distributions and structure, were analysed as one zone. A well-structured down hole variogram was obtained which gave an indication of the nugget effect (top left in Figure 22) and this nugget effect was used to assist in modelling the anisotropic structure in the vertical (red), along-strike (yellow) and orthogonal to strike (blue) directions. The anticipated anisotropy in Section 14.2.2 was supported.

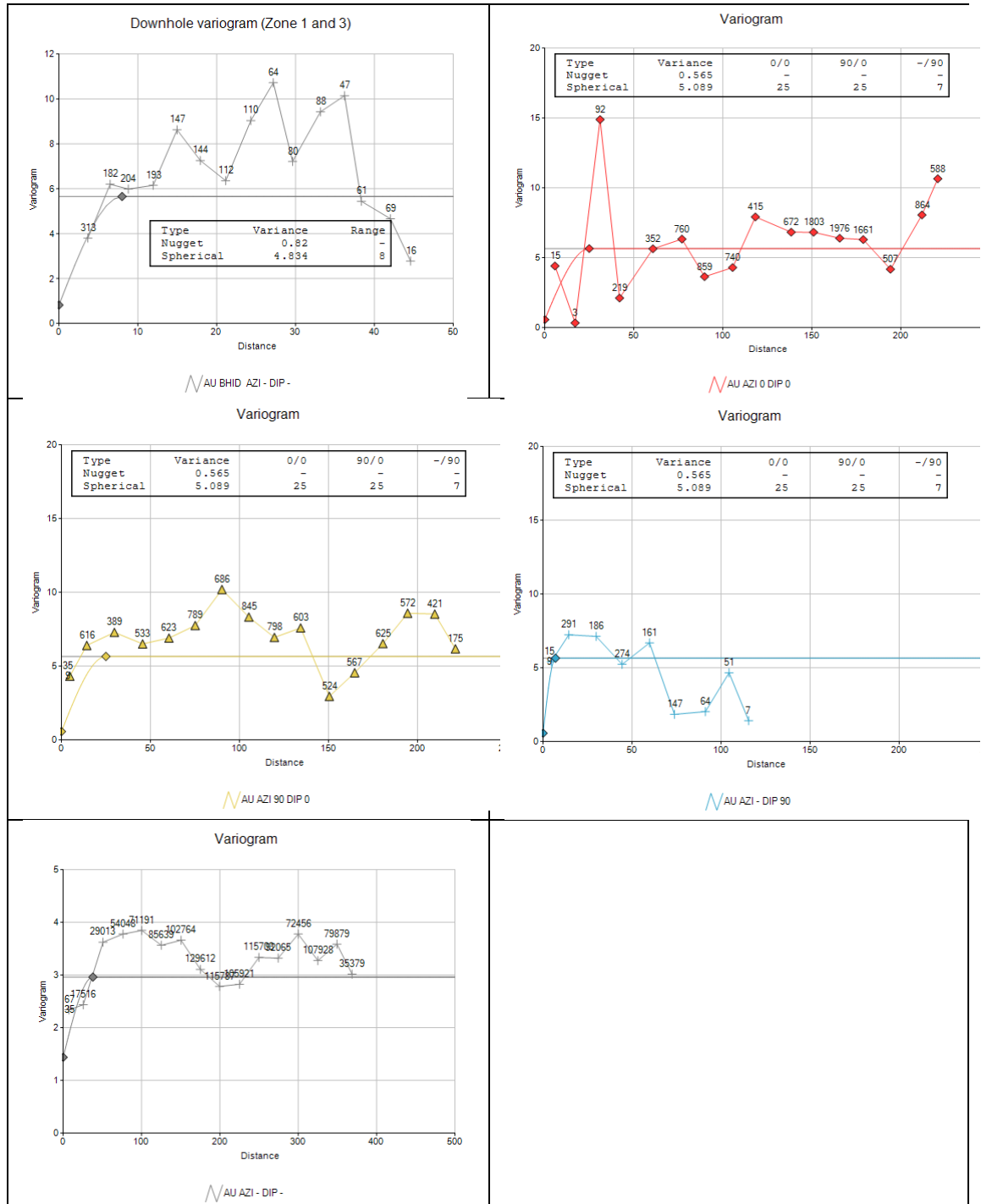


Figure 22: Variograms for Zone 1 / 3 and Zone 0

Zone 2 had limited data and no structure was obtained in any orientation. For Zone 0, an omni-directional variogram was modelled (bottom left in Figure 22). A summary of the variogram parameters applied is provided in Table 17.

**Table 17: Modelled variograms (in rotated co-ordinates)**

Zone	Nugget	Range 1 (X)	Range 1 (Y)	Range 1 (Z)	Spatial Variance
1 / 3	0.565	25	25	7	5.089
0	1.439	38	38	38	1.524

### 14.3 Estimation Methodology and Parameters

#### 14.3.1 Estimation Parameters

OK was applied to blocks of 20m x 20m x 5m in the rotated co-ordinate system. This block model was rotated in the same way as described in Section 14.2.1 and therefore the blocks were of equal length (20m) in the plane of the BIF and shortened (5m) orthogonal to the plane of the BIF.

The grade for each grade group was estimated from the 2.5m true thickness composite data as described in Section 14.1.2.

#### 14.3.2 Search Parameters

A three stage search strategy was implemented. The search criteria were constricted in the direction orthogonal to the plane of the BIF, as the conceptual geological model suggests and as supported by the variography for Zones 1 and 3. Table 18 contains the search parameters used for kriging. Search parameters for Zone 2 utilised the Zone 1 / 3 variogram and search parameters.

**Table 18: OK search parameters (in rotated co-ordinate system)**

Zone	1 <sup>st</sup> Search Range (X)	1 <sup>st</sup> Search Range (Y)	1 <sup>st</sup> Search Range (Z)	Min Samples	Min Samples	Expansion factor for 2 <sup>nd</sup> Search	Expansion factor for 3 <sup>rd</sup> Search
1, 2 & 3	25	25	7	5	25	2	10
0	40	40	7	5	25	2	

#### 14.3.3 Block estimates

A set of cross-section and plans through the block model are included as Appendix 2 and Appendix 3.

### 14.4 Model Constraints

#### 14.4.1 Surface Topography

The block model was constrained by the topography as supplied by Kilo. This topographic surface was sourced from 2m contours which were derived from the high resolution WorldView 2 satellite imagery that was supplied (copyright held by Digital Globe).

The Mineral Corporation considers the accuracy of the topography to be acceptable for the level of confidence in the Mineral Resource estimates.

#### **14.4.2 Depth of Drilling**

The block model was constrained at depth to 400mamsl. This represents a level which is between 30m and 50m below the last borehole intersection point with the BIF and the deepest point below surface is approximately 350m. The Mineral Corporation considers the extrapolation down-dip extent to be of limited risk in the estimates given the likely continuity of the BIF in a vertical sense, and given the extent of the range of the variograms parallel to the plane of the BIF.

### **14.5 Losses**

#### **14.5.1 Geological losses**

As mineralisation is effectively fault hosted and as the mineralisation between Zones 1 – 3 was modelled by way of the interburden zone, The Mineral Corporation has not found it necessary to account for geological losses due to faulting. A tonnage loss of 1.5% has been applied to account for the impact on post-mineralisation intrusives. The number was estimated from the total amount of post-intrusive mineralisation drilled as a proportion of total drilling.

#### **14.5.2 Historical mining losses**

The excavations mined by the previous (Belgian) operators of the mine have not been accurately surveyed. Their potential impact on the Mineral Resources has been estimated by digitizing and geo-referencing the location of the historical workings as shown on plans sourced from the RMCA (RMCA, 2007). The georeferenced workings were modified to ensure that they fell within the current interpreted mineralized zones.

An estimated width of 3.8m, based on The Mineral Corporation's observations underground, was applied to build a wireframe from the digitized plans. Blocks within this wireframe were removed from the model prior to estimation. The tonnage removed from the model was approximately 250 000t.

### **14.6 Density Determinations**

Results from only one borehole were available to estimate density. An analysis of the results of this borehole, for which density measurements were obtained on a metre by metre basis by means of the water immersion method, showed no discernable difference between mineralised BIF and un-mineralised BIF and only a very small difference between the BIF and other lithologies.

A density of 3.04t/m<sup>3</sup> was applied to Zone 0 and a density of 3.09t/m<sup>3</sup> was applied to Zone 1 to Zone 3.

The Mineral Corporation considers the lack of reliable density information to be a limitation in the Mineral Resource estimates and this is reflected in the restriction of the Mineral Resources to the Inferred category.

#### 14.7 Determination of oxide / sulphide transition

Kilo has not undertaken detailed work on the oxide/sulphide transition at this stage.

The Mineral Corporation has independently estimated this transition by utilising the change in hematite to magnetite mineralisation in the BIF as a proxy for the oxide/sulphide contact. This relationship was observed to be valid in the boreholes logged by David Young in 2012 (Section 12.1.2). The depth below surface of this contact in each borehole or section line was used as a data point to inform a kriged estimate of the depth below surface of the transition surface. The upper and lower 90% confidence interval, based on the variability of the observations in each borehole, was then applied on either side of the estimated surface to build a transition zone. The transition zone on this basis is 33m thick.

Material above this transition zone was designated as being oxide, and material below this zone was designated as being sulphide.

#### 14.8 Mineral Resource Classification

The Mineral Resources at this stage can only be classified as Inferred Mineral Resources. The factors which influence the categorization are listed below:

- **Quantity:** The drilling density is sufficient for a recognisable, mineralised geological unit to be identified and its continuity reasonably assumed between boreholes. The quantity estimate may be considered to be sufficient for an Indicated Mineral Resource.
- **Tonnage:** The tonnage can only be estimated on the basis of an assumed density. The tonnage estimate is therefore based on limited information and can only inform an Inferred Mineral Resource
- **Quality:** The grade estimate within the mineralised zone is limited in confidence as there is not yet a meaningful agreement between the geostatistical properties of the mineralised unit and the conceptual geological model. The Mineral Corporation considers the global grade estimates to be robust, but the confidence in the local estimates is insufficient to allow the application of technical and economic parameters to support mine planning, and hence can only be classified as an Inferred Mineral Resource. The confidence in the local grade estimates is likely to increase as an understanding of the lithological and grade characteristics within the mineralised zone is incorporated into the model.
- **Depletion:** The quantity of the Mineral Resource estimates may also be affected by the amount of mineralisation which has been removed by historic workings. The Mineral Corporation has attempted to account for this volumetrically by modelling and removing a volume which represents the historic workings. However, the accuracy and effectiveness of this methodology is of concern, and limits the classification to Inferred.



## 14.9 Mineral Resource Statement

The Inferred Mineral Resources at a 0.5 g/t cut-off are presented in Table 19.

**Table 19: Mineral Resources (0.5 g/t cut-off)**

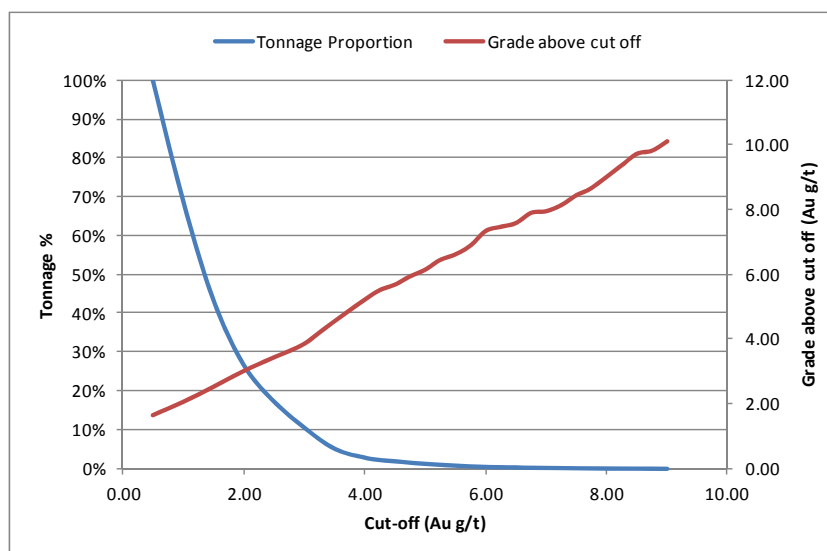
Material Type	Tonne above cut off	Grade above cut off (g/t Au)	Contained Au above cut-off (Million oz)
Oxide	12 310 549	1.61	0.64
Transition	4 763 163	1.66	0.25
Sulphide	18 581 569	1.63	0.98
Total	35 655 280	1.63	1.87

### 14.9.1 Assumptions regarding economic extraction

At a marginal operating cost of approximately US\$20/tonne milled, a gold price of US\$1600/oz, a gold recovery of 80% and dilution of 2.5% at nil gold content, a marginal cut-off grade of approximately 0.5g/t results. It is not known if any environmental, permitting, legal, taxation, title, socio-economic, marketing, political or other issues may impact materially on the Mineral Resources.

### 14.9.2 Grade / tonnage characteristics

A grade / tonnage curve for the block model of the deposit is presented in Figure 23 and is summarized in Table 20.



**Figure 23: Grade / tonnage characteristics of the block model**

Table 20: Summary of grade / tonnage characteristics

Cut off (g/t Au)	Tonne above cut off	Grade above cut off (g/t Au)	Tonnage Proportion above cut-off	Million ounces Au above cut-off
0.00	126 651 303	0.55	355%	2.23
0.50	35 655 280	1.63	100%	1.87
1.00	24 604 479	2.04	69%	1.61
1.50	15 507 918	2.50	43%	1.25
2.00	9 552 756	2.99	27%	0.92
2.50	6 193 607	3.41	17%	0.68
3.00	3 805 155	3.83	11%	0.47

Table 20 does not imply the classification of Mineral Resources at a zero cut-off, and is provided for information purposes only.

## 15 MINERAL RESERVE ESTIMATES

Not Applicable

## 16 MINING METHODS

Not Applicable

## 17 RECOVERY METHODS

Not Applicable

## 18 PROJECT INFRASTRUCTURE

Not Applicable

## 19 MARKET STUDIES AND CONTRACTS

Not Applicable

## 20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Not Applicable

## 21 CAPITAL AND OPERATING COSTS

Not Applicable

## 22 ECONOMIC ANALYSIS

Not Applicable

## 23 ADJACENT PROPERTIES

Several other active gold exploration projects are in various stages of development in the north-eastern DRC. These projects include the Randgold Resources and AngloGold Ashanti joint venture, Kibali and AngloGold Ashanti's Mongbwalu project. Mwana Africa and Loncor Resources also have gold exploration projects in the area. Figure 18 illustrates the location of these projects with respect to Kilo's licence areas.

It should be noted that the Qualified Person is unable to verify the information on the adjacent properties and this information is not necessarily indicative of the gold mineralisation within the Somituri Project.

### **23.1 Randgold Resources and AngloGold Ashanti Joint Venture (Kibali)**

According to Randgold Resources (2011), the Kibali project has a Probable Mineral Reserve of 9.2Moz of Au, Indicated Mineral Resource of 13.9Moz and an Inferred Mineral Resource of 5.8Moz of Au.

### **23.2 AngloGold Ashanti (Mongbwalu)**

As published by SRK Consulting (2010), the Mongbwalu project had an Inferred Mineral Resource of 2.9Moz of Au in September 2010.

### **23.3 Mwana Africa**

In January 2012, Mwana released a JORC-compliant Mineral Resource of 0.45Moz Indicated and 1.56Moz Inferred (Mwana, 2012) for its Zani Kodo project.

## **24 OTHER RELEVANT DATA AND INFORMATION**

Not applicable.

## **25 INTERPRETATION AND CONCLUSION**

Kilo has identified an Inferred Mineral Resource (above a cut-off grade of 0.5g/t) 35.6Mt at a gold grade of 1.63g/t on the Adumbi Prospect by diamond drilling over a strike length of 1.2km. The width of the mineralised zones varies between 5m and 50m.

The method of sampling and analysis conducted by Kilo at the Adumbi Prospect is appropriate. The sample preparation facility Kilo plan to erect on site will assist in exporting a smaller sample to the ALS Chemex Laboratory in Johannesburg and mitigate some of the chain of custody issues.

The metallurgical test work completed to date is not considered sufficient and more representative samples of likely mined ore-grade and material type (oxide/sulphide) needs to be tested for its metallurgical characteristics before any definitive statements can be made.

The style of gold mineralisation may well be structurally controlled and to date there is a poor understanding of the regional and local structural geology. This is reflected in the style of geological and gold continuity modelling completed to date.

The density of the oxide and sulphide materials is poorly informed and is currently assumed. The depth of weathering in the current modelling could be improved from the existing data as well as from new drilling data.

## 26 RECOMMENDATIONS

### 26.1 Kilo budget proposal

Kilo has submitted the following proposed budget to The Mineral Corporation.

A total budget of CDN\$16 950 000 is proposed, which will be split between a Phase 1 (CDN\$9 500 000) and a Phase 2 (CDN\$7 450 000) exploration programme as summarised in Table 21 and Table 22.

This budget may be subject to change in-line with the results which are achieved.

**Table 21: Proposed Phase I Budget**

Activity	CDN\$
Drilling - Resource upgrade and definition	5 600 000
Geological, metallurgical, trenching and sampling	400 000
Property fees and costs	400 000
Preliminary Economic Assessment, Pre-feasibility and environmental studies	100 000
Capital expenditure, repairs and maintenance	200 000
Environmental bond	200 000
Regional exploration	100 000
General Administration and Working Capital	2 500 000
<b>TOTAL – Phase I</b>	<b>9 500 000</b>

**Table 22: Proposed Phase II Budget**

Activity	CDN\$
Drilling - Resource upgrade and definition	2 800 000
Geological, metallurgical, trenching and sampling	700 000
Property fees and costs	400 000
Preliminary Economic Assessment, Pre-feasibility and environmental studies	300 000
Capital expenditure, repairs and maintenance	250 000
Regional exploration	300 000
General Administration and Working Capital	2 500 000
<b>TOTAL - Phase II</b>	<b>7 450 000</b>

### 26.2 Further work

The following is recommended for Kilo to execute in the next phase of project development:

- The existing Inferred Mineral Resource model be employed in a scoping level study to understand the likely Mineral Reserves to be hosted in the Adumbi Prospect.
- Further work to identify additional gold Mineral Resources within PE9691 and / or the Remaining Seven Licenses.
- The Mineral Resource classification could be improved via in-fill drilling that will also assist in the understanding of the gold grade continuity. Borehole orientation for evaluation should be balanced between the requirements of intersection depth and obtaining an orthogonal intersection. However, boreholes steeper than 60° should be avoided.
- The structural geology of the region, and in particular for the Adumbi Prospect, needs to be understood to assist in gold grade continuity modelling. This will have a positive influence on the classification of the gold Mineral Resources.

- Erect the sample preparation facility on site and institute Kilo's revised dispatch of samples to ALS Chemex Johannesburg to mitigate the chain of custody issues.
- Samples specifically taken for density measurements need to be taken over a suite of different rock and material types.
- Focus on the historically depleted Mineral Resources and potential for geological losses needs to be made.
- The budget that Kilo proposes for their next phases of work appears to be adequate to fulfil the above works. If this is successful, further evaluation drilling may be required.

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## 28 DATE AND SIGNATURE PAGE

Date: 26 April 2012

Signed



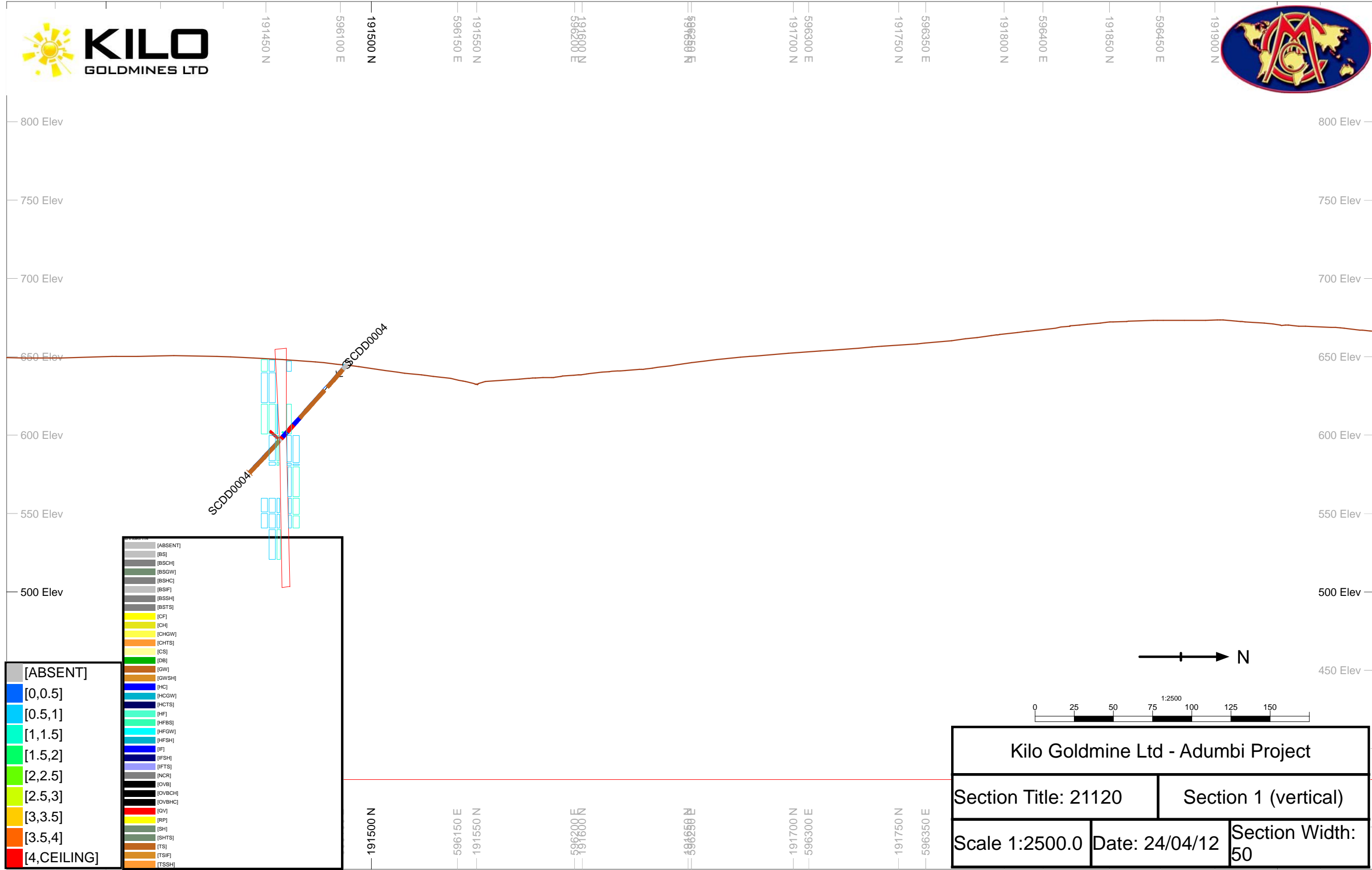
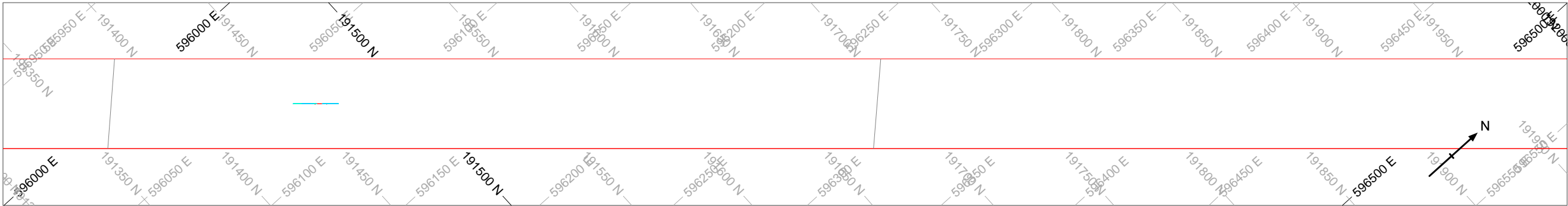
D. R. Young  
Director

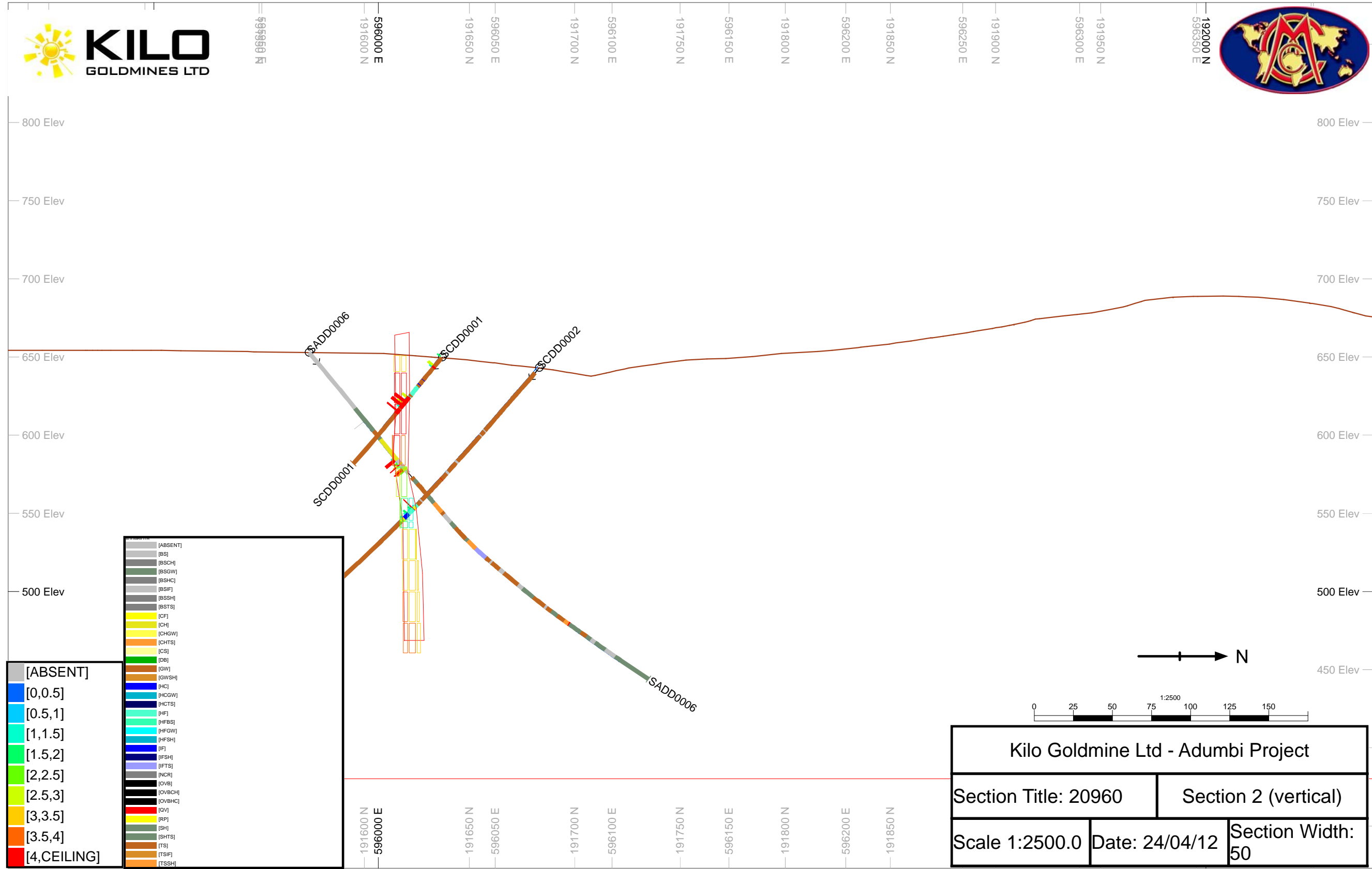
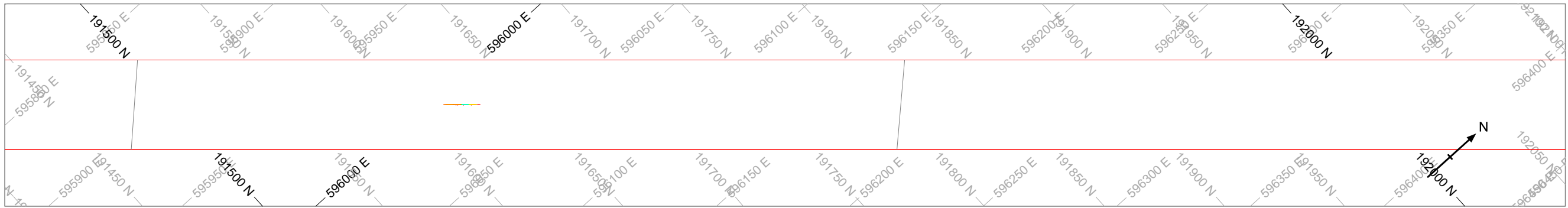
## APPENDIX 1: BOREHOLE GOLD ANALYSES FOR THE INTERPRETED ORE BODY

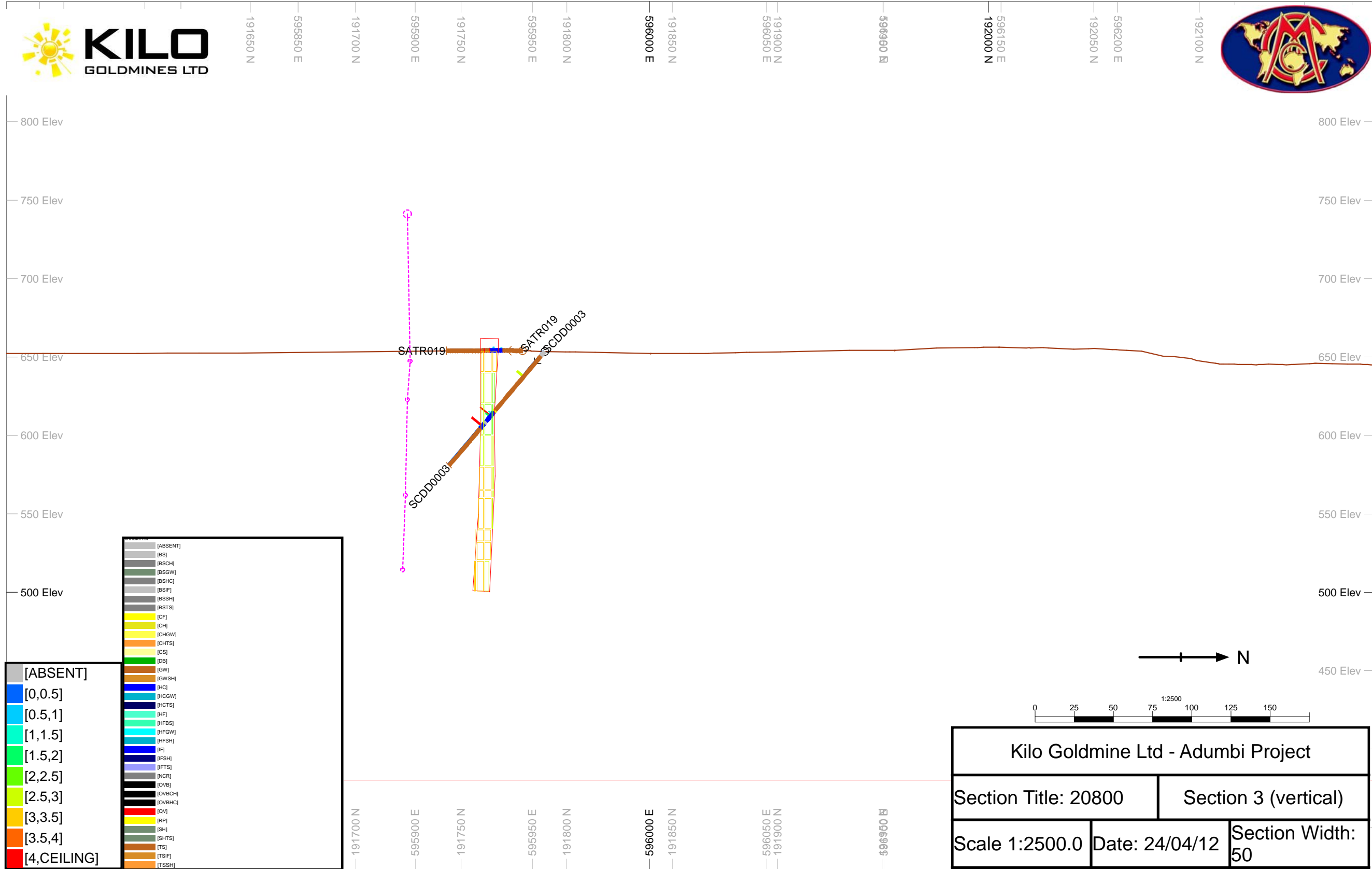
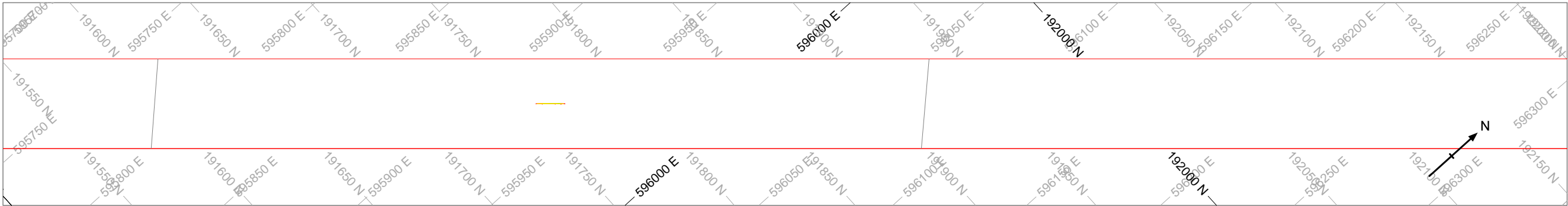
Borehole	From	To	Au	Zone	Down hole length	Thickness normal to zone
SADD0001	153.00	182.75	1.25	1	29.75	17.5
SADD0001	199.75	229.50	1.77	3	29.75	17.5
SADD0003	121.80	162.40	2.62	1	40.6	25.0
SADD0003	243.60	259.84	2.44	3	16.24	10.0
SADD0004	138.60	198.00	2.50	1	59.4	45.0
SADD0005	119.68	179.52	2.26	1	59.84	40.0
SADD0005	239.36	254.32	1.18	3	14.96	10.0
SADD0006	86.02	97.24	3.30	2	11.22	7.5
SADD0008	106.20	113.28	1.73	1	7.08	5.0
SADD0008	180.54	184.08	2.11	3	3.54	2.5
SADD0011	19.45	27.23	2.18	1	7.78	5.0
SADD0015	123.25	169.70	2.68	1	46.45	27.3
SADD0016	75.52	132.16	3.67	1	56.64	30.0
SADD0017	275.79	326.51	3.23	1	50.72	40.0
SADD0019	191.25	255.00	1.20	1	63.75	37.5
SADD0020	77.80	108.92	0.42	1	31.12	20.0
SADD0021	8.30	49.80	1.09	3	41.5	25.0
SADD0021	66.40	81.30	2.13	1	14.9	9.0
SADD0022	242.17	269.96	3.84	1	27.79	17.5
SADD0024	7.48	14.96	2.19	3	7.48	5.0
SADD0025	28.50	57.00	2.02	1	28.5	12.5
SADD0026	124.50	132.80	0.83	3	8.3	5.0
SADD0026	157.70	207.50	2.02	1	49.8	30.0
SADD0027	190.80	226.80	1.77	1	36	25.0
SADD0028	153.34	175.78	1.36	3	22.44	15.0
SADD0028	220.66	261.80	1.69	1	41.14	27.5
SADD0029	0.00	3.74	1.39	3	3.74	2.5
SADD0029	33.66	48.62	1.05	1	14.96	10.0
SADD0030	100.63	135.33	1.59	3	34.7	25.0
SADD0030	166.56	190.85	0.44	1	24.29	17.5
SADD0031	15.24	26.67	1.72	3	11.43	7.5
SADD0032	67.66	75.62	0.43	1	7.96	5.0
SADD0034	60.96	68.58	0.00	3	7.62	5.0
SADD0034	106.68	140.97	3.83	1	34.29	22.5
SADD0035	31.77	49.90	1.87	1	18.13	12.8
SADD0036	3.81	34.90	0.87	1	31.09	20.4
SADD0037	77.80	105.03	0.73	1	27.23	17.5
SADD0038	19.45	38.90	0.25	3	19.45	12.5
SADD0038	70.02	81.69	3.87	1	11.67	7.5
SADD0039	92.07	119.35	1.89	3	27.28	20.0
SADD0039	139.81	163.68	1.48	1	23.87	17.5
SADD0041	110.49	121.92	0.47	1	11.43	7.5
SADD0042	132.24	139.20	0.30	3	6.96	5.0
SADD0042	191.40	208.80	0.38	1	17.4	12.5
SADD0043	0.00	7.62	0.12	3	7.62	5.0
SADD0043	30.48	57.15	1.27	1	26.67	17.5
SADD0044	0.00	21.18	0.45	3	21.18	15.0
SADD0044	88.25	130.61	2.42	1	42.36	30.0
SADD0045	112.96	130.61	1.05	3	17.65	12.5
SADD0047	47.64	59.55	0.99	3	11.91	7.5
SADD0048	47.88	49.40	0.01	3	1.52	0.7
SCDD0001	27.23	30.30	0.00	2	3.07	2.0
SCDD0001	30.60	42.27	7.71	2	11.67	7.5
SCDD0002	117.98	128.39	1.00	2	10.41	7.5
SCDD0003	47.64	63.52	1.21	2	15.88	10.0
SCDD0004	56.10	59.84	0.34	2	3.74	2.5

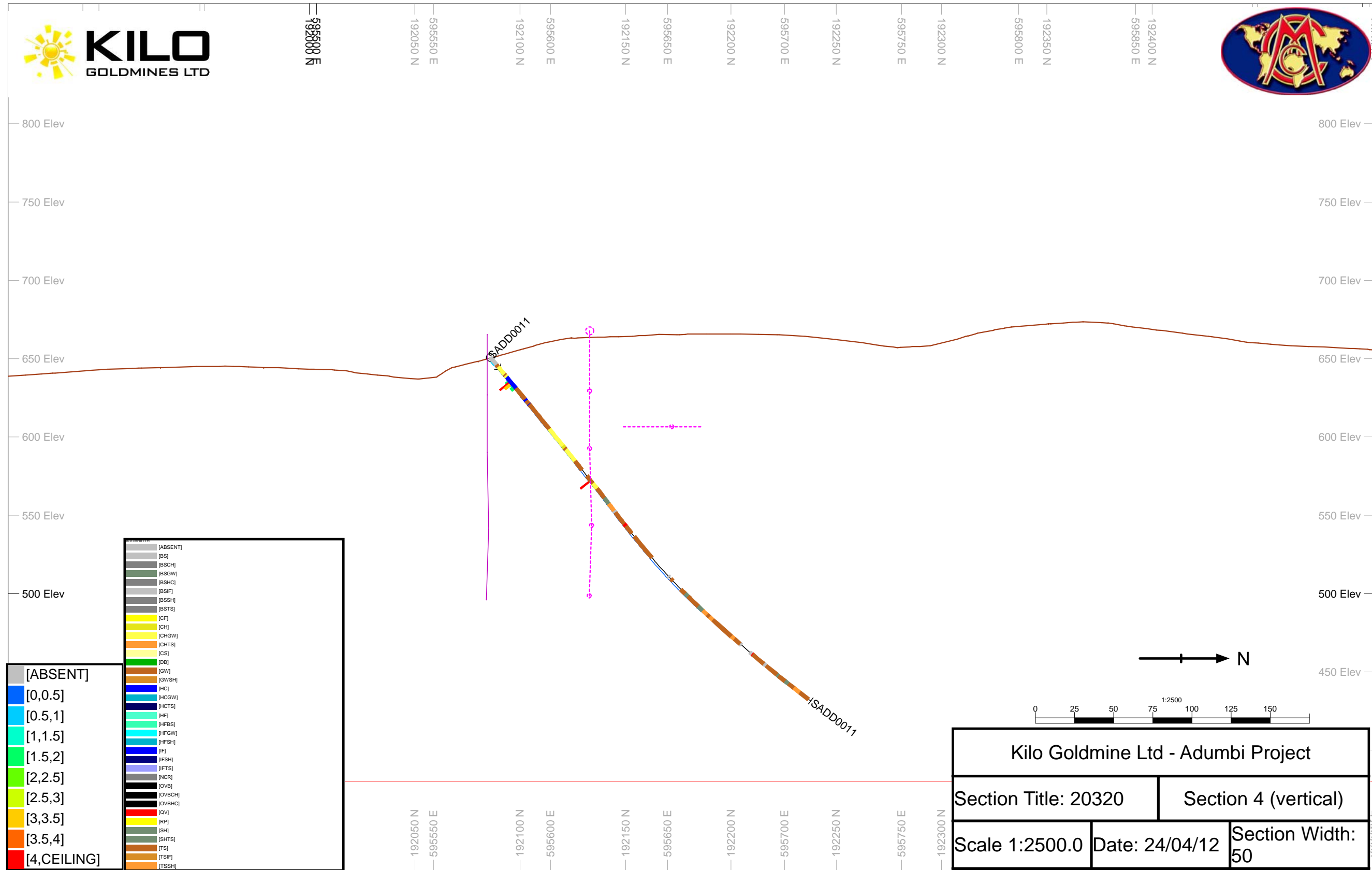


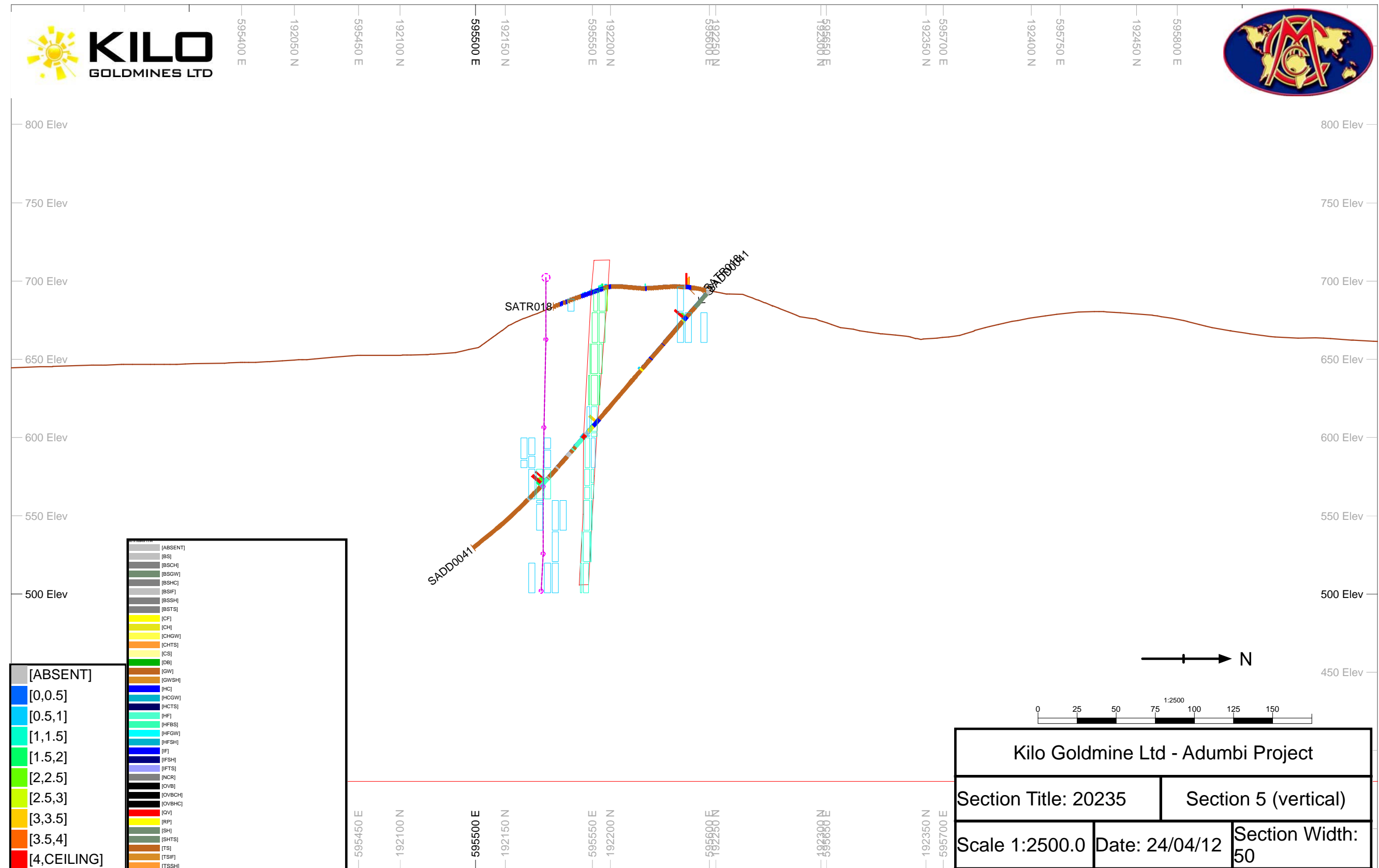
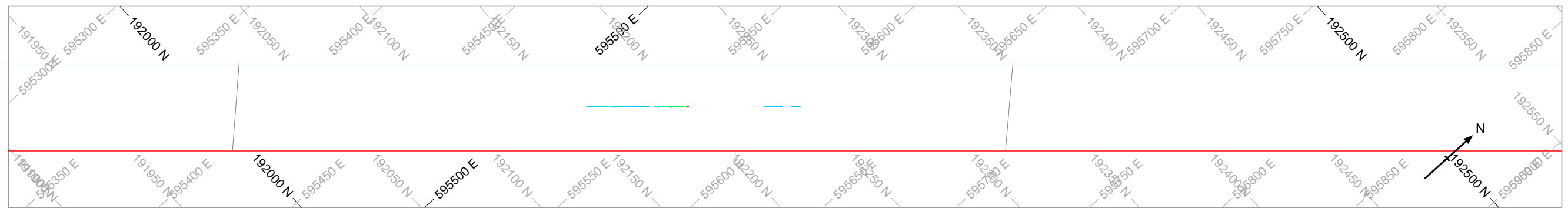
## APPENDIX 2: CROSS SECTIONS THROUGH BLOCK MODEL

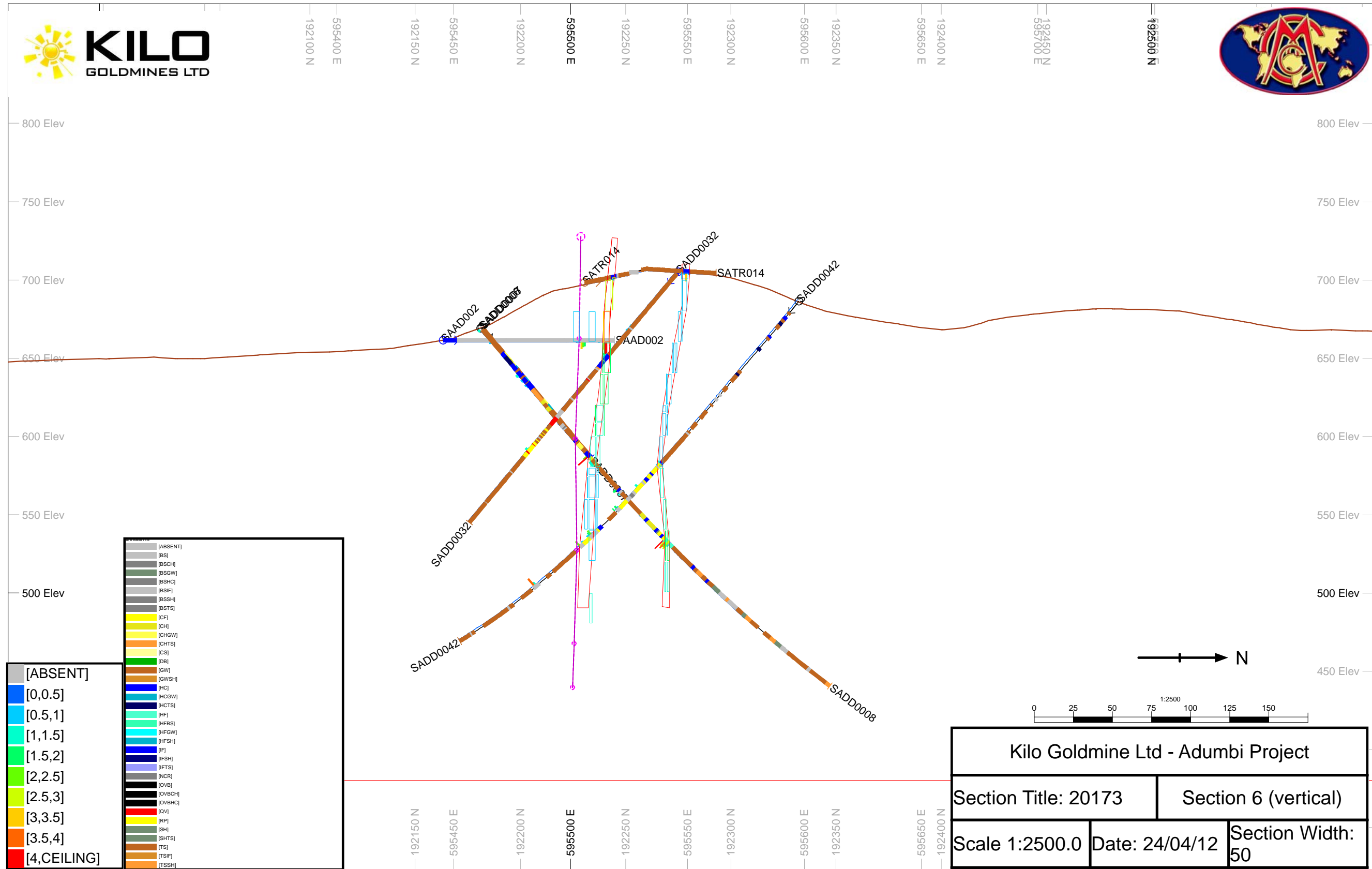
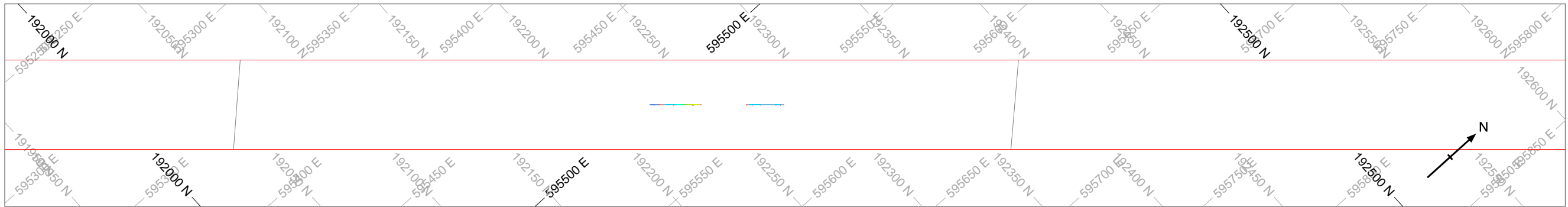




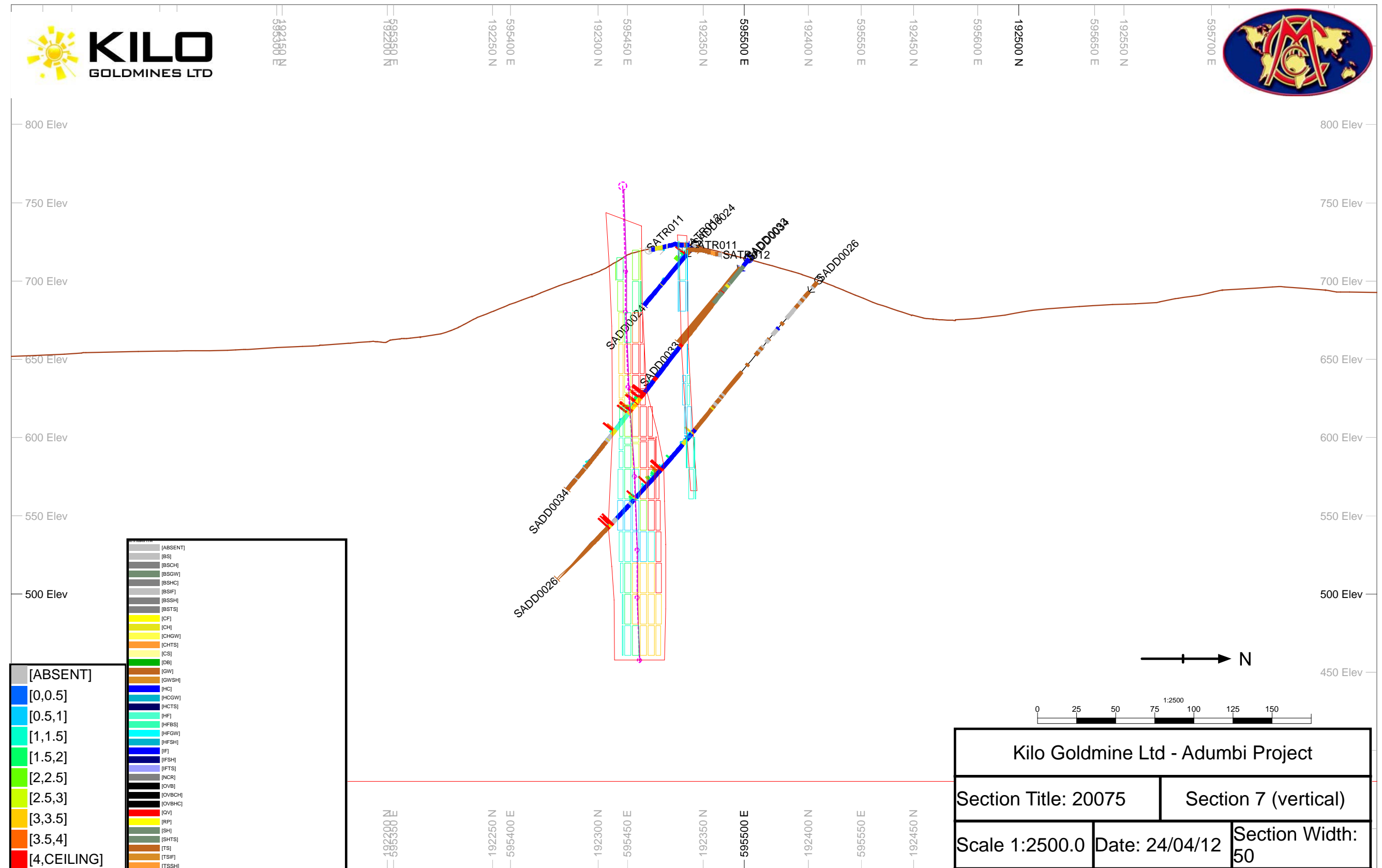
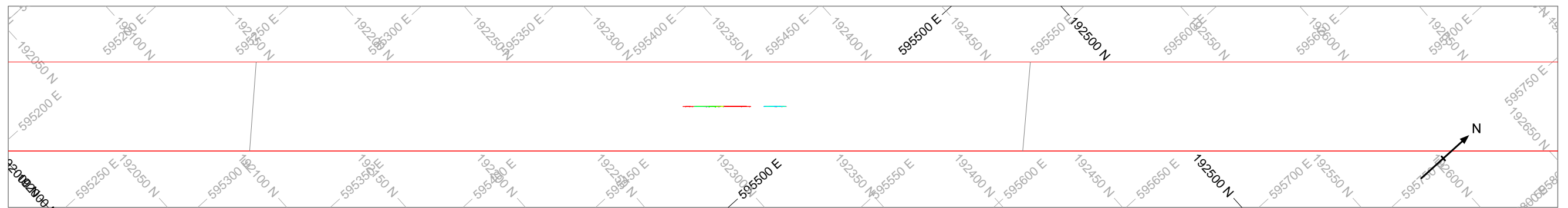


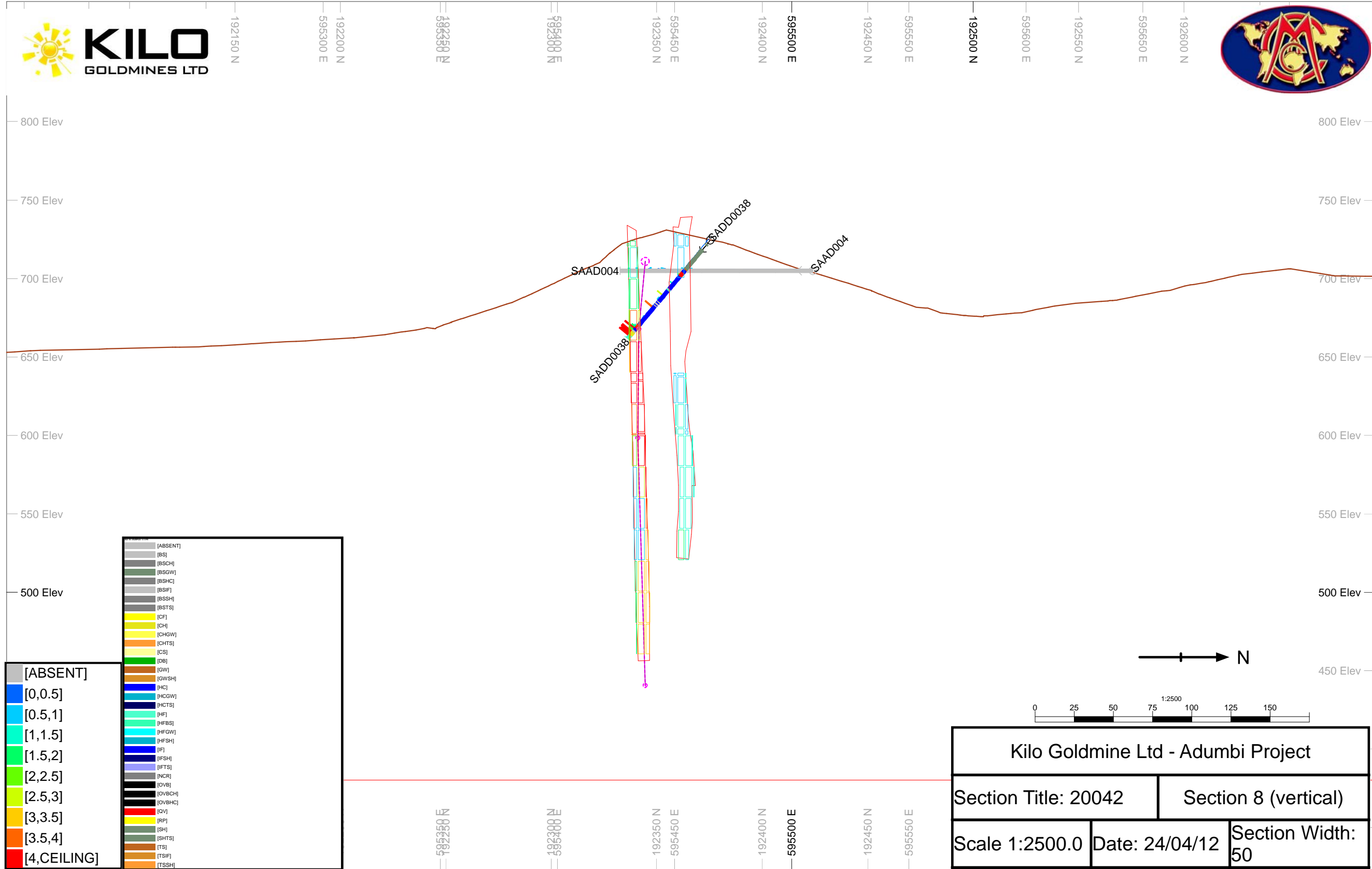
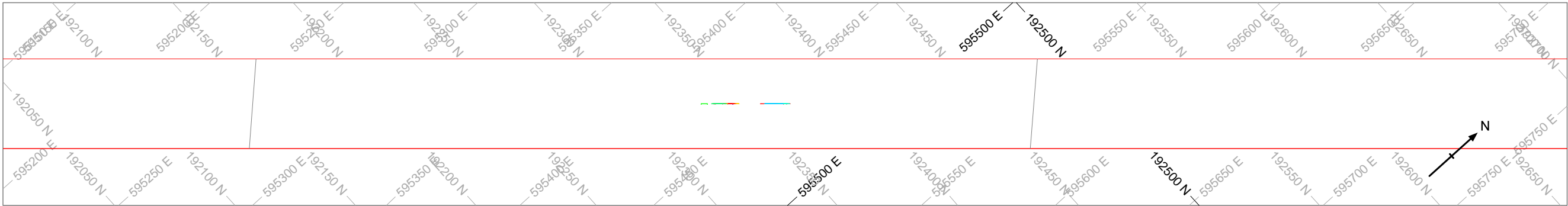


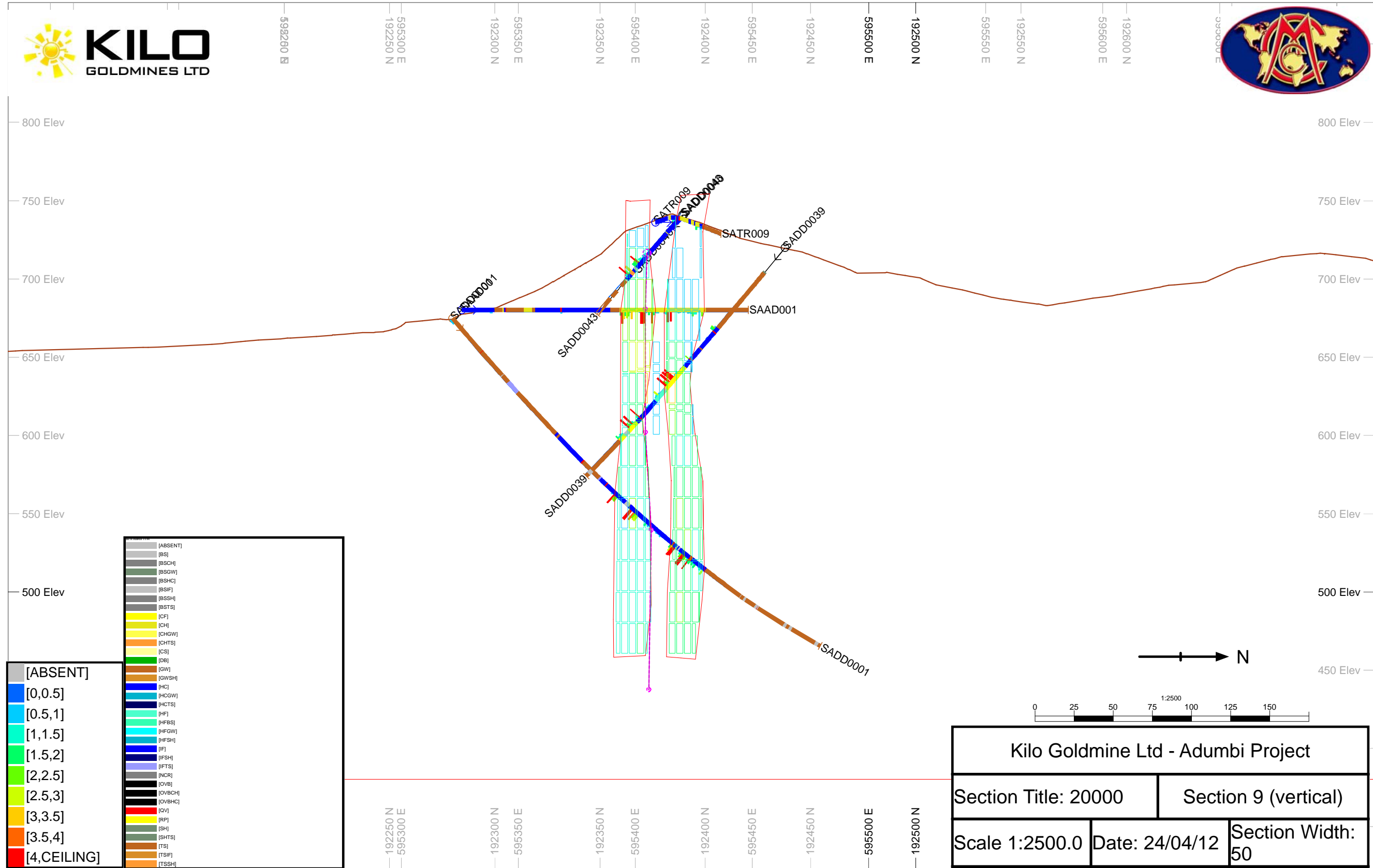
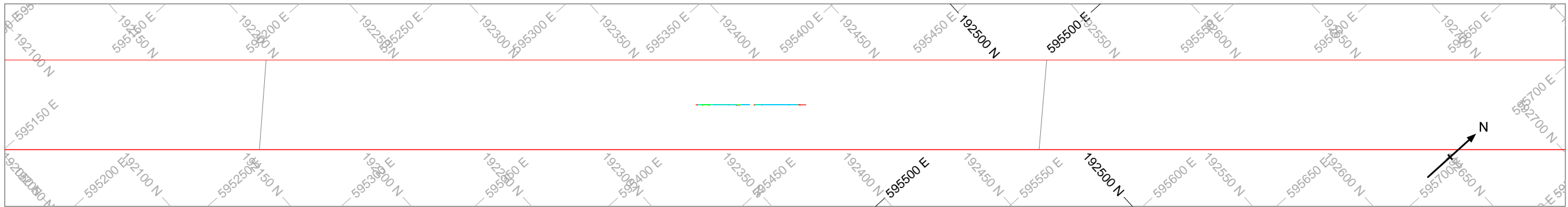


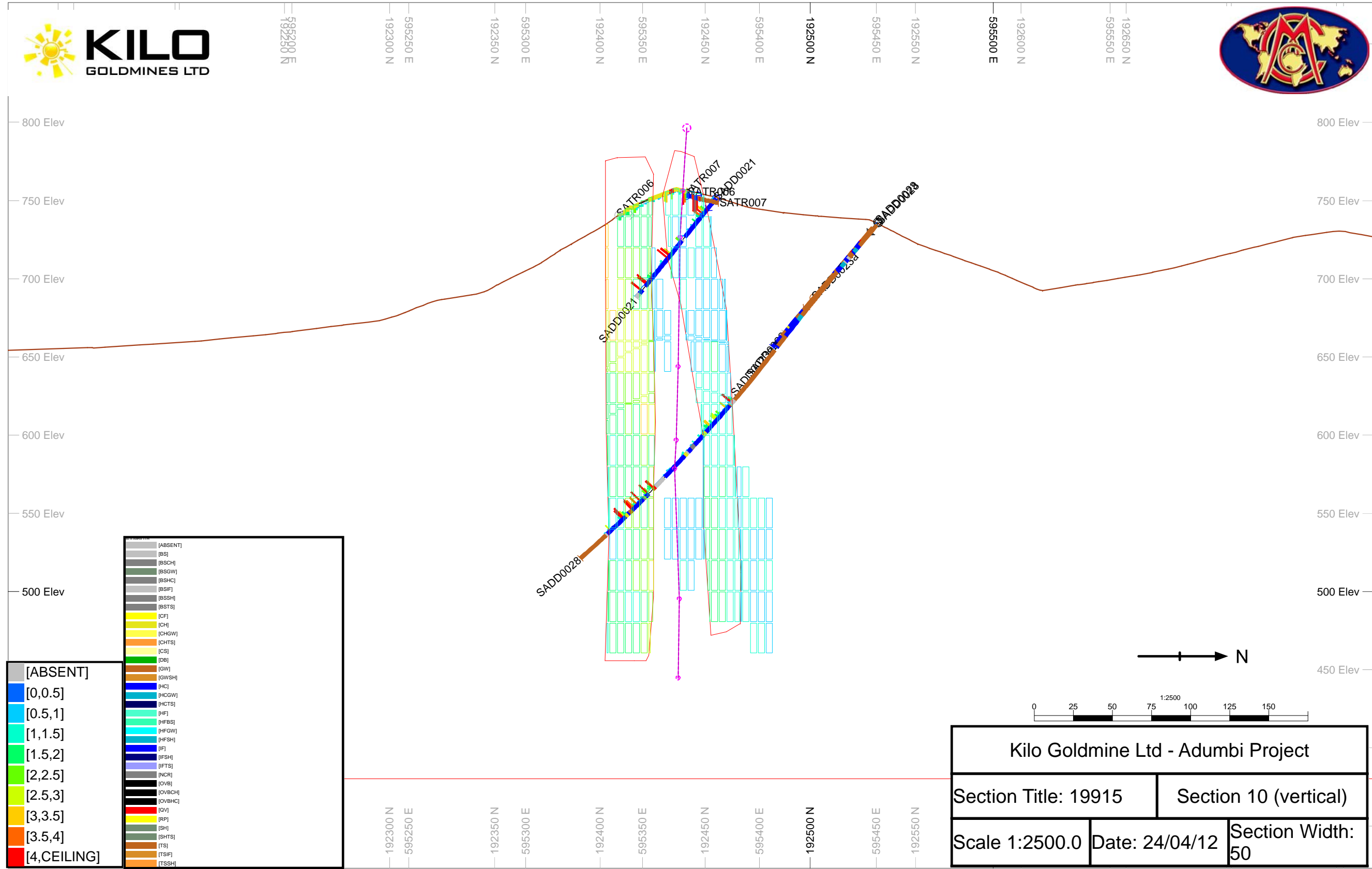
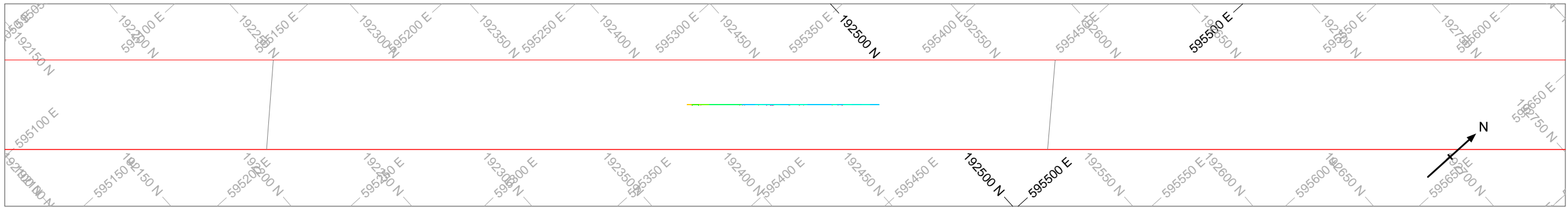


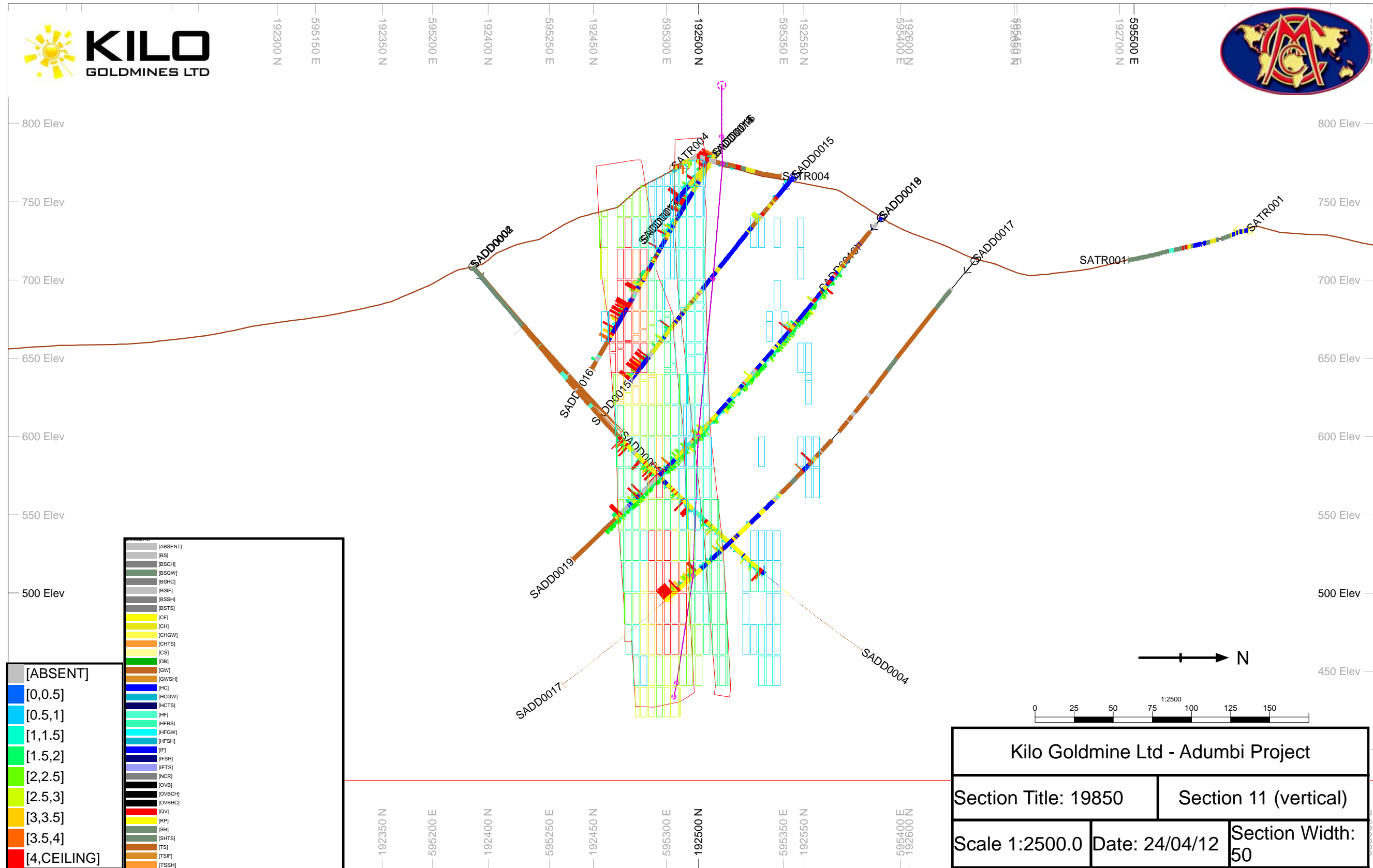
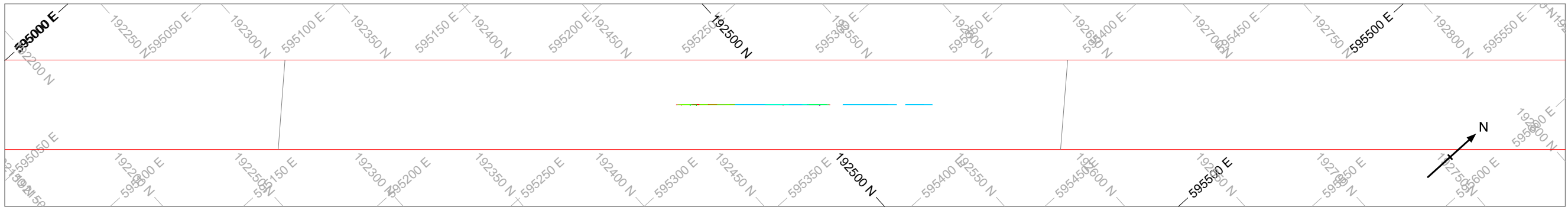


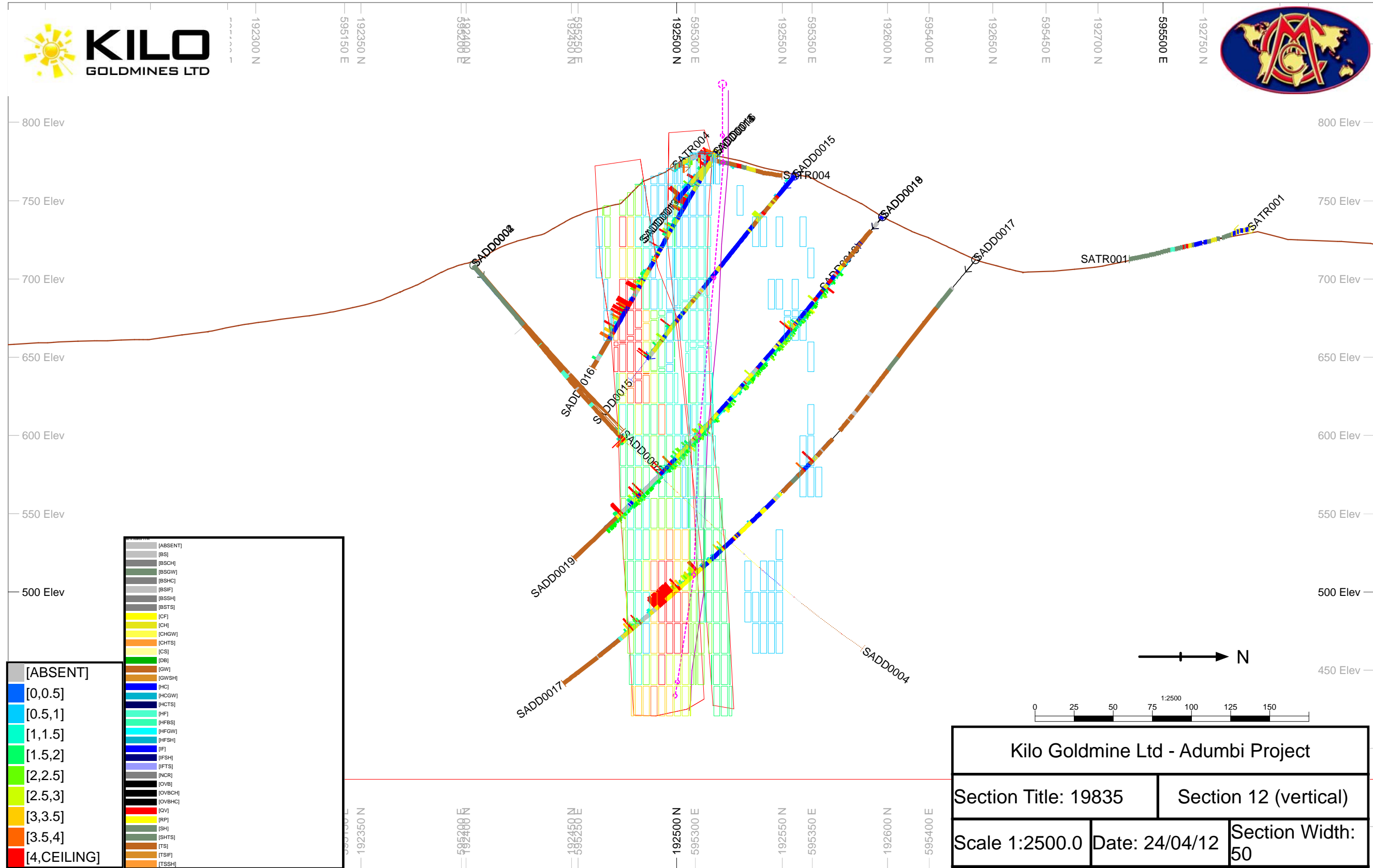
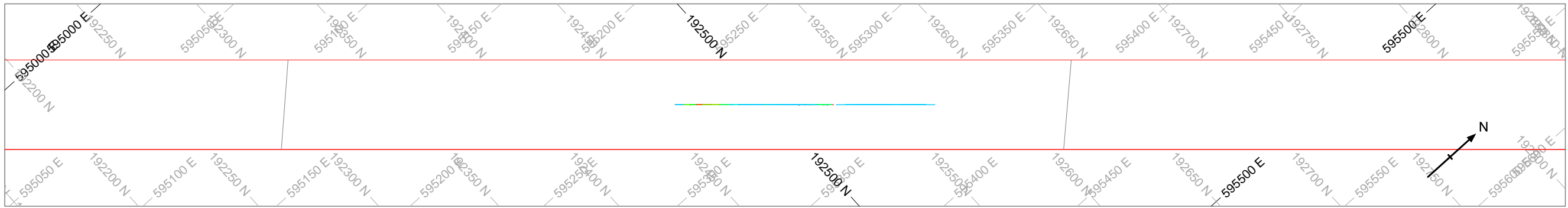




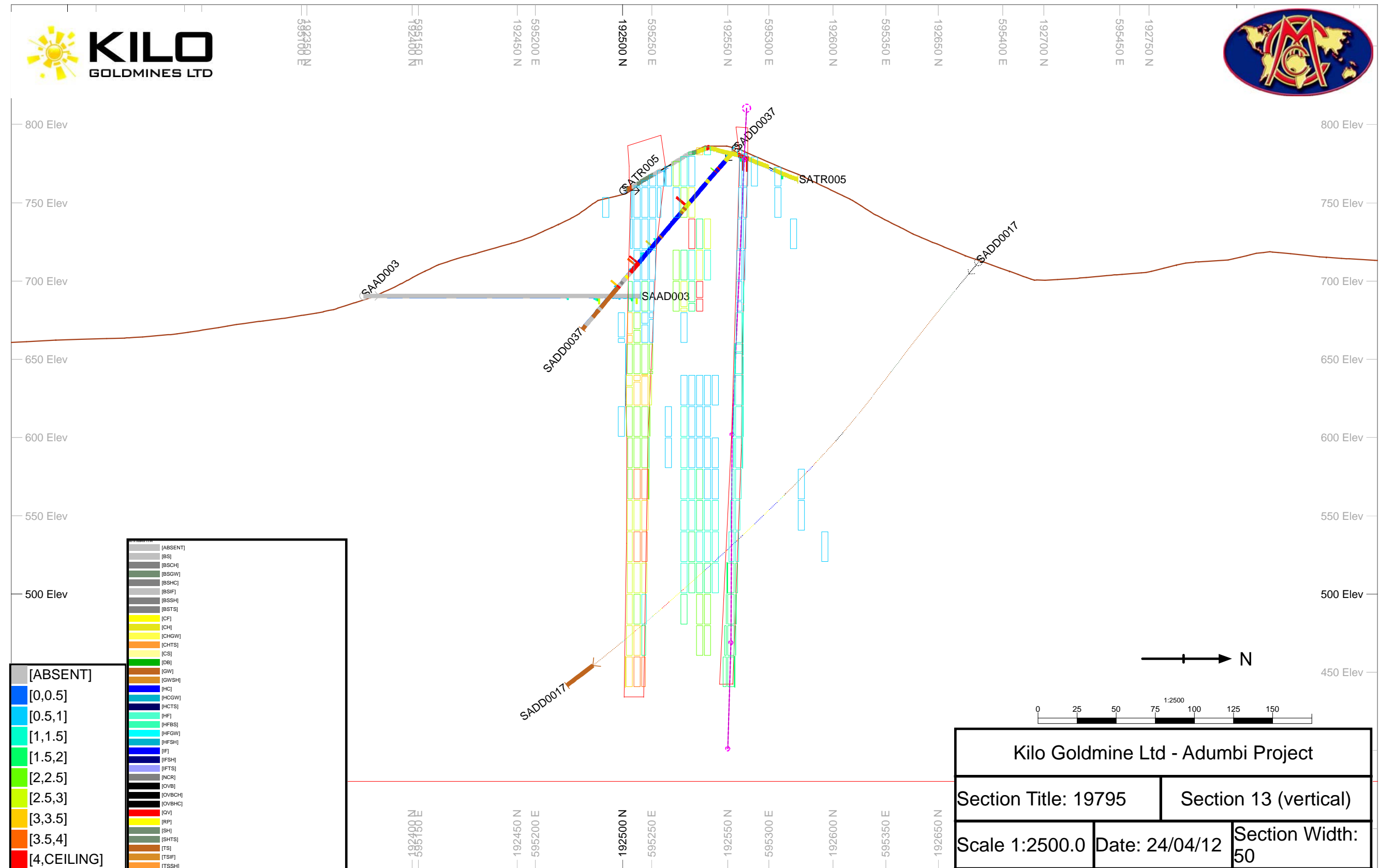
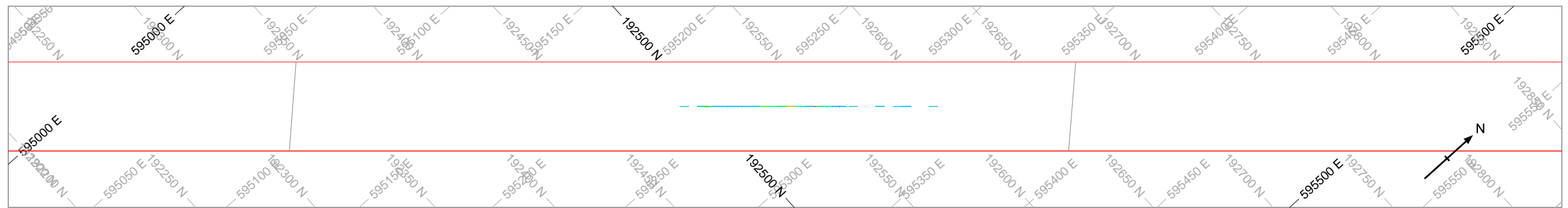




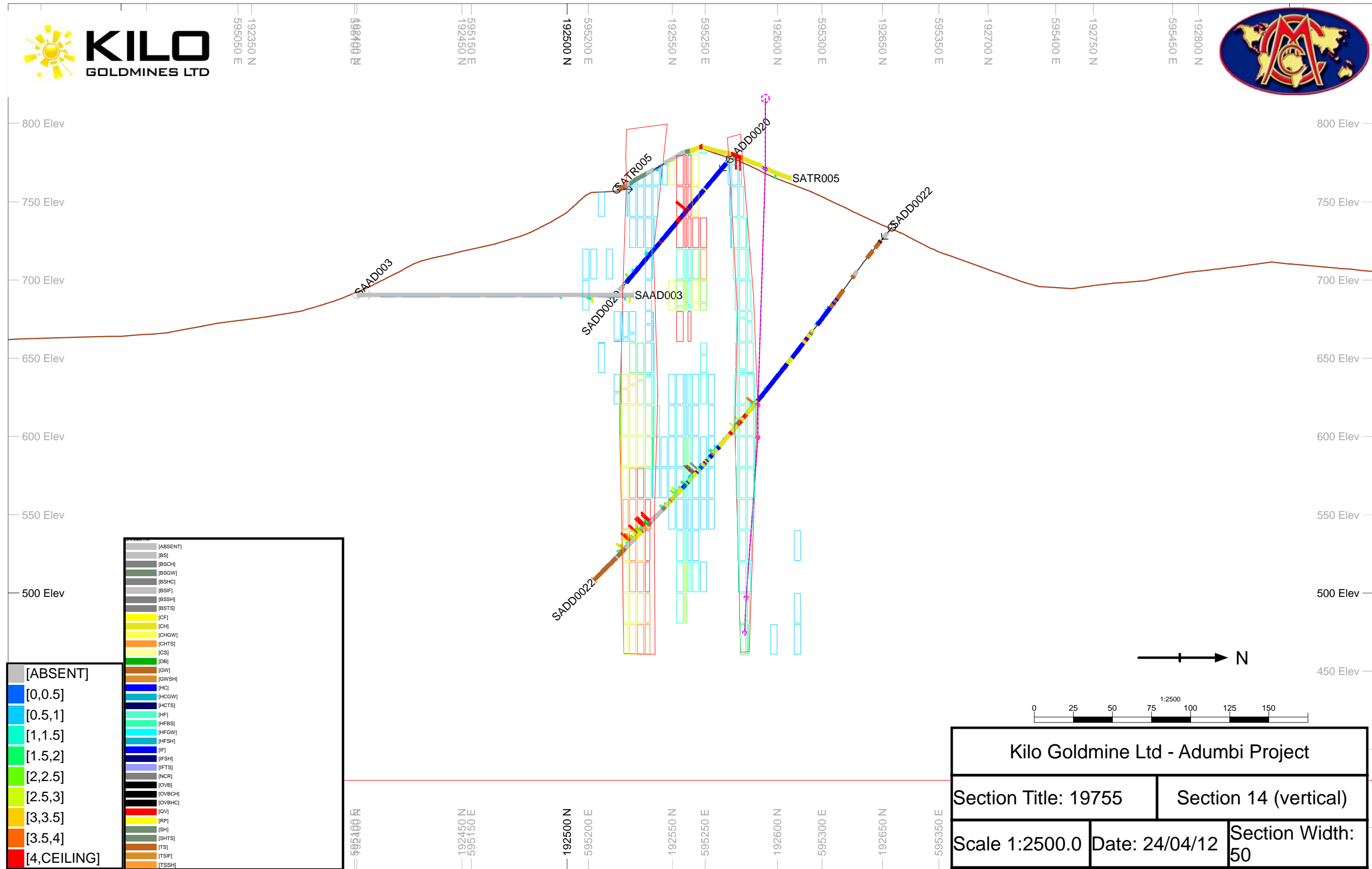
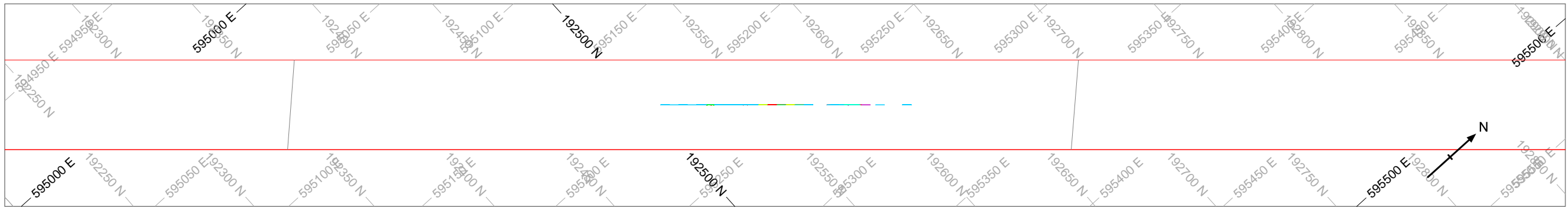




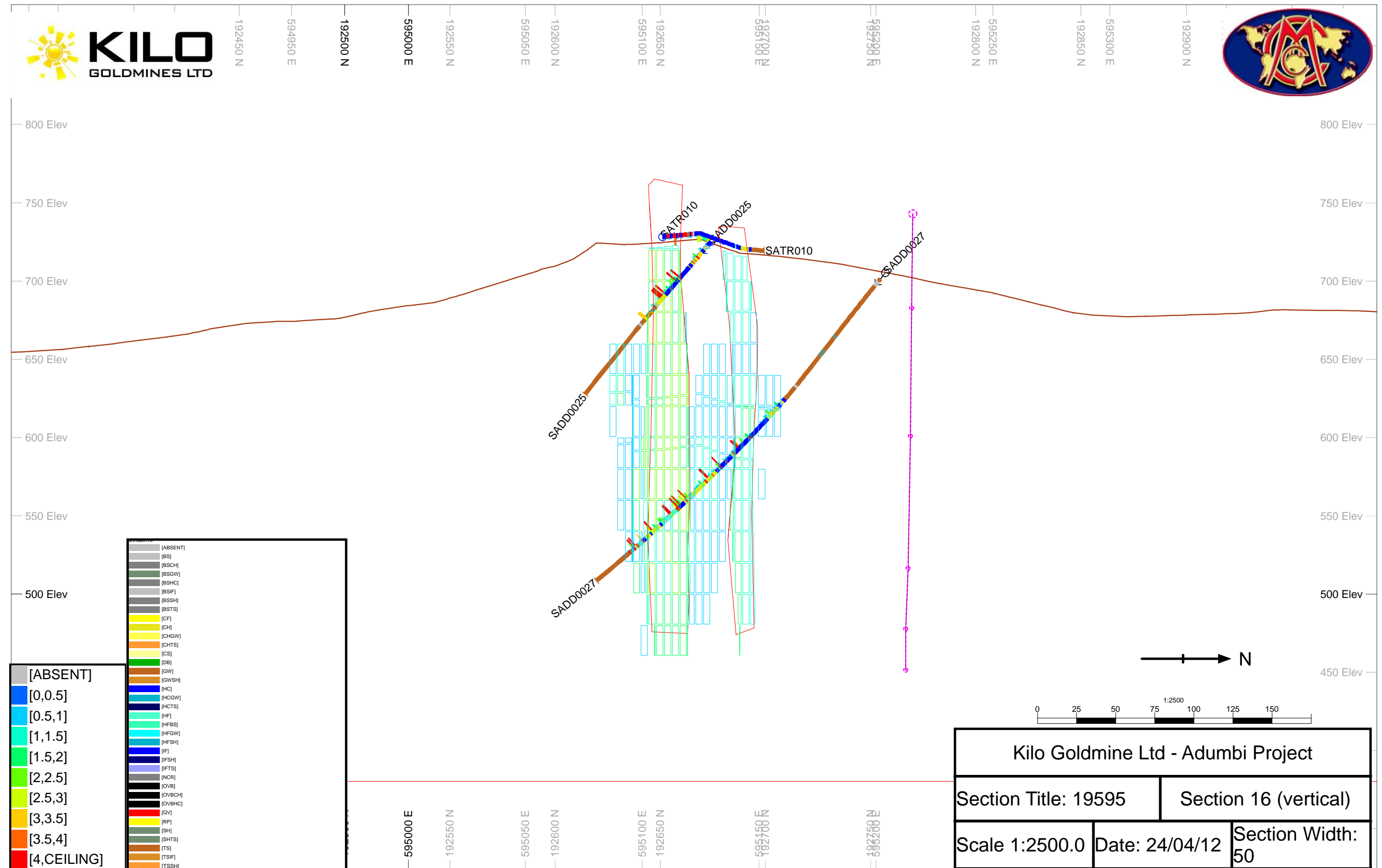
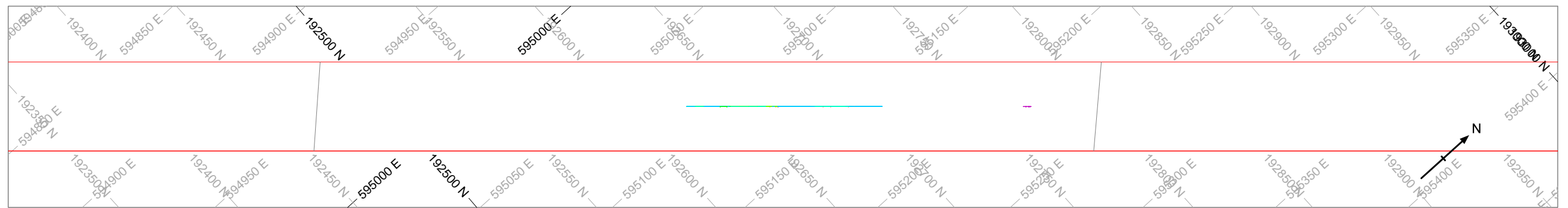
Kilo Goldmine Ltd - Adumbi Project		
Section Title: 19835		Section 12 (vertical)
Scale 1:2500.0	Date: 24/04/12	Section Width: 50

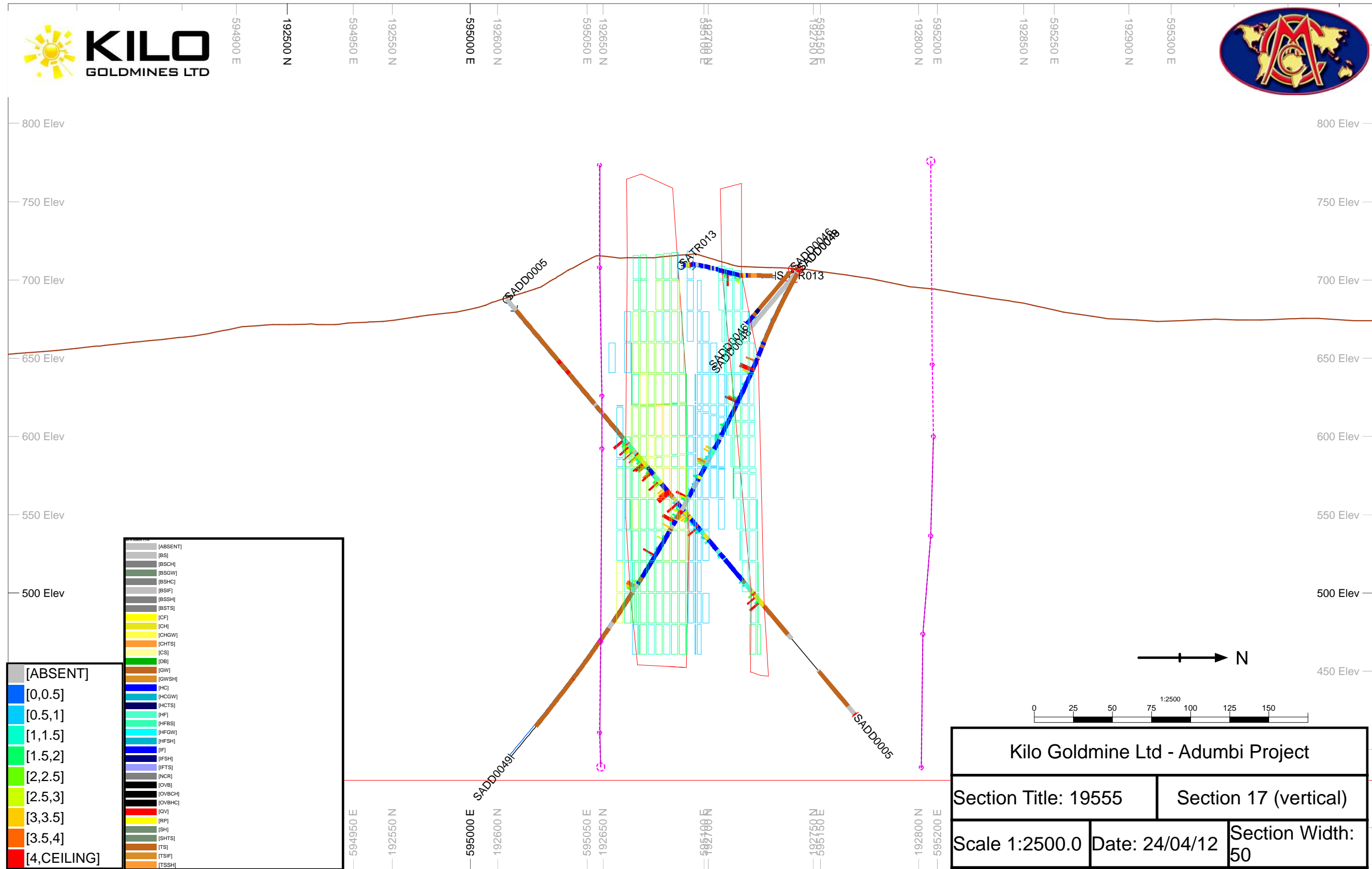
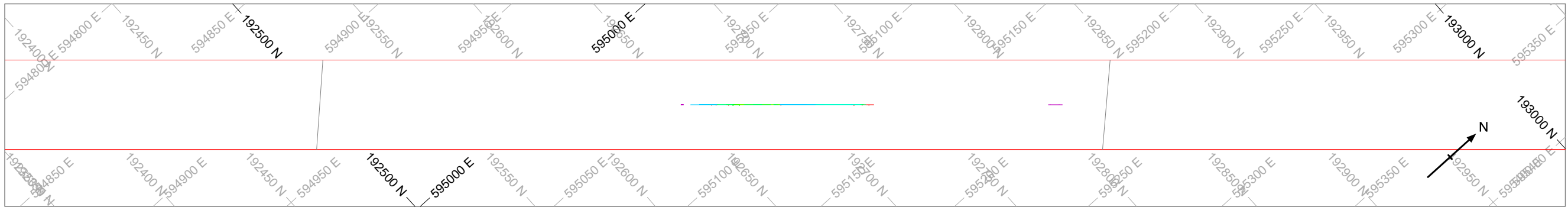




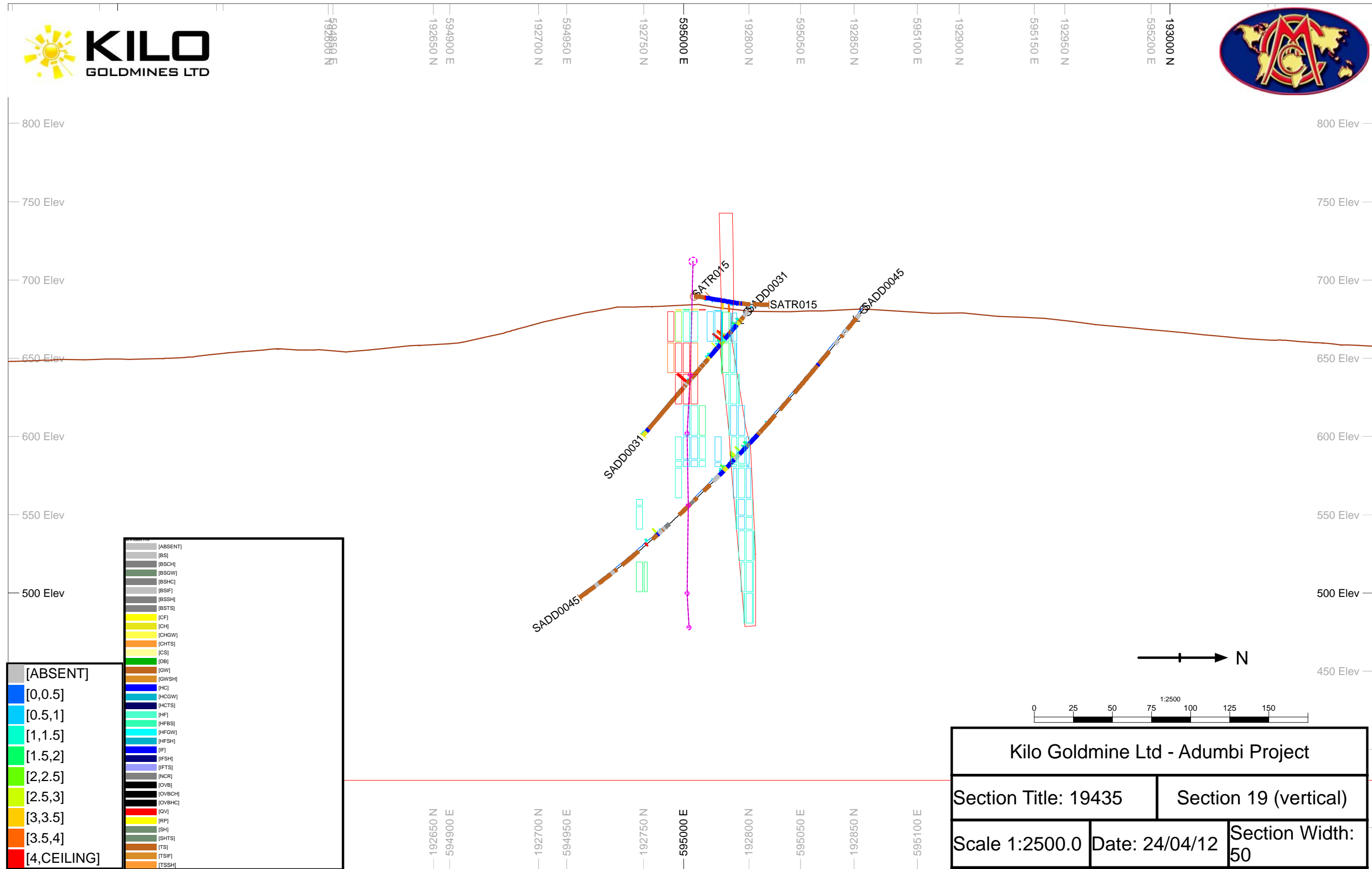
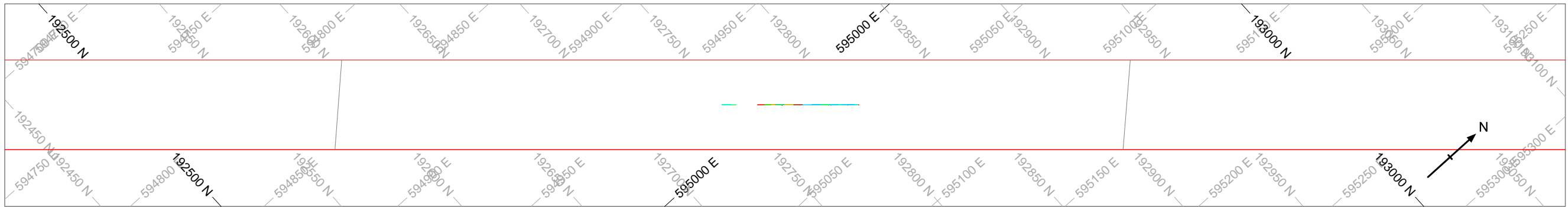


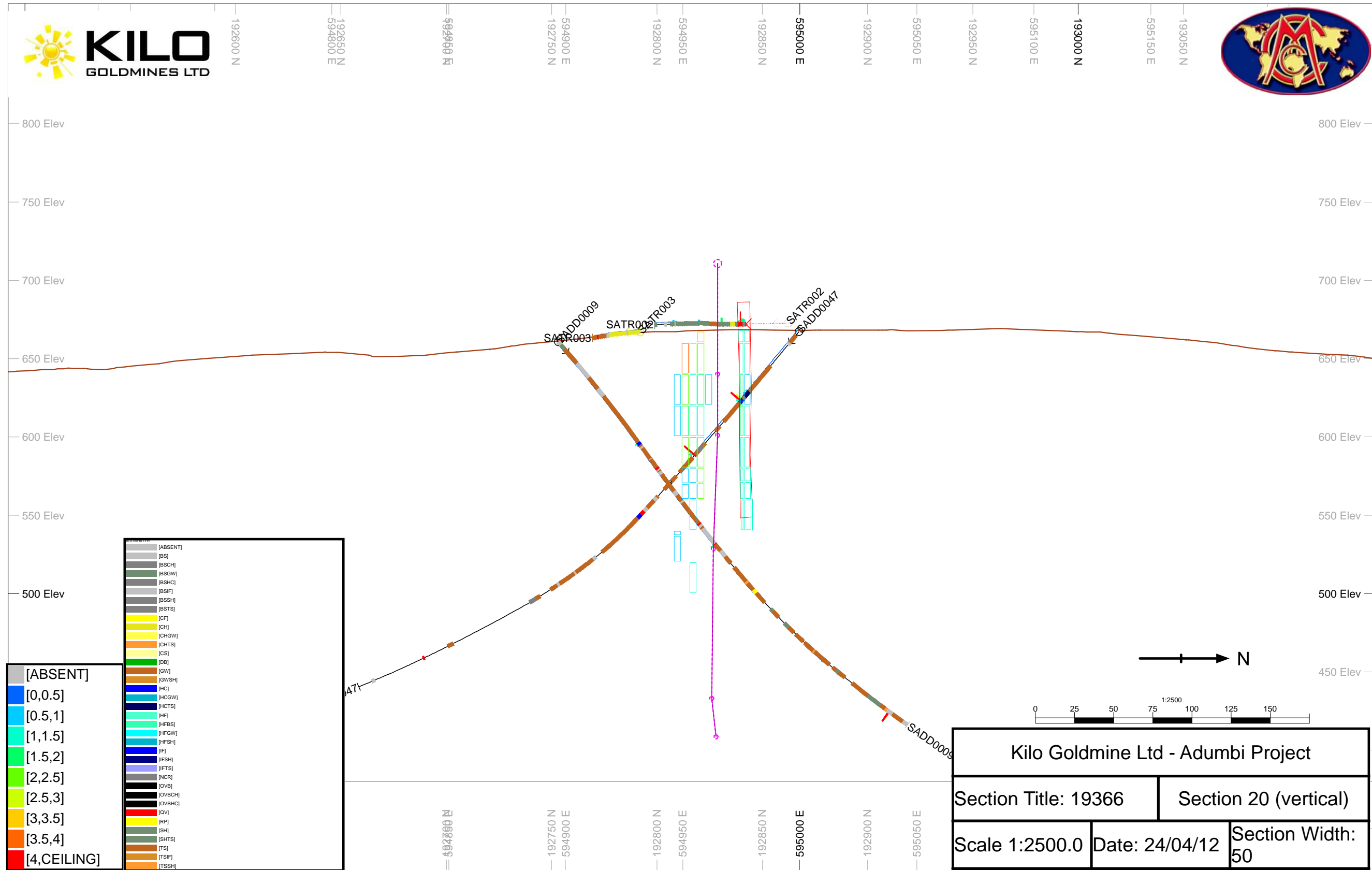
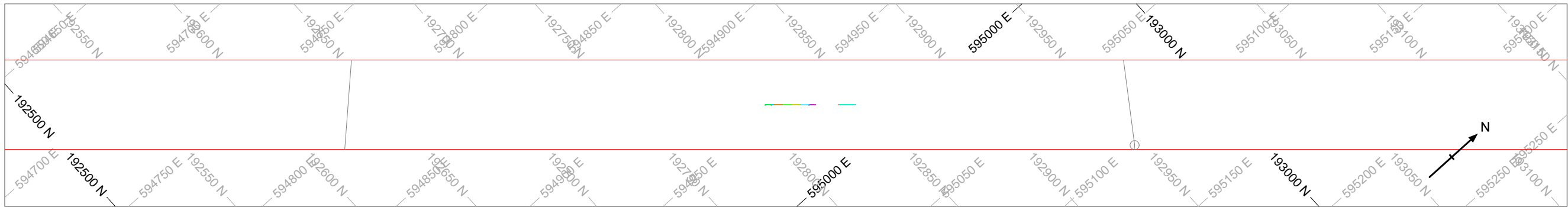








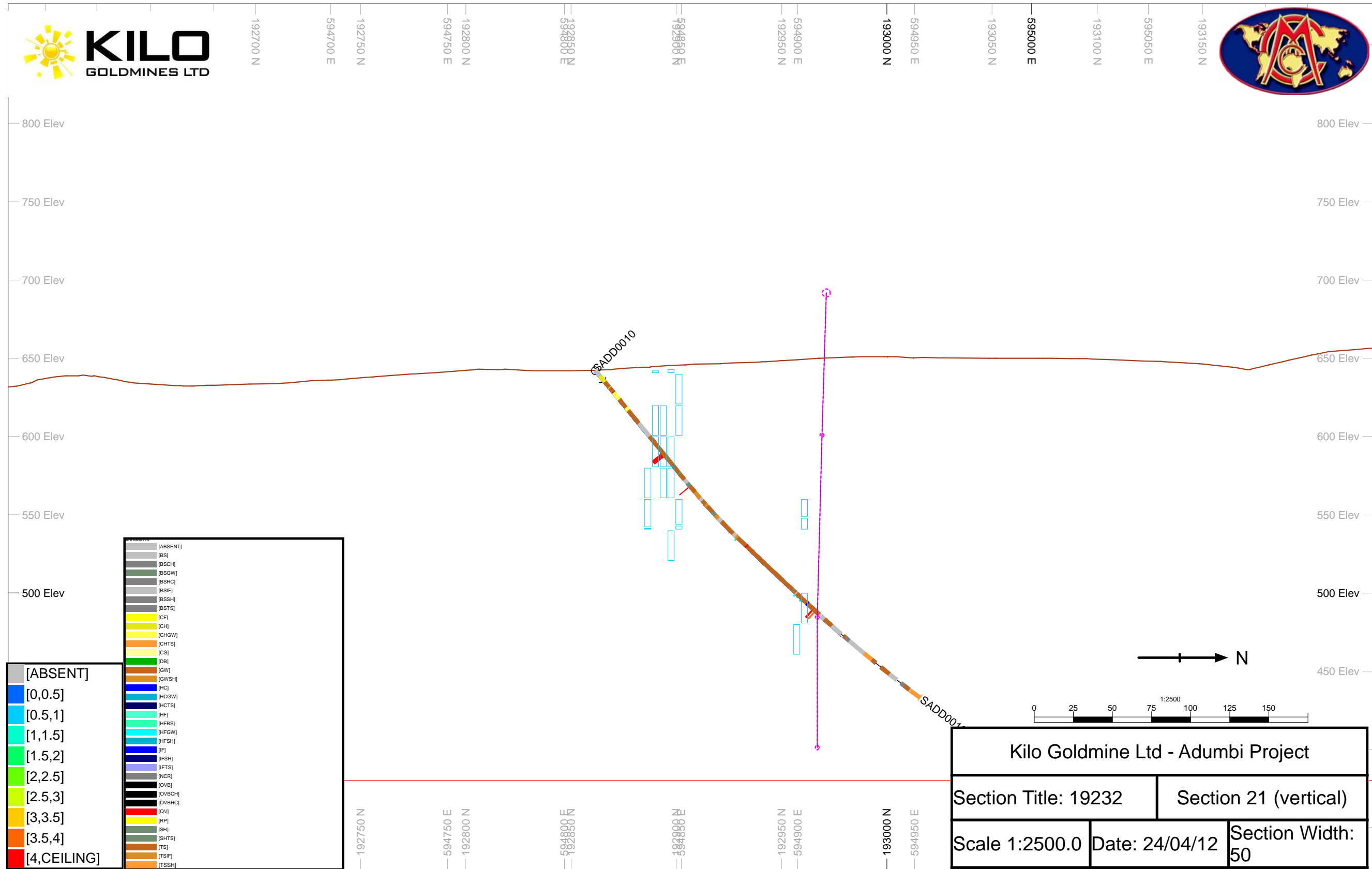
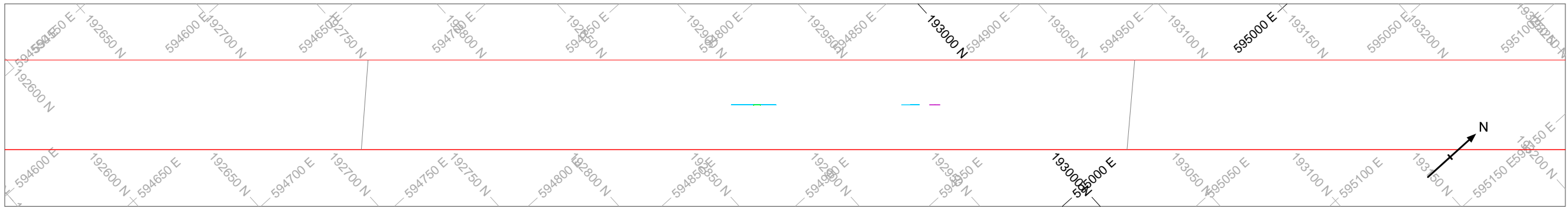


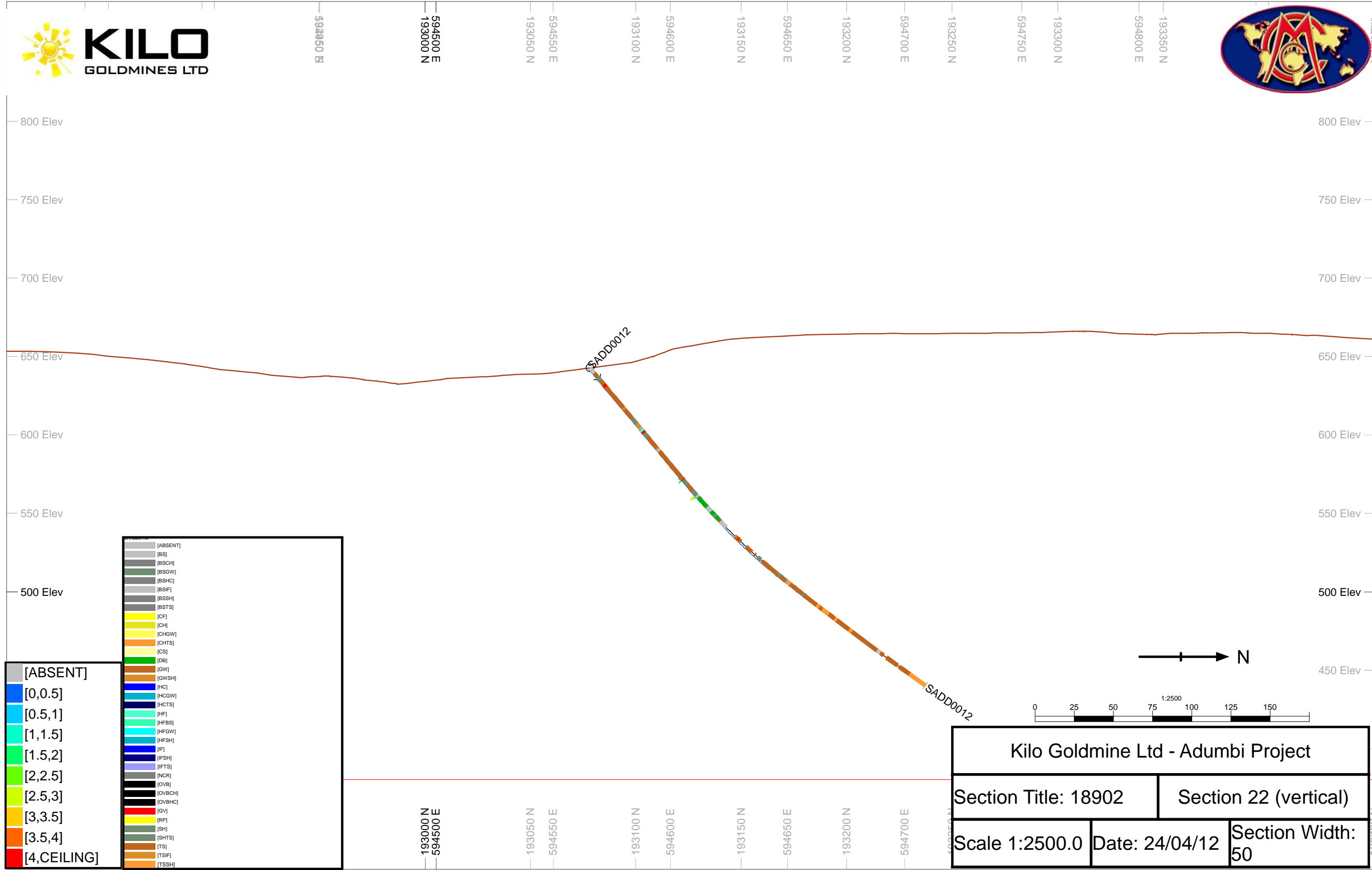
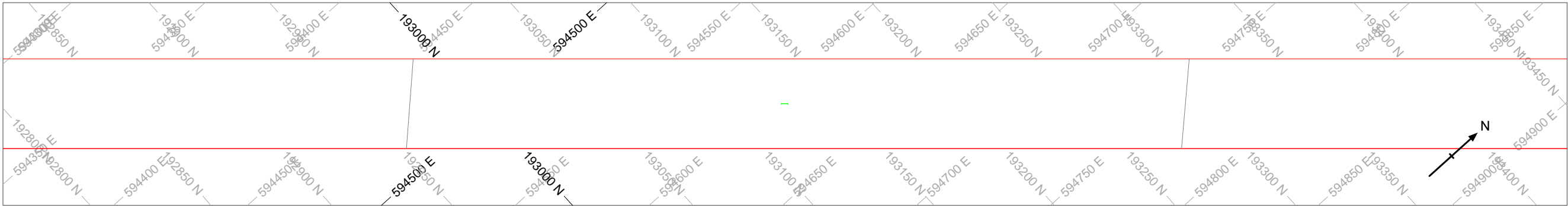


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Kilo Goldmine Ltd - Adumbi Project		
Section Title: 19366		Section 20 (vertical)
Scale 1:2500.0	Date: 24/04/12	Section Width: 50







### APPENDIX 3: PLAN VIEWS OF BLOCK MODEL

Kilo Goldmine Ltd - Adumbi Project

Section Title: 450

Section Level 450.00

Scale 1:4000.0

Date: 24/04/12

Section Width: 50

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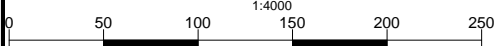
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192600 N

595000 E

595200 E

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595600 E

192400 N

595200 E

595400 E

595600 E

192200 N

595200 E

595400 E

595600 E

595800 E

596000 E

192000 N

191800 N

192600 N

192400 N

192200 N

192000 N

191800 N

Kilo Goldmine Ltd - Adumbi Project

Section Title: 500

Section Level 500.00

Scale 1:4000.0

Date: 24/04/12

Section Width:  
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N



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192600 N

192400 N

192000 N

191800 N

594800 E

595000 E

595200 E

595400 E

595600 E

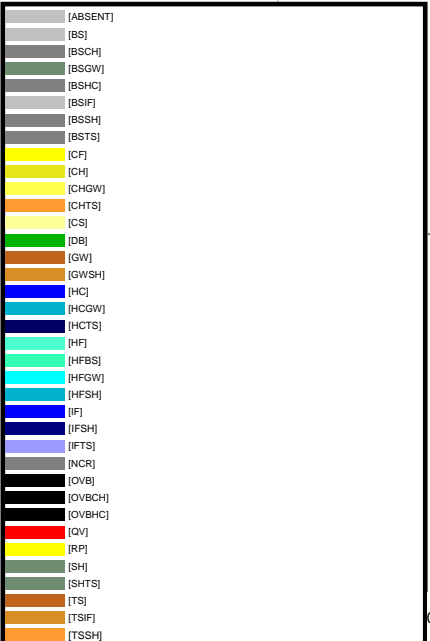
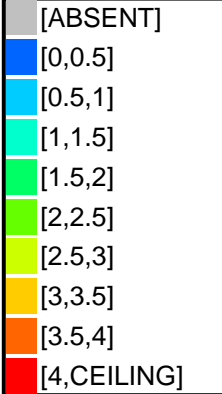
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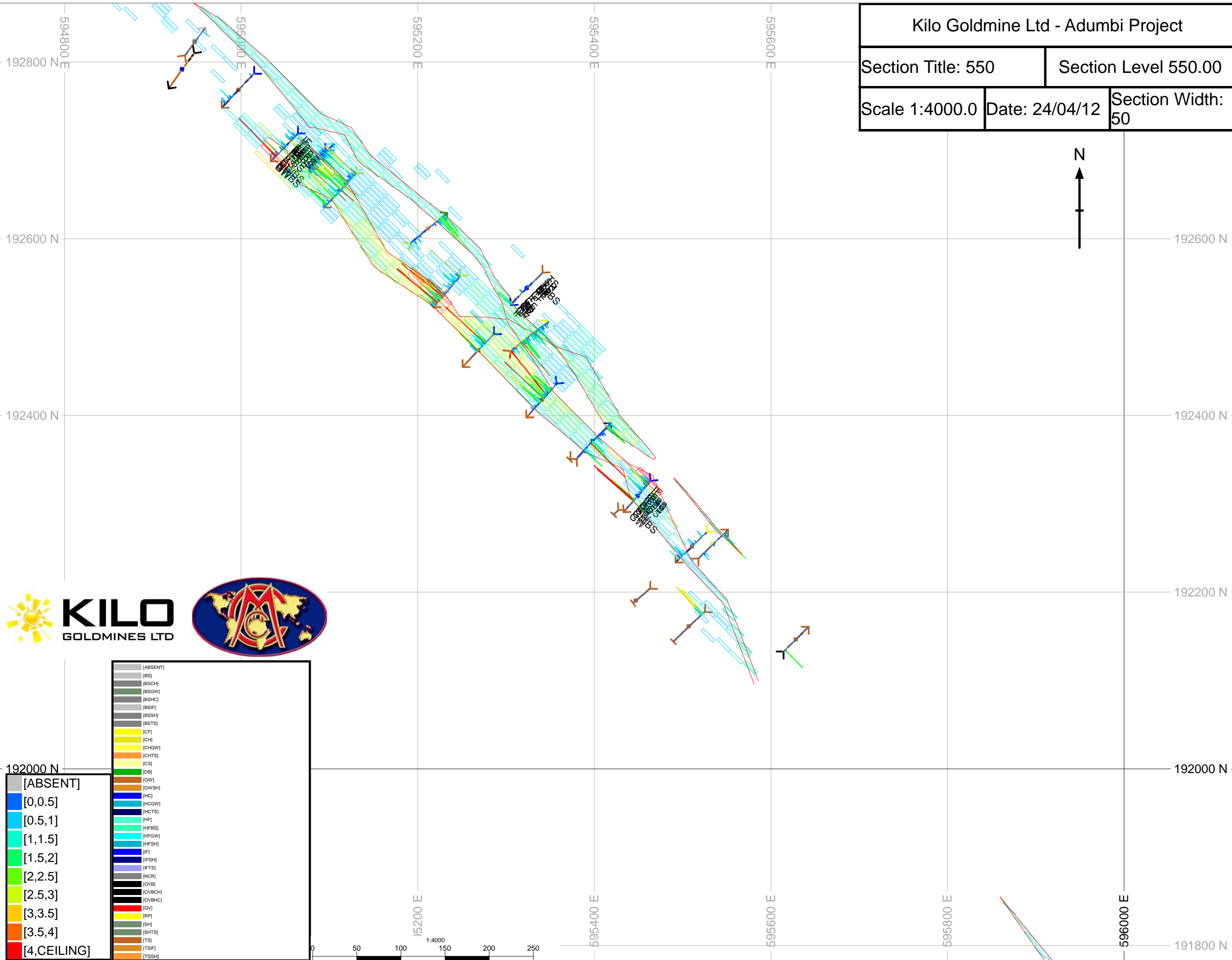
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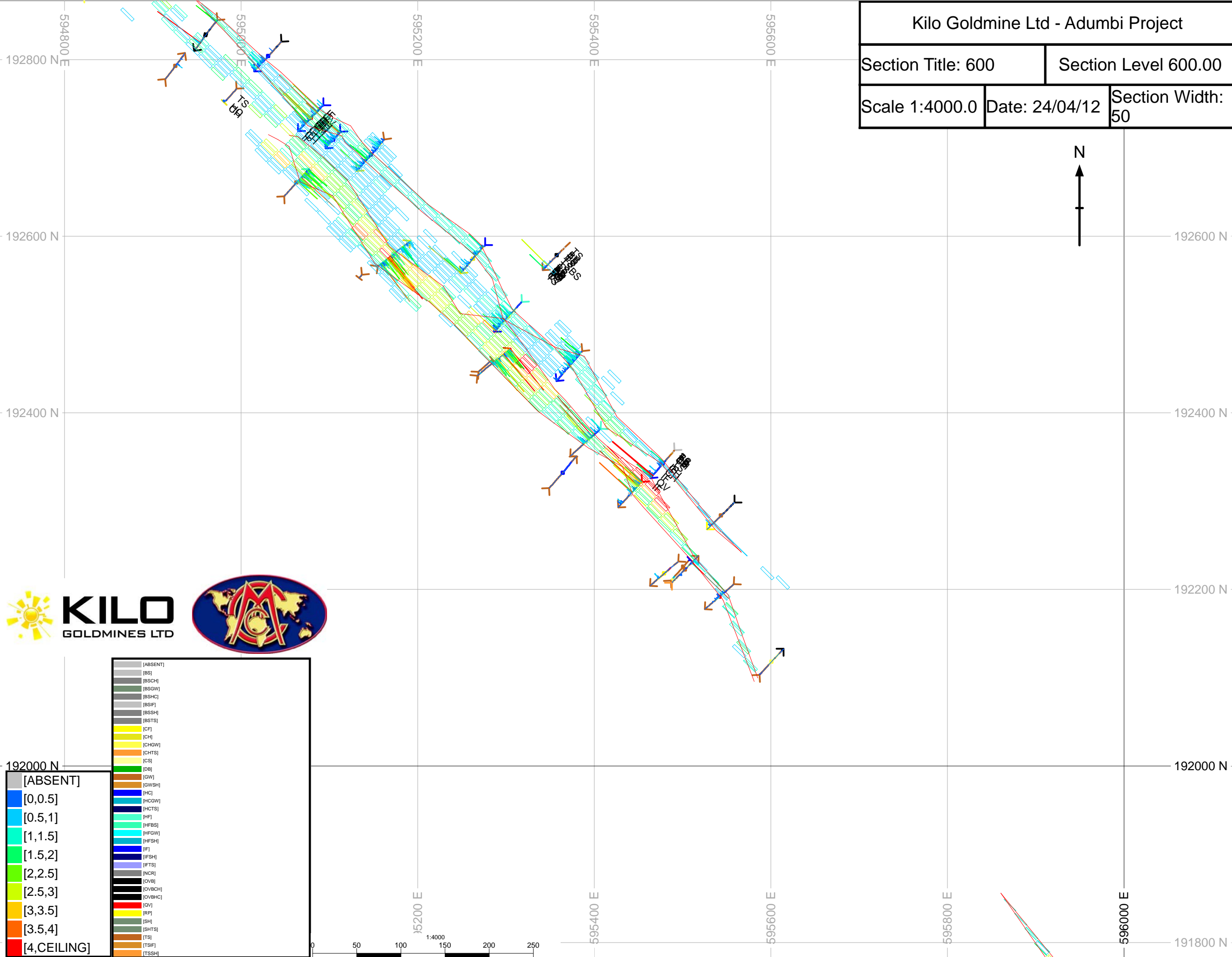
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Kilo Goldmine Ltd - Adumbi Project		
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Kilo Goldmine Ltd - Adumbi Project		
Section Title: 600		Section Level 600.00
Scale 1:4000.0	Date: 24/04/12	Section Width: 50





Kilo Goldmine Ltd - Adumbi Project

Section Title: 650

Section Level 650.00

Scale 1:4000.0

Date: 24/04/12

Section Width:  
50

N



192600 N

192400 N

192200 N

192000 N

191800 N

192800 N

192600 N

192400 N

192000 N

595200 E

595400 E

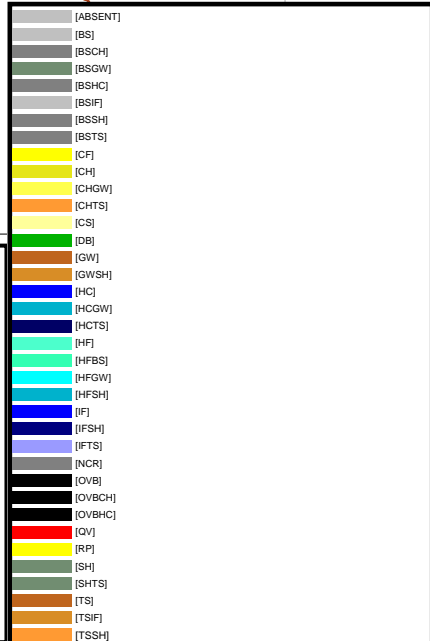
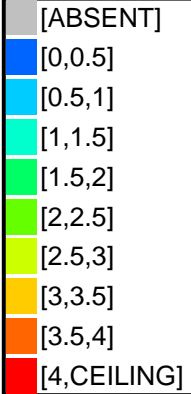
595600 E

595200 E

595400 E

595600 E

596000 E



Kilo Goldmine Ltd - Adumbi Project

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Section Level 700.00

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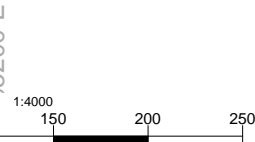
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Kilo Goldmine Ltd - Adumbi Project

Section Title: 750

Section Level 750.00

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