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**TECHNICAL REPORT AND
UPDATED MINERAL RESOURCE ESTIMATE
OF THE BOUMADINE POLYMETALLIC PROJECT,
KINGDOM OF MOROCCO**

**LONGITUDE 4°55'18" WEST AND LATITUDE 31°24'40" NORTH
UTM WGS 84 ZONE 30R 317,310 m EAST AND 3,476,770 m NORTH**

FOR

AYA GOLD & SILVER INC.

**NI 43-101 & 43-101F1
TECHNICAL REPORT**

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1.0 EXECUTIVE SUMMARY

This Technical Report (the “Report”) and updated Mineral Resource Estimate (“MRE”) of the Boumadine Polymetallic Project, Kingdom of Morocco, was completed by P&E Mining Consultants Inc. (“P&E”) at the request of Aya Gold & Silver Inc (“Aya”). The Report has an effective date of May 8, 2024. Aya is a reporting issuer and trades on the TSX trading under the symbol “AYA”, with its head office located at: Suite 132, 1320 Graham, Ville Mont-Royal, Québec, H3P 3C8.

1.1 PROPERTY DESCRIPTION AND LOCATION

The Boumadine Property (also known as Boumaadine, Boumâadine, and Bou Madine) is located in the Province of Errachidia, Kingdom of Morocco, ~220 km east of the City of Quarzazate and 70 km southwest of the City of Errachidia. Aya’s Property in the Boumadine area consists of four Licence d’exploitation (mining permits) and ten Permis de recherche (exploration permits) totalling 141 km² in size. All of the mining permits and exploration permits are in good standing as of the effective date of this Report. Mining Permit LE-383661 (31.7 km²) covers the historical Boumadine Mine, the Boumadine Camp, and the current Mineral Resource Estimate described in Section 14 of this Report.

Aya (known as Maya Gold & Silver at the time of the Acquisition Agreement) and Office National des Hydrocarbures et des Mines (“ONHYM”) signed an agreement on October 9, 2012, for the acquisition of the Boumadine polymetallic deposit. Under the terms of Agreement, Aya acquired 85% of the Boumadine Project (permit LE-383661) for total cash payments of (MAD 28,000,000, ~US\$2,800,000). A new Moroccan company, Boumadine Global Mining (“BGM”), was created with Aya (85%) and ONHYM (15%) as shareholders. The mining title of the Boumadine Property was transferred to the BGM company by ONHYM.

Aya and ONHYM signed an agreement for the development and exploitation of the Boumadine polymetallic deposit; Aya holds 85% and ONHYM holds 15% stake in its share capital of the Boumadine licence through BGM. The participation of ONHYM is subject to dilution if they fail to invest 15% in the budget after Aya matches all the previous investment from ONHYM. ONHYM will receive a 3% royalty on BGM sales revenue from the first year of operation. Aya will receive a management fee equal to 2.75% of the revenue from BGM.

1.2 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Boumadine Property is located in the Errachidia Province of the Meknès-Tafilalet Region, in the Anti-Atlas Mountains. It is accessible via the National Highway 10 (N10), ~220 km east-northeast from Ouarzazate City or ~70 km southwest from Errachidia City. Tinejdad, the nearest town, is ~16 km north from the historical Boumadine Mine. The nearest village, Bouyoud, is 4 km away. The Property is accessible from Tinejdad by all-terrain vehicle on a paved and gravel road.

The Property has a Sahara climate, which falls under the category of a hot desert climate, also known as a "hot arid climate" (Köppen climate classification *BWh*). Summers are hot, with daytime temperatures $>40^{\circ}\text{C}$. Winters are generally mild, with daytime temperatures ranging from mild to warm; nighttime temperatures can be cool, but freezing conditions are uncommon. The region receives very little rainfall throughout the year, most of which occurs in winter. Field work at Boumadine can be carried out year-round.

The Property is accessible by two roads: 1) a 16-km dirt road southwards from Tinejdad; and 2) a 4-km dirt road from the east through the village of Bouyoud. The National Highway 10 (N10) goes through the City of Tinejdad and connects to Ouarzazate City to the west and Errachidia City to the east of Tinejdad. The nearest power line to the Property is 3.8 km away.

On the Property, there are many dirt roads and paths that lead to former shafts and other remnants of the historical mining infrastructure. Three generators are on-site to provide electricity. The facilities on-site have been adapted to support exploration work. They include an office, drill core shack, the Afrilabs sample preparation laboratory, drill contractor workshop, and drill contractor camp. Water is currently sourced from historical underground workings and from wells.

The physiography of Boumadine Property is characterized by its desert setting, with influences from the nearby Atlas Mountains. The topography of the area is marked by ridges and hills mostly, with altitude ranging between 980 and 1,300 m asl. The site and its surroundings exhibit characteristics typical of a desert landscape, with vast expanses of arid and rocky terrain. Vegetation in the Boumadine area consists mainly of desert plants, such as *Acacia Raddiana* and *Tamarix Amplexicaul*. Drought-resistant grasses may be found and provide some ground cover. Oases and palm trees are notable features in this region.

The Boumadine site is in close proximity to the Ziz River, which flows through the centre of the Town of Tinejdad. The River, along with its valley, contributes to the oasis environment with palm groves, particularly date palms. Group of nomads pass by the Boumadine Property with their livestock of camels or goats. Historical artisanal mining activities have been recognized at several places on the Boumadine Property. Historical extraction work focused on barite and lead veins.

Mine workers and other personnel are available from Tinejdad. Errachidia City (formerly Ksar souk) is the closest major urban centre. Errachidia has an international airport with access to Casablanca and it is also accessible by road from Marrakech, ~420 km away. Basic supplies, such as food and limited accommodation, are available at Tinejdad; Errachidia offers greater diversity in supplies. Special items must be purchased from Ouarzazate or Marrakech.

1.3 HISTORY

The historical Boumadine Mine is one of the oldest known mines in the Kingdom of Morocco. It was probably exploited by the Portuguese in the 15th and 16th centuries. They extracted the oxidized part of the polymetallic veins to a depth of as much as 20 m. Such workings are found along a north-south strike length of 4.2 km on the Boumadine Property.

Between 1956 and 1998, exploration and mining activities in the Boumadine area were completed by the Bureau de Recherches et de Participations Minières ("BRPM"), with and without partners.

These activities included mineral prospecting, geophysical surveys, drilling, mineralogical studies, mineral resource estimations, metallurgical testwork, engineering and economic studies, shaft excavation, and underground development and mining. Underground mining from 1986 to 1992 produced 261,485 t of mineralized material from four mining levels for mineral processing on-site.

In 2013, Maya Gold and Silver Inc. (“Maya”; precursor entity to Aya Gold & Silver) acquired the Project through a Joint Venture with the ONHYM (new entity of the BRPM) on a 85%/15% basis, respectively. Between 2013 and 2016, Maya completed geological mapping and grab sampling of the historical mineralized structures. In 2017, Maya completed a drilling program to confirm the historical mineral resources. Fourteen drill holes totalling 3,158 m were completed over the Central, South and Tizi Zones. Between 2018 and 2020, Maya completed a sampling program on two historical tailings deposits and 9,503 m of diamond drilling on the South, Central, North, Imariren and Tizi Zones. In addition, Maya completed a drone survey over the Boumadine Property.

Maya announced its name change to Aya in a Company press release dated July 31, 2020.

1.4 GEOLOGICAL SETTING, MINERALIZATION, DEPOSIT TYPE

The Boumadine Property is located at the eastern end of the Anti-Atlas Mountain Range, which extends east-northeast to west-southwest, over >600 km from the Atlantic Ocean in the west to the interior of the African Plate in the east. The Boumadine polymetallic deposit (Ag, Au, Pb, Cu, Zn) is located on the northwest side of the Ougnat Massif (or Boutonnière). The geology of the Massif consists of a Neoproterozoic metasedimentary basement overlain unconformably by a Late Neoproterozoic volcano-sedimentary rock sequence and by Paleozoic lacustrine sedimentary and minor volcanic rocks. The basement consists of sandstone, pelites and greywackes that is intruded locally by granite, granodiorite, and diorite bodies. The volcano-sedimentary sequence consists of felsic and mafic volcanic rock units separated by volcano-sedimentary units.

The Tamerzaga-Timrachine Formation (“TTF”), which consists of ignimbrites, rhyodacite and andesite tuffs and volcanoclastics, hosts the mineralization at Boumadine. The felsic tuffs consist of angular to rounded cm-size felsic fragments, quartz eyes, plagioclase grains, and locally mafic fragments, and sits unconformably on mafic tuffs. Mafic tuffs consist of amphibole and fragments/clasts of sedimentary rocks. Mafic tuffs are interpreted as underwater-deposited volcanoclastic eruptives. The TTF is intruded by dolerite, microdiorite and andesite dykes. The Ougnat Massif area was subjected to Neoproterozoic shearing that generated regional-scale faults trending N30°E and associated secondary fractures. The area has also been affected by a late-stage series of north-south extensional fractures that were subsequently reactivated by a compressive Hercynian tectonic event.

Two hydrothermal alteration events are recognized on the Property. The first alteration event affected the felsic tuff sequence as phyllic alteration (quartz-sericite-pyrite). Proximal to massive sulphide veins (1 to 5 m thick), there is an advanced clay alteration composed of kaolinite, pyrophyllite and vuggy silica. The second sequence of alteration affects mainly the underlying mafic tuffs and consists of propylitic alteration (epidote and chlorite). Near the veins, the alteration

minerals are black chlorite, pyrophyllite and pyrite. The transition between these two alteration events is relatively sharp and consistent with the change in tuff composition.

Due to the extensive weathering to clay minerals, the Boumadine Deposit has a very light colour that contrasts with the surrounding landscape. The mantos, “chapeau de fer” or “iron cap” alteration extends from 20 to 50 m depth. The mantos consists principally of goethite and jarosite with sparse hematite and no lepidochrosite. This mineralogical assemblage indicates that the oxidation fluids were strongly acidic. In this case, Mn, Zn, Cd, Ni, Co, Pb are highly mobile in the acid and sulphur-rich fluids and are commonly leached at surface. However, Ag, Au, Ba, Sr and Pb are immobile and form stable sulphosalts. The hydroxide-rich “mantos” has been partially mined out by artisanal workers for ochre and precious metals.

The Boumadine Deposit has been traced on surface and in drilling for ~5,200 m along strike. Strike direction varies from mainly northwest to northerly and dips vary from steeply northeast to steeply southwest. The Deposit consists of 15 mineralized domains that have been grouped into five separate zones. The South and Central Zones consist of seven stacked mineralized vein domains. From the south end of the South Zone to the north end of the Central Zone, these domains extend for 4,600 m along strike, up to 300 to 400 m across strike and up to 1,000 m down-dip. The South Zone appears to be offset dextrally along a northeast-trending fault from the Central Zone. The north end of the Central Zone appears to be offset sinistrally along a northeast-trending fault from the North Zone. The North Zone consists of two closely-spaced mineralized vein domains. This Zone is 650 m long, 5 to 10 m in thickness and 500 m down-dip. It strikes northwest and dips steeply southwest. The North Zone appears truncated by the Imarinen Zone. The Imarinen Zone and the Tizi Zone are two sub-parallel, single mineralized vein domains that are 200 m apart in the south and 500 m apart in the north, strike northerly, and dip vertically. Each of these two zones has been traced for 1,000 m along strike and as much as 600 m down-dip.

The Boumadine mineralized zones consist of 1 to 4 m-wide massive sulphide lenses/veins oriented N20°W and dipping 70° east. The massive sulphide veins (>70% sulphide) consist of pyrite, sphalerite, galena, arsenopyrite and chalcopyrite, with subordinate amounts of cassiterite, silver-rich sulphosalts, stannite, enargite, bismuthinite, native copper and bismuth. The main mineralization zone is surrounded by a 1 to 10 m thick halo of 10 to 30% disseminated pyrite and two types of veinlets: 1) quartz-carbonate-galena-sphalerite veinlets; and 2) massive pyrite veinlets. Geochemically, there is a strong positive correlation of gold with silver and copper and a weaker correlation of zinc with lead and molybdenum. The Boumadine Deposit may have formed as an epithermal polymetallic deposit in a shallow submarine setting.

1.5 EXPLORATION AND DRILLING

Exploration activities completed by Aya on the Boumadine Property since 2020 include surface trenching, satellite-based hyperspectral surveys, mineral prospecting, geological mapping, and grab sampling and assaying. These programs were successful in finding and confirming evidence of mineralization on surface.

Since May 2022, Aya has completed 266 diamond drill holes on the Boumadine Property totalling 89,475 m. Aya drilling programs focused mainly on extending the mineralization of the three main zones (North Zone, Central Zone and South Zone) and to prove continuity among them, forming

a single ‘Main Trend’. In addition, all historical drill holes from 2018 to 2021 were re-logged and resampled by Aya in 2023 for a total of 77 drill holes and 9,510 m of drill core.

1.6 SAMPLE ANALYSES AND DATA VERIFICATION

Aya implemented and monitored a thorough QA/QC program for the drilling completed at the Boumadine Project over the 2018 to 2024 period. Examination of QA/QC results for all recent sampling indicates no material issues with accuracy, contamination or precision in the data. In the opinion of the Authors, the sample preparation, security and analytical procedures are adequate, and the data are of good quality and satisfactory for use in the current Mineral Resource Estimate.

Verification of the Boumadine Project data, used for the current Mineral Resource Estimate, has been undertaken by the Authors, including a site visit, due diligence sampling, verification of drill hole assay data from electronic assay files, and assessment of the available QA/QC data. The Authors consider that sufficient verification of the Project data has been undertaken and that the supplied data are of good quality and suitable for use in the current Mineral Resource Estimate.

1.7 MINERAL PROCESSING AND METALLURGICAL TESTING

Based on 2023 metallurgical testwork completed by SGS Canada Inc., Aya envisions a two-phase metal recovery process. Phase 1 is a sulphide flotation stage for recovery of Pb and Zn and partial recovery of Au and Ag. Phase 2 is an oxidation and leaching stage for recovery of Au and Ag. Oxidation of the pyrite concentrate using the Albion Process followed by cyanide leaching produced the highest precious metal recoveries. Total recoveries were 89% Ag, 85% Au, 85% Pb and 72% Zn. Next steps include continued refinement of the metallurgical testwork, particularly methods for pyrite concentrate oxidation, such as POX or roasting, and evaluation of key reagents and input parameters.

1.8 MINERAL RESOURCE ESTIMATE

The Mineral Resource Estimate (“MRE”) of the Boumadine Deposit is amenable to conventional open-pit and to underground mining methods.

The MRE contains an Indicated Mineral Resource of 2.0 Mt grading 113 g/t Ag, 2.51 g/t Au, 4.32% Zn and 1.07% Pb containing an estimated 7.4 Moz of Ag, 165 koz of Au, 88 kt of Zn and 22 kt of Pb, and an Inferred Mineral Resource of 23.6 Mt grading 85 g/t Ag, 2.62 g/t Au, 2.32% Zn, and 0.84% Pb containing an estimated 64.7 Moz of Ag, 1.98 Moz of Au, 546 kt of Zn and 198 kt of Pb, as shown in Table 1.1. The MRE has an effective date of April 15, 2024. Approximately 41% of the Inferred Mineral Resource is pit-constrained and reported above a cut-off NSR value of \$95/t, and 59% is deemed for underground development and reported above a cut-off NSR value of US\$125/t. The Mineral Resource has an effective date of February 23, 2024. The sensitivity of the out-of-pit Mineral Resource to changes in potentially economic NSR cut-off value was also calculated and the results are listed in Table 1.2.

A total of 367 drill holes totalling 107,676 m were available for Mineral Resource modelling. Mineralization models were developed by Aya and reviewed and accepted by the Authors.

Fifteen individual mineralized domains were identified through drilling and surface sampling. The modelled mineralized domains are constrained by individual wireframes, based on sulphide content and a nominal 100 g/t AgEq cut-off value. Mineralized wireframes were used as hard constraining boundaries for the purposes of block coding, statistical analysis, compositing limits, and estimation of the Mineral Resources.

A rotated three-dimensional block model, with 2.5 m x 5.0 m x 5.0 m blocks, was used for the Mineral Resource Estimate. The block model consists of estimated Au, Ag, Cu, Pb and Zn grades, bulk density, block volume inclusion percent, and classification criteria. Net smelter return ("NSR"), AuEq and AgEq block values were subsequently calculated from the estimated Ag, Au, Zn, Pb and Cu grades, incorporating metal prices, metallurgical recoveries, concentrate freight and smelter charges.

Sampled assays were composited to a 1.00 m standard length. Grades were estimated using Ordinary Kriging ("OK") of the Main Deposit (or Central Zone) for Au, and Inverse Distance Squared (ID²) estimation of the remaining domains, with two estimation passes. Composites were capped prior to estimation. Composite samples were selected within an oriented search ellipse, based on domain orientation and grade trends. Individual mineralized domain blanket bulk density values, as determined using bulk density measurements taken from drill core, were applied.

Classification criteria were determined from observed grade, geological continuity and variography. Grade blocks estimated in the first pass that used a minimum of two drill holes and with an average distance between composites of <50 m were classified as Indicated, and all remaining estimated grade blocks were classified as Inferred.

Pit-constrained Mineral Resources have been estimated within an optimized pit shell for the purpose of reporting Mineral Resources and includes Indicated and Inferred Mineral Resources. The pit-constrained Mineral Resources are reported using a NSR cut-off value of US\$95/t. Out-of-pit Mineral Resources are reported beneath the pit shell which exhibit historical continuity and reasonable potential for extraction by longhole mining methods. Out-of-pit Mineral Resources are reported using an NSR cut-off of US\$125/t.

TABLE 1.1
BOUMADINE MRE AS OF APRIL 15, 2024 ⁽¹⁻¹²⁾

Class	Cut-off NSR US\$/t	Tonnes (kt)	Average Grade							Contained Metal						
			Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)	AgEq (g/t)	AuEq (g/t)	Ag (koz)	Au (koz)	Cu (kt)	Pb (kt)	Zn (kt)	AgEq (koz)	AuEq (koz)
Pit-Constrained																
Indicated	95	995	145	2.71	0.2	1.6	5.9	634	7.4	4,647	87	2	16	59	20,299	237
Inferred	95	8,474	103	2.97	0.1	0.8	2.5	475	5.54	28,087	808	8	67	215	129,478	1,510
Out-of-Pit																
Indicated	125	1,046	82	2.33	0.1	0.6	2.8	402	4.69	2,751	78	1	6	29	13,533	158
Inferred	125	15,096	76	2.42	0.1	0.9	2.2	389	4.53	36,653	1,175	11	131	330	188,663	2,198
Total																
Indicated	95/125	2,042	113	2.51	0.1	1.1	4.3	515	6.01	7,398	165	3	22	88	33,832	395
Inferred	95/125	23,569	85	2.62	0.1	0.8	2.3	420	4.89	64,740	1,983	19	198	546	318,141	3,708

Notes:

1. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. There is no certainty that Mineral Resources will be converted to Mineral Reserves.
2. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
3. The Mineral Resources were estimated in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (the "CIM") Standards on Mineral Resources and Mineral Reserves Definitions (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
4. A silver price of US\$21/oz with a process recovery of 89%, a gold price of US\$1,900/oz with a process recovery of 85%, a zinc price of US\$1.20/lb with a process recovery of 72%, a lead price of US\$1.00/lb with a process recovery of 85%, and a copper price of US\$4.00/lb with a process recovery of 75% were used.
5. $AgEq = Ag(g/t) + (Au(g/t) * Au\ price/gram * Au\ recovery) / (Ag\ price/gram * Ag\ recovery) + Zn(\%) * Zn\ price/lb * Zn\ recovery / (Ag\ price/gram * Ag\ recovery) * 685.7147973 + Pb(\%) * Pb\ price/lb * Pb\ recovery / (Ag\ price/gram * Ag\ recovery) * 685.7147973 + Cu(\%) * Cu\ price/lb * Cu\ recovery / (Ag\ price/gram * Ag\ recovery) * 685.7147973$

6. $AuEq = Au(g/t) + (Ag(g/t) * Ag \text{ price/gram} * Ag \text{ recovery}) / (Au \text{ price/gram} * Au \text{ recovery}) + Zn(\%) * Zn \text{ price/lb} * Zn \text{ recovery} / (Au \text{ price/gram} * Au \text{ recovery}) * 685.7147973 + Pb(\%) * Pb \text{ price/lb} * Pb \text{ recovery} / (Au \text{ price/gram} * Au \text{ recovery}) * 685.7147973 + Cu(\%) * Cu \text{ price/lb} * Cu \text{ recovery} / (Au \text{ price/gram} * Au \text{ recovery}) * 685.7147973$
7. The constraining pit optimization parameters were US\$3/t for of mineralized material mining. US\$2/t for waste mining US\$89/t for processing and US\$6/t for G&A totalling US\$95/t for a cut-off and 50-degree pit slopes.
8. The out-of-pit parameters used a US\$30/t mining cost, US\$89/t processing cost and US\$6/t G&A totalling US\$125/t for a cut-off The out-of-pit Mineral Resource grade blocks were quantified above the \$125 NSR cut-off, below the constraining pit shell and within the constraining mineralized wireframes. Out-of-pit Mineral Resources exhibit continuity and reasonable potential for extraction by the longhole underground mining method.
9. Individual calculations in tables and totals may not sum due to rounding of original numbers.
10. Grade capping of 800 g/t Ag, 30 g/t Au, 28% Zn, 10% Pb and 1.4% Cu was applied to composites before grade estimation.
11. Bulk density was evaluated separately for each individual vein with values ranging from 3.20 to 4.00 t/m³ determined from drill core samples and used for the MRE. For oxidized and transitional material, a bulk density of 2.65 t/m³ was used.
12. 1.0 m composites were used during grade estimation.

TABLE 1.2
CUT-OFF SENSITIVITY OF OUT-OF-PIT MRE ⁽¹⁻¹²⁾

Cut-off NSR US\$	Tonnes (kt)	Ag (g/t)	Ag (koz)	Au (g/t)	Au (koz)	Cu (%)	Pb (%)	Zn (%)	AgEq (g/t)	AgEq (koz)	AuEq (g/t)	AuEq (koz)
Indicated Out-of-Pit Resources												
145	895	88	2,529	2.48	71	0.12	0.59	2.98	428	12,307	4.99	144
140	930	86	2,585	2.44	73	0.12	0.59	2.94	422	12,609	4.92	147
135	962	85	2,636	2.41	75	0.12	0.59	2.9	416	12,872	4.85	150
130	997	84	2,690	2.37	76	0.12	0.59	2.86	410	13,153	4.78	153
125	1,046	82	2,751	2.33	78	0.11	0.58	2.79	402	13,533	4.69	158
120	1,110	79	2,815	2.28	81	0.11	0.58	2.72	392	13,999	4.57	163
115	1,202	75	2,888	2.22	86	0.11	0.58	2.62	379	14,649	4.42	171
110	1,250	73	2,944	2.18	88	0.1	0.58	2.58	373	14,983	4.34	175
105	1,288	72	2,988	2.15	89	0.1	0.58	2.56	368	15,236	4.29	178

TABLE 1.2 CUT-OFF SENSITIVITY OF OUT-OF-PIT MRE ⁽¹⁻¹²⁾												
Cut-off NSR US\$	Tonnes (kt)	Ag (g/t)	Ag (koz)	Au (g/t)	Au (koz)	Cu (%)	Pb (%)	Zn (%)	AgEq (g/t)	AgEq (koz)	AuEq (g/t)	AuEq (koz)
Inferred Out-of-Pit Resources												
145	11,525	82	30,503	2.78	1031	0.08	0.9	2.22	429	159,110	5	1,854
140	12,169	81	31,662	2.71	1060	0.08	0.89	2.21	421	164,749	4.91	1,920
135	12,960	79	33,068	2.62	1093	0.08	0.89	2.2	412	171,489	4.8	1,998
130	13,867	78	34,627	2.53	1129	0.07	0.88	2.2	401	178,959	4.68	2,085
125	15,096	76	36,653	2.42	1175	0.07	0.87	2.19	389	188,663	4.53	2,198
120	16,295	74	38,554	2.33	1220	0.07	0.85	2.17	377	197,736	4.4	2,304
115	17,362	72	40,051	2.26	1263	0.07	0.83	2.13	368	205,358	4.29	2,393
110	18,602	70	41,635	2.19	1310	0.07	0.82	2.09	358	213,877	4.17	2,492
105	20,004	67	43,277	2.12	1366	0.06	0.79	2.03	347	222,949	4.04	2,598

Notes 1-12 listed below Table 1.1.

1.9 ENVIRONMENTAL STUDIES, PERMITS AND SOCIAL OR COMMUNITY IMPACT

The Boumadine Project may require several permits from the Moroccan Government, and the requirement to complete an Environmental and Social Impact Assessment (“ESIA”) by the Moroccan Law No. 12-03 on Environmental Impact Assessments. The ESIA will establish the comprehensive regulatory framework for the Project.

The Boumadine Project is a joint-venture between the ONHYM (15%) and Aya (85%). The land is understood to be held under the collective land status. In Morocco, collective lands are used for grazing, farming, forests, quarries, and land in urban and peri-urban areas. The number of traditional communities ranges from 4,500 to 5,500 ethnic groupings, comprising almost 2.5 million collectives. The legal status of collective lands is set out in a dahir dating from 1919. A national program started in 2021 to identify land rights with the intent to formalize land ownership in collective lands. These rights are managed by the Direction des affaires rurales, part of the Ministry of the Interior. Aya will establish communication with the relevant authorities at the governorate in the Province of Errachidia, in order to commence the process of establishing land agreements between Aya and the landowners.

Aya’s Health and Safety, Environment and Community (“HSEC”) Policy sets out clear parameters for governance during project development. The Policy requires: compliance with all laws and regulations in force in the countries where Aya operates; implementation of an environmental and social management system (“ESMS”) to identify, reduce or mitigate risks to sustainable development. This ESMS will include objectives, review and corrective actions allowing continuous improvement; and, where economic or physical displacement cannot be avoided, adherence to IFC Performance Standard 5, including formal consultation throughout the process and seeking to improve the situation of households and communities.

Aya has developed a Tailings Policy, which commits to design, govern, and manage tailings in-line with industry best practice, following guidelines such as those provided by the International Commission on Large Dams, Australian National Committee on Large Dams, and Canadian Dam Association. Aya will work towards aligning its practices with industry best practices.

As per its HSEC Policy, Aya commits to developing a Mine Closure Management Plan for each of its projects, from the earliest stage of Feasibility Studies and updating the Plan regularly during the life of mine (“LoM”). In collaboration with its stakeholders, reclamation planning entails an extensive analysis of land use options, environmental factors, community development concerns and objectives, and measurable performance targets. Aya will progressively complete reclamation as part of its commitment to restore mine sites to a healthy environment. Aya begins restoring disturbed land as soon as it is no longer needed, using best available techniques and developing context-specific measures. During the LoM, Aya strives to develop local capacity and collaborate on economic diversification through community investment programs. Stakeholder engagement will include specific topics in the lead-up to closure, and Aya will complement their social baseline with a social closure impact assessment.

Aya's drive for sustainability involves adopting a precautionary approach and implementing and working on the continuous improvement of its Environmental and Social Management System ("ESMS"). The precautionary approach is the process for investigating, addressing and mitigating how the Corporation's actions could impact the environment and host communities. The ESMS is based on best practice from the International Finance Corporation Performance Standards and the European Bank for Reconstruction and Development that will help the Corporation monitor status and progress in upholding its many legal, social and environmental responsibilities. The ESMS incorporates a 'Plan, Do, Check, Act' process, thereby encouraging continuous improvement in sustainability management, and is based on the ISO 14001 environmental standard and the ISO 45001 occupational H&S standard. Aya's key HSEC policies are posted on its website (www.ayagoldsilver.com).

1.10 CONCLUSIONS AND RECOMMENDATIONS

Aya owns or controls 14 mining and exploration claims in the Boumadine Property area (141 km²) in the eastern part of the Kingdom of Morocco. Structurally-controlled, mainly silver-gold polymetallic sulphide mineralization is currently defined in five separate zones along an ~5.2 km strike length that together make-up the Boumadine Deposit. Additional mineralized zones and mineral occurrences are known in the area.

Additional expenditures are recommended by the Authors for the following activities:

- Drilling to advance Inferred to Indicated Mineral Resources;
- Drilling down-dip in order to develop additional Mineral Resources at depth;
- Airborne geophysical surveys to generate priority targets for future drill testing;
- Follow-up geological mapping, mineral prospecting, and assays;
- Development of a comprehensive bulk density model;
- Investigate grade capping thresholds by individual mineralized domain;
- Review grade anisotropy by individual mineralized domain; and
- Complete a Preliminary Economic Assessment of the Boumadine Project.

The Authors also recommend that Aya continue with the current QC protocol and monitor QC data, and continue refining the metallurgical testwork for improved process recoveries.

The estimated cost of the recommended work program is US\$52.1M, which includes 10% contingency (without applicable taxes) (Table 1.3). Phase 1 of the recommended work program should be completed in 2024 and Phase 2 in 2025. Phase 2 is contingent on the results of Phase 1.

TABLE 1.3 RECOMMENDED PHASE1 AND PHASE 2 PROGRAMS AND BUDGETS FOR 2024-2025				
Year	Item	Activity	Unit (m)	Cost Estimate (US\$)
Phase 1				
2024	Pre-Development	Preliminary Economic Assessment		2,000,000
	Exploration	Drilling (all-in costs)	120,000	19,137,000
		Airborne Geophysics (MobileMT Survey)		1,303,200
		Geological Mapping, Mineral Prospecting, Assays		206,920
		Administration and Management		2,594,000
	Sub-Total			25,240,000
	Contingency (10%)			2,524,000
	Total - Phase 1			27,764,000
Phase 2				
2025		Drilling (all-in costs)	120,000	19,137,000
		Administration and Management		3,000,000
	Sub-Total			22,140,000
	Contingency (10%)			2,214,000
	Total - Phase 2			24,354,000

2.0 INTRODUCTION AND TERMS OF REFERENCE

2.1 TERMS OF REFERENCE

This Technical Report on the Boumadine (also known as Boumaadine, Boumâadine, and Bou Madine) Polymetallic Project was prepared by P&E Mining Consultants Inc. (“P&E”) at the request of Mr. Benoit La Salle, President & CEO of Aya Gold & Silver Inc. (“Aya” or the “Company”). Aya is a public, TSX listed company trading under the symbol “AYA”, with its head office located at: Suite 132, 1320 Graham, Ville Mont-Royal, Québec, H3P 3C8. This Technical Report has an effective date of May 8, 2024.

This Technical Report (“the Report”) has been prepared to provide a fully compliant NI 43-101 Technical Report and Updated Mineral Resource Estimate of the existing mineralization at the Boumadine Project (or the “Boumadine Property” or the “Boumadine Deposit”), located in the Kingdom of Morocco. The Project is a joint venture owned by Aya (85%) and l’Office National des Hydrocarbures et des Mines (“ONHYM”) (15%) of the Kingdom of Morocco. Aya (known as Maya Gold & Silver at the time of the Acquisition Agreement) and Office National des Hydrocarbures et des Mines (“ONHYM”) signed an agreement on October 9, 2012, for the acquisition of the Boumadine Property. A new Moroccan company, Boumadine Global Mining (“BGM”), was created with Aya (85%) and ONHYM (15%) as shareholders. The mining title of the Boumadine Property was transferred to the BGM company by ONHYM.

The name change from Maya Gold & Silver Inc. to Aya Gold & Silver Inc. was announced in a Company press release dated July 30, 2020. The Updated Mineral Resource Estimate reported herein is based on up-to-date drilling results and appropriate metal pricing, and is fully conformable to the “CIM Standards on Mineral Resources and Reserves – Definitions (2014) and Best Practices Guidelines (2019)”, as referred to in National Instrument (“NI”) 43-101 and Form 43-101F, Standards of Disclosure for Mineral Projects.

Aya accepts that the qualifications, expertise, experience, competence and professional reputation of P&E’s Principals and Associate Geologists and Engineers are appropriate and relevant for the preparation of this Report. Aya also accepts that P&E’s Principals and Associates are members of professional bodies that are appropriate and relevant for the preparation of this Report. P&E understands that this Technical Report will support the public disclosure requirements of Aya and will be filed on SEDAR+ as required under NI 43-101 disclosure regulations.

2.2 SOURCES OF INFORMATION

2.2.1 Site Visit

Mr. Antoine Yassa, P. Geo., of P&E and an independent Qualified Person under the terms of NI 43-101, completed a site visit to the Boumadine Property from March 12 to 14, 2024. A data verification sampling program was completed on-site (see Section 12 of this Report). Mr. Yassa is a professional geologist with ~40 years of experience in mineral exploration and mining operations, including several years working in hydrothermal precious metal and polymetallic deposits.

2.2.2 Additional Information Sources

The Authors completed the scope of work based largely on information provided by Aya. This Report is based, in part, on internal Company technical reports, and maps, published government reports, company letters and memoranda, and public information as listed in the references (Section 27) of this Report. Several sections from reports authored by other consultants have been directly quoted or summarized in this Technical Report, and are cited where appropriate.

The Authors of this Report have used selected portions or excerpts from material contained in the following NI 43-101 compliant Technical Reports, which are publicly available on SEDAR+ under Aya's profile:

- Boily, M. 2014. The Boumadine Polymetallic (Au, Ag, Zn, Pb, Cu) Deposit, Errachidia Province, Kingdom of Morocco. Prepared for Maya Gold & Silver Inc. by Boily, Michel. Effective Date April 2, 2014. Issue Date April 2, 2014. 217 pages.
- GoldMinds Geoservices Inc. 2019. NI 43-101 Technical Report Preliminary Economic Assessment [of the] Boumadine Polymetallic Deposit, Kingdom of Morocco. Prepared for Maya Gold & Silver Inc. by Duplessis, C., Rachidi, M., Dufort, D. and Rousseau, G. Effective Date: April 24, 2019. Issue Date: May 24, 2019. 304 p.; and

Since 2019, Aya has continued extensive mineral exploration and drilling programs. The results of these programs were disclosed publically in numerous Company press releases and are summarized in Sections 9 and 10 of this Report.

The Authors of this Report have undertaken their own review of the technical aspects contained in this Technical Report. Based on the drill hole and assay database provided by Aya, the Authors have prepared an updated Mineral Resource Estimate of the Boumadine Deposit (Section 14 herein). The Authors have made all reasonable efforts to confirm the authenticity and completeness of the technical data on which this Report is based.

The Authors and Co-authors of each section of this Report are listed in Table 2.1, who in acting as independent Qualified Persons as defined by NI 43-101, take responsibility for those sections of this Report as outlined in the "Certificate of Author" included in Section 28 of this Report. The Authors and Co-authors acknowledge the helpful cooperation of Aya's management and consultants, particularly Mr. David Lalonde, Mr. Pierre Pihouée, and Mr. Patrick Pérez, who quickly addressed all data and material requests, and responded openly and helpfully to all questions. Initial Drafts of Section 4 to 10, and 13 were provided by Aya and have been reviewed, edited and revised by the Authors of this Report. A draft copy of the Report has been reviewed for factual errors by Aya and the Authors have relied on Aya's knowledge of the Property in this regard.

TABLE 2.1 QUALIFIED PERSONS RESPONSIBLE FOR THIS REPORT		
Qualified Person	Contracted By	Sections of Technical Report
William Stone, Ph.D., P.Geo.	P&E Mining Consultants Inc.	2 to 9 and 15 to 24, and Co-Author 1, 25, 26, 27
Fred H. Brown, P.Geo.	P&E Mining Consultants Inc.	Co-Author 1, 14, 25, 26, 27
Jarita Barry, P.Geo.	P&E Mining Consultants Inc.	11 and Co-Author 1, 12, 25, 26, 27
D. Grant Feasby, P.Eng.	P&E Mining Consultants Inc.	13, 20 and Co-Author 1, 25, 26, 27
Antoine Yassa, P.Geo.	P&E Mining Consultants Inc.	10 and Co-Author 1, 12, 25, 26, 27
Eugene Puritch, P.Eng., FEC, CET	P&E Mining Consultants Inc.	Co-Author 1, 14, 25, 26, 27

2.3 UNITS AND CURRENCY

In this Technical Report, all currency amounts are stated in US dollars (“\$”) unless otherwise stated. Commodity prices are typically expressed in US dollars (“US\$”) and will be duly noted where appropriate. Quantities are generally stated in Système International d’Unités (“SI”) metric units including metric tons (“tonnes”, “t”) and kilograms (“kg”) for weight, kilometres (“km”) or metres (“m”) for distance, hectares (“ha”) for area, grams (“g”) and grams per tonne (“g/t”) for metal grades. Platinum group metal (“PGM”), gold and silver grades may also be reported in parts per million (“ppm”) or parts per billion (“ppb”). Copper metal values are reported in percentage (“%”) and parts per billion (“ppb”). Quantities of PGM, gold and silver may also be reported in troy ounces (“oz”), and quantities of copper in avoirdupois pounds (“lb”). Abbreviations and terminology are summarized in Table 2.2 and units in Table 2.3.

Grid coordinates for maps are given in the UTM WGS 84 Zone 30 R or as longitude and latitude.

TABLE 2.2 TERMINOLOGY AND ABBREVIATIONS	
Abbreviation	Meaning
\$	dollar(s)
°	degree(s)
°C	degrees Celsius
<	less than
>	greater than
%	percent
3-D	three-dimensional
AAS	atomic absorption spectrometry
Actlabs	Activation Laboratories Ltd.
Ag	silver
AgEq	silver equivalency
ALS	ALS Laboratory (Australian Laboratory Services), ALS Limited

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
ANCOLD	Australian National Committee on Large Dams
As	arsenic
Au	gold
AuEq	gold equivalency
avg	average
Aya	Aya Gold & Silver Inc.
Ba	barium
BGM	Boumadine Global Mining
BRGM	Bureau des Recherches Géologiques et Minières
BRPM	Bureau de Recherches et de Participations Minières
BWI	ball mill work index
CaO	calcium oxide
Cd	cadmium
CDA	Canadian Dam Association
CGG	Compagnie Générale de Geophysique
CIL	carbon-in-leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	centimetre(s)
CN	cyanide
Co	cobalt
Company, the	Aya Gold & Silver Inc.
CRI	Comité Régional d'Investissement (centre of investment)
CRM(s)	certified reference material(s)
CSA	Canadian Securities Administrators
CSAMT	CONTROLLED-source audio magnetotelluric survey
Cu	copper
d	day
D ₈₀	80% passing size
DAR	Direction des Affaires Rurales
Deposit, the	Boumadine Deposit
E	east
EBRD	European Bank for Reconstruction and Development
ESMS	environmental and social management system
ESIA	Environmental and Social Impact Assessment
FA	fire assay
Fe	iron
g	gram
G&A	General and administration
g/L	grams per litre
g/t	grams of metal per tonne
GISTM	Global Industry Standard on Tailings Management

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
GoldMinds	GoldMinds Geoservices Inc.
ha	hectare(s)
HC	Hot Curing
HSEC	Health and Safety, Environment and Community
ICOLD	International Commission on Large Dams
ICP	inductively coupled plasma
ICP-OES	inductively coupled plasma-optical emission spectroscopy
ID	identification
ID ²	inverse distance squared
IFC	International Finance Corporation
ISO	International Organization for Standardization
ISO/IEC	International Organization for Standardization/International Electrotechnical Commission
k	thousand(s)
kg	kilogram(s)
kg/t	kilogram(s) per tonne
km	kilometre(s)
km ²	square kilometre(s)
koz	thousands of ounces
kt	kilotonne(s), thousands of tonnes
kWh/t	kilowatt hour per tonne
L	litre(s)
lb	pound(s) (weight)
LB	Lime Boiling
LCT(s)	locked cycle testwork(s)
level	mine working level referring to the nominal elevation (m RL), e.g. 4285 level (mine workings at 4285 m RL)
LoM	life of mine
M	million(s)
m	metre(s)
m ³	metres cubed
m asl	metres above sea level
Ma	millions of years
MAD	Moroccan Dirham
mag	magnetic(s)
max.	maximum
Maya	Maya Gold and Silver Inc.
mbs or MBS	metres below surface
Mg	magnesium
min.	minimum
mL	millilitre(s)

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
mm	millimetre(s)
Mn	manganese
Moz	million ounce(s)
MRE	Mineral Resource Estimate
Mt	million(s) tonnes per year
MTEDD	le ministère de transition énergétique et durable or minister of durable energetic transition
N	total number of observations/population size
N	north
N10	National Highway 10
NaCN	sodium cyanide
Ni	nickel
NI or NI 43-101	National Instrument or National Instrument 43-101
NN	Nearest Neighbour
NPV	net present value
NSR	net smelter return
OK	Ordinary Kriging
ONHYM	Office National des Hydrocarbures et des Mines
ORE	ORE Research & Exploration Pty Ltd.
oz	ounce(s)
P ₈₀	80% passing size
P&E	P&E Mining Consultants Inc.
PAX	potassium amyl xanthate
PEA	Preliminary Economic Assessment
Pb	lead
P.Eng.	Professional Engineer
P.Geo.	Professional Geoscientist
POX	pressure oxidation
ppm	parts per million
Project, the	Boumadine Project
Property, the	Boumadine Property
Q1, Q2, Q3, Q4	first quarter, second quarter, third quarter, fourth quarter of the year
QA	quality assurance
QA/QC	quality assurance / quality control
QC	quality control
R ²	the coefficient of determination
Report, the	this Technical Report
RQD	rock quality designation
S	south
S	sulphur
SEDAR	System for Electronic Document Analysis and Retrieval

TABLE 2.2 TERMINOLOGY AND ABBREVIATIONS	
Abbreviation	Meaning
SGS	SGS Canada Inc. / SGS Lakefield Research
Si	silicon
SIPX	sodium isopropyl xanthate
SODECAT	Société de Développement du Cuivre de l'Anti Atlas
SODIM	Société de Développement de l'industrie maricole
Sr	strontium
t	metric tonne(s)
t/m ³	tonnes per cubic metre
Technical Report	(this) NI 43-101 Technical Report
TEM	Transmission Electron Microscopy
TIMA-X	Tescan Integrated Mineral Analyses
TSF	tailings storage facility
TSX-V	Toronto Venture Stock Exchange
TTF	Tamerzaga-Timrachine Formation
URSTM	Unité de recherche et de service en technologie minérale
US\$	United States dollars
UTM	Universal Transverse Mercator
VTEM	Versatile Time Domain Electromagnetic (survey)
W	west
w/w	weight by weight
wireframe	polygons joined together to represent a specific 3-D domain or unit
wt%	weight percent
XRD	x-ray diffraction
Zn	zinc

TABLE 2.2 UNIT MEASUREMENT ABBREVIATIONS			
Abbreviation	Meaning	Abbreviation	Meaning
µm	microns, micrometre	m ³ /h	cubic metre per hour
\$	dollar	m ³ /s	cubic metre per second
\$/t	dollar per metric tonne	m ³ /y	cubic metre per year
%	percent sign	mØ	metre diameter
% w/w	percent solid by weight	m/h	metre per hour
¢/kWh	cent per kilowatt hour	m/s	metre per second
°	degree	Mt	million tonnes
°C	degree Celsius	Mtpy	million tonnes per year
cm	centimetre	min	minute
d	day	min/h	minute per hour
ft	feet	mL	millilitre
GWh	Gigawatt hours	mm	millimetre

TABLE 2.2
UNIT MEASUREMENT ABBREVIATIONS

Abbreviation	Meaning	Abbreviation	Meaning
g/t	grams per tonne	Mt	million tonnes or megatonnes
h	hour	MV	medium voltage
ha	hectare	MVA	mega volt-ampere
hp	horsepower	MW	megawatts
Hz	hertz	oz	ounce (troy)
k	kilo, thousands	Pa	Pascal
kg	kilogram	pH	Measure of acidity
kg/t	kilogram per metric tonne	ppb	part per billion
kHz	kilohertz	ppm	part per million
km	kilometre	s	second
kPa	kilopascal	t or tonne	metric tonne
kt	thousands of tonnes or kilotonnes	tpd	metric tonne per day
kV	kilovolt	t/h	metric tonne per hour
kW	kilowatt	t/h/m	metric tonne per hour per metre
kWh	kilowatt-hour	t/h/m ²	metric tonne per hour per square metre
kWh/t	kilowatt-hour per metric tonne	t/m	metric tonne per month
L	litre	t/m ²	metric tonne per square metre
L/s	litres per second	t/m ³	metric tonne per cubic metre
lb	pound(s)	T	short ton
M	million	tpy	metric tonnes per year
m	metre	V	volt
m ²	square metre	W	Watt
m ³	cubic metre	wt%	weight percent
m ³ /d	cubic metre per day	yr	year

3.0 RELIANCE ON OTHER EXPERTS

3.1 INTRODUCTION

The Authors of this Technical Report have relied on the following other expert reports, which provided information regarding mineral rights, surface rights, property agreements and royalties, sections of this Report.

3.2 MINERAL TENURE AND SURFACE RIGHTS

The Authors have not independently reviewed ownership of the Property area and any underlying mineral tenure, and surface rights. The Authors have fully relied on, and disclaim responsibility for, information derived from Aya, and legal experts retained by Aya for this information through the following document:

- Dentons Morocco May 8, 2024 Legal Opinion / Boumadine Mining Title.

This information is used in Section 4 of this Report.

3.3 ENVIRONMENTAL STUDIES, PERMITS, AND SOCIAL OR COMMUNITY IMPACTS

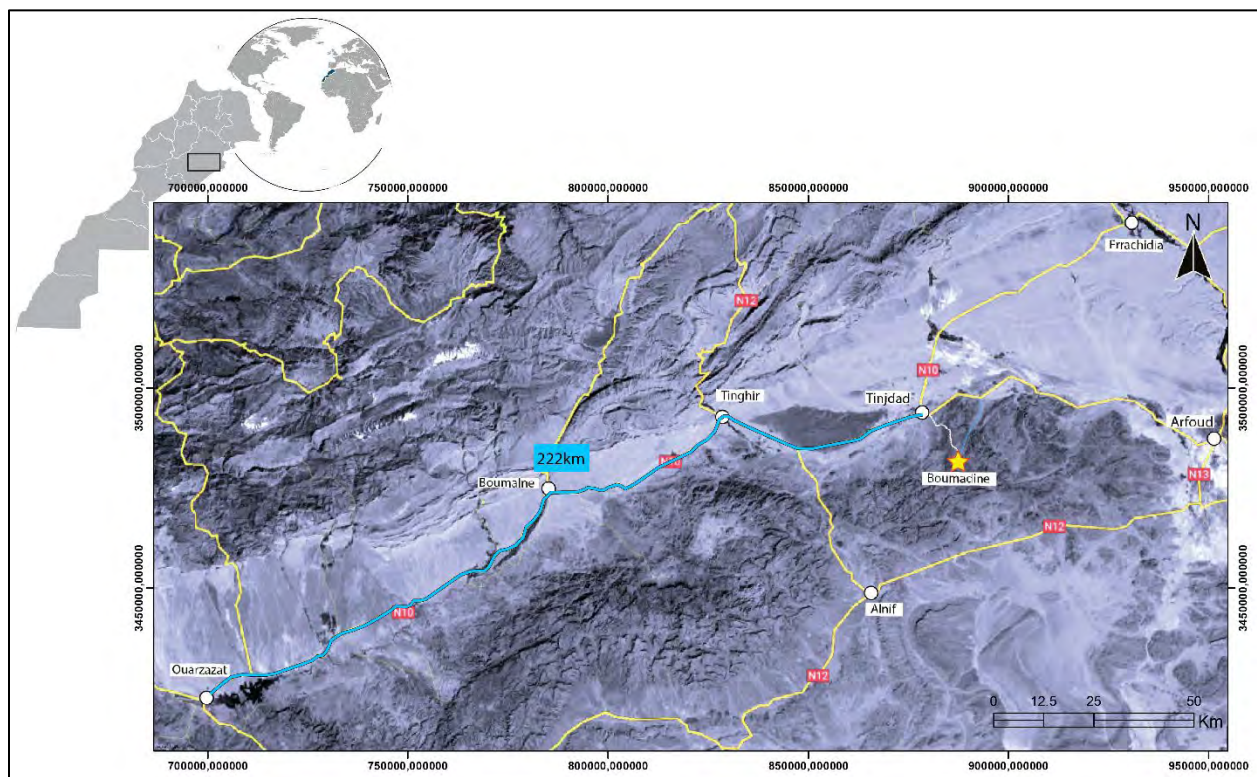
The Authors of this Technical Report have not independently reviewed the environmental studies, permits and social or community impacts related to the Boumadine Property. The Authors have fully relied on, and disclaim responsibility for, information derived by Aya and used in Section 20 of this Report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

The Boumadine Property is located in the Province of Errachidia, Kingdom of Morocco, approximately 220 km east of the City of Quazazate and 70 km southwest of the City of Errachidia (Figure 4.1). The historical Boumadine Mine is located at approximately Longitude 4°55'18" West, Latitude 31°24'40" North (and altitude 1,145 m asl), or in UTM WGS 84 Zone 30 R 317,310 m East and 3,476,770 m North.

FIGURE 4.1 LOCATION OF THE BOUMADINE PROPERTY BETWEEN OUARZAZATE AND ERRACHIDIA, KINGDOM OF MOROCCO

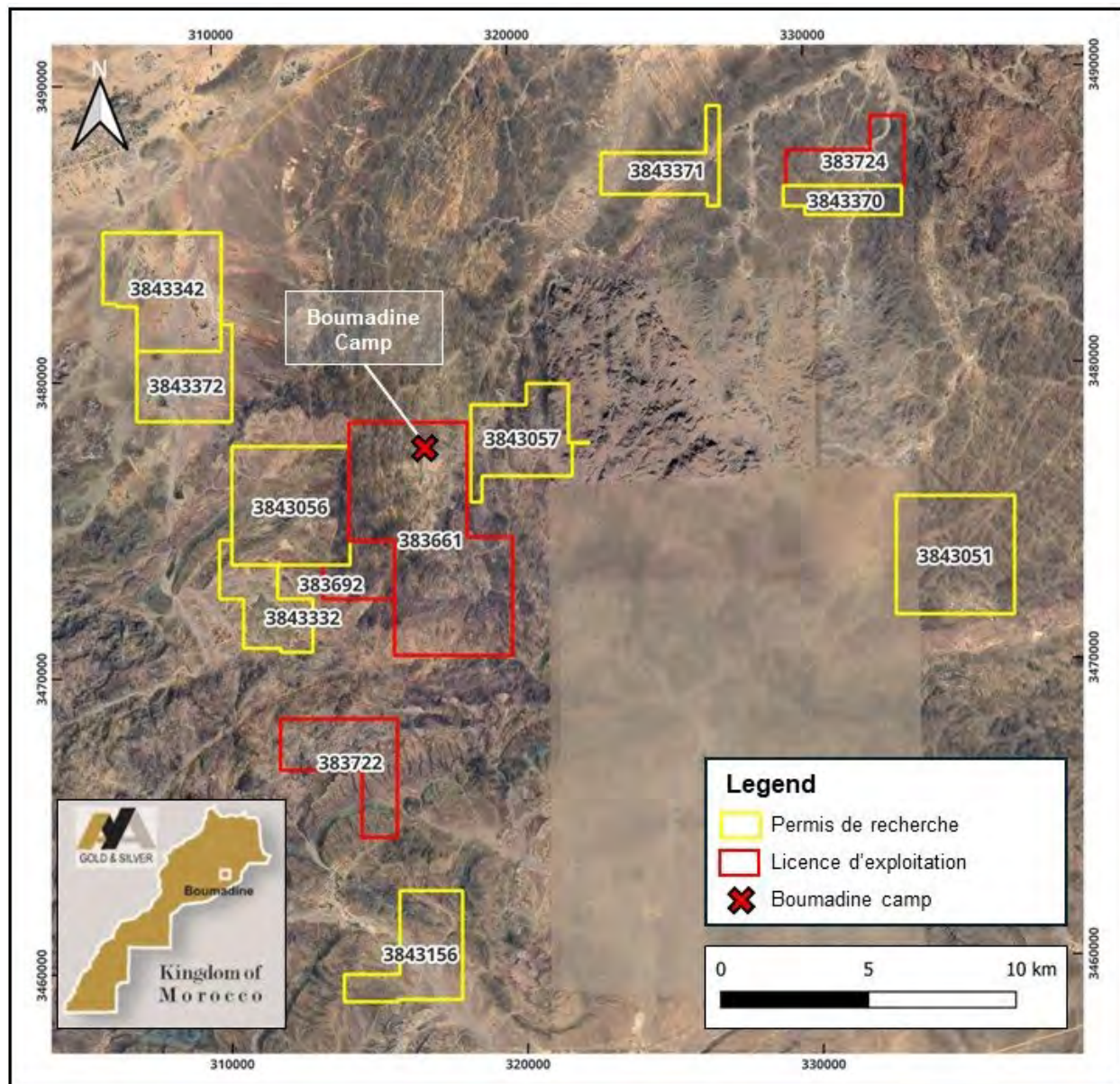


Source: Aya (May 2024)

4.2 PROPERTY DESCRIPTION AND TENURE

Aya's Property in the Boumadine area consists of four Licence d'exploitation (mining permits) and ten Permis de recherche (exploration permits) (Figure 4.2 and Table 4.1). Collectively, the entire Property holding totals 141 km² in size.

FIGURE 4.2 LAND TENURE IN THE BOUMADINE PROPERTY AREA



Source: Aya (April 2024)

Note: Mineral Tenure information effective May 8, 2024.

The contiguous Boumadine Property, the focus of this Report, consists of two mining permits (LE-383661 and LE-383692) and three exploration permits (PR-3843057, PR-3843332 and PR-3843056) that collectively total 66.1 km² in size (Figure 4.2). Mining Permit LE-383661 (31.7 km²) covers the historical Boumadine Mine, Boumadine Camp, and current Mineral Resources described in Section 14 of this Report. The additional nine permits are distributed within a 25 km radius of the contiguous Boumadine Property and collectively cover an additional 73.6 km² in area.

TABLE 4.1
AYA MINING AND EXPLORATION PERMITS IN THE BOUMADINE PROPERTY AREA

Permit ID	Permit Type	Owner	Agreement	Area (km ²)	Granted	Expires
LE-383661*	Licence d'exploitation	BGM	Owned 100% by Aya	31.7	17 May 2016	16 May 2026
LE-383692*	Licence d'exploitation	Société SYSMACO Mining (AGSM)	Option to earn 100% interest	4.0	14 May 2016	13 May 2026
PR-3843057*	Permis de Recherche	ZMSM	Owned 100% by Aya	10.6	10 June 2023	9 June 2026
PR-3843332*	Permis de Recherche	ZMSM	Owned 100% by Aya	3.8	12 October 2023	11 October 2026
PR-3843056*	Permis de Recherche	Société SYSMACO Mining (AGSM)	Option to earn 100% interest	16.0	10 June 2023	9 June 2026
LE-383722**	Licence d'exploitation	Société Des Travaux Ruraux (AGSM)	Option to earn 100% interest	9.5	27 September 2014	26 September 2024
LE-383724**	Licence d'exploitation	Société Des Travaux Ruraux (AGSM)	Option to earn 100% interest	6.2	25 November 2017	24 November 2027
PR-3843342**	Permis de Recherche	Société Batimines (AGSM)	Option to earn 100% interest	14.2	23 November 2022	21 November 2026
PR-3843372**	Permis de Recherche	ZMSM	Owned 100% by Aya	8.0	8 March 2024	7 March 2027
PR-3843371**	Permis de Recherche	ZMSM	Owned 100% by Aya	6.5	8 March 2024	7 March 2027
PR-3843370**	Permis de Recherche	ZMSM	Owned 100% by Aya	3.7	8 March 2024	7 March 2027
PR-3843051**	Permis de Recherche	Société 5M Company (AGSM)	Option to earn 100% interest	16.0	10 June 2023	9 June 2026
PR-3843156**	Permis de Recherche	Société Batimines (AGSM)	Option to earn 100% interest	9.5	14 June 2023	13 June 2026
PR-3842950**	Permis de Recherche	Société Batimines (AGSM)	Option to earn 100% interest	15.6	2023-June-26	27 June 2026

Notes: Mineral Tenure information effective May 8, 2024. licence d'exploitation = mining license; permis de recherche = exploration license.

* Permit in the contiguous Boumadine Property; **Permit outside the contiguous Boumadine Property.

4.3 MINERAL TENURE IN MOROCCO

In Morocco, Mineral Tenure are attributed according to the mining code 33-13 (2013) by le ministère de transition énergétique et durable (minister of durable energetic transition or “MTEDD”). There are two types of permits:

- 1) **Permis de recherche (Exploration Permit).** These permits grant the holder the right to conduct geological research (i.e., exploration) to identify mineral deposits within a specified area. Initially, the permit is issued for a period of 3 years and can be renewed once for an additional 4 years under specific conditions; and attributed for a period of 3-years and can be renewed for 4-years. After that period, the permit must converted to a licence d’exploitation (mining permit); and
- 2) **Licence d’exploitation (Exploitation or Mining Permit).** These permits are granted once a viable mineral deposit has been discovered. They allow the holder to extract and commercialize the minerals. Exploration permits are issued for longer durations (generally 10 years) and require compliance with environmental and safety regulations. They are renewable.

4.4 ACQUISITION AGREEMENT

Aya (known as Maya Gold & Silver at the time of the Acquisition Agreement) and Office National des Hydrocarbures et des Mines (“ONHYM”) signed an agreement on October 9, 2012, for the acquisition of the Boumadine polymetallic deposit. Under the terms of Agreement, Aya acquired 85% of the Boumadine Project (permit LE383661) for total cash payments of (MAD 28,000,000, ~US\$2,800,000), including:

- a) An initial amount of (MAD 6,000,000) paid in May 2013;
- b) (MAD 6,000,000) payable 12 months after the date of agreement;
- c) (MAD 6,000,000) payable 24 months after the date of agreement; and
- d) A final payment of (MAD 10,000,000) payable 36 months after the date of the Agreement, which was made in February 2019.

A new Moroccan company, Boumadine Global Mining (“BGM”), was created with Aya (85%) and ONHYM (15%) as shareholders. The mining title of the Boumadine Property was transferred to the BGM company by ONHYM.

4.5 ROYALTIES AND ENCUMBRANCES

Aya and ONHYM signed an agreement for the development and exploitation of the Boumadine polymetallic deposit; Aya holds 85% and ONHYM holds 15% stake in its share capital of the Boumadine licence through BGM. The participation of ONHYM is subject to dilution if they fail to invest 15% in the budget after Aya matches all the previous investment from ONHYM. ONHYM will receive a 3% royalty on BGM sales revenue from the first year of operation. Aya will receive a management fee equal to 2.75% of the revenue from BGM.

4.6 ENVIRONMENTAL AND PERMITTING

In order to convert an exploration permit to a mining permit, an environmental impact assessment needs to be submitted to the regional centre of investment (“CRI”).

Aya is committed to carrying out exploration work, Mineral Resource estimation, mine and infrastructure design work, and metallurgical testing in the next 60 months. Aya agreed to periodically inform the Regional Department of Energy and Mines and ONHYM of its work progress.

4.7 OTHER SIGNIFICANT FACTORS AND RISKS

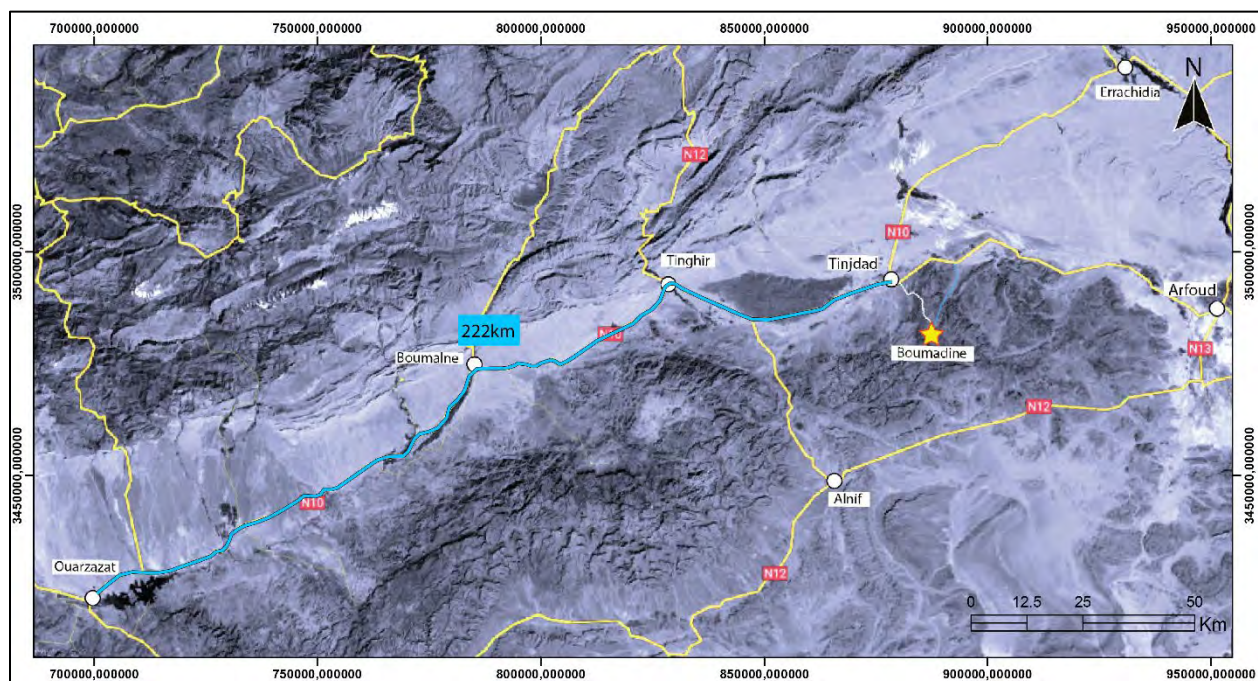
To the best of the knowledge of the Authors, there are no environmental considerations or other significant factors or risks that may affect access, title, or the right or ability to perform work on the Boumadine Property.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESS

The Boumadine Property is located in the Errachidia Province of the Meknès-Tafilalet Region, in the Anti-Atlas Mountains. It is accessible via the National Highway 10 (N10), ~220 km east-northeast from Ouarzazate City or ~70 km southwest from Errachidia City (Figure 5.1). The nearest town is Tinejdad, ~16 km north from the historical Boumadine Mine. The nearest village, Bouyoud, is 4 km away from the site. The Property is accessible from Tinejdad by all-terrain vehicle on a paved and gravel road.

FIGURE 5.1 LOCATION OF THE BOUMADINE DEPOSIT FROM OUARZAZATE



Source: Aya (May 2024)

5.2 CLIMATE

The Project is located on the Ougnat massif of the Anti-Atlas Mountains. This region is separated from the influence of the Mediterranean climate by the High Atlas Mountains to the north, and therefore, shares the Sahara climate. The climate falls under the category of a hot desert climate, also known as a “hot arid climate” (Köppen climate classification BWh).

Summers are hot, with daytime temperatures exceeding 40°C (Table 5.1). Winters are generally mild, with daytime temperatures ranging from mild to warm; nighttime temperatures can drop, but freezing temperatures are uncommon. The region receives very little rainfall throughout the year; most of the rainfall occurs during the winter months. Field work at Boumadine can be performed year-round.

TABLE 5.1 MONTHLY TEMPERATURE AND PRECIPITATION AVERAGE AT TINEJDAD FROM 1991 TO 2021												
Variable	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Avg. Temp. (°C)	8.6	10.6	14.9	19.2	23.1	28	31.5	30.3	25.5	20.1	13.4	9.5
Min. Temp. (°C)	1.7	3.2	7	11.2	15	19.2	22.3	22	17.9	13.3	6.9	3.4
Max. Temp. (°C)	15	17.1	21.5	25.7	29.4	34.4	38.2	36.7	31.7	25.9	19.2	15.4
Precipitation / Rainfall (mm)	8	13	9	8	9	4	2	4	9	17	12	7
Humidity (%)	40	36	29	23	21	17	14	17	25	34	41	47
Rainy Days (d)	1	1	2	1	1	1	0	1	1	2	2	1
Avg. Sun hours (hours)	9	9.6	10.6	11.6	12.3	12.7	12.6	11.9	11	10.1	9.2	8.7

Source: climatedata.org

5.3 INFRASTRUCTURE

The Boumadine Property can be accessed by two roads: 1) by a 16-km dirt road southwards from Tinejdad; and 2) by a 4-km dirt road from east through the Village of Bouyoud. The National Highway 10 (N10) goes through the City of Tinejdad and connects to Ouarzazate City to the west and Errachidia City to the east of Tinejdad. The nearest power line to the Property is 3.8 km away.

There are numerous dirt roads and paths that lead to former shafts and other remnants of the historical mining infrastructure. Water is currently sourced from historical underground workings and wells. Three generators are on-site to provide electricity.

The facilities on-site are adapted for exploration operations. They include an office, drill core shack, the Afrilabs sample preparation laboratory, drill contractor workshop, and drill contractor camp (Figure 5.2).

5.4 PHYSIOGRAPHY AND VEGETATION

The physiography of Boumadine Project is characterized by its desert setting, with influences from the nearby Atlas Mountains. The topography of the area is marked by ridges and hills mostly, with altitude ranging between 980 and 1,300 m asl (Figure 5.3a). The site and its surroundings exhibit characteristics typical of a desert landscape, with vast expanses of arid and rocky terrain.

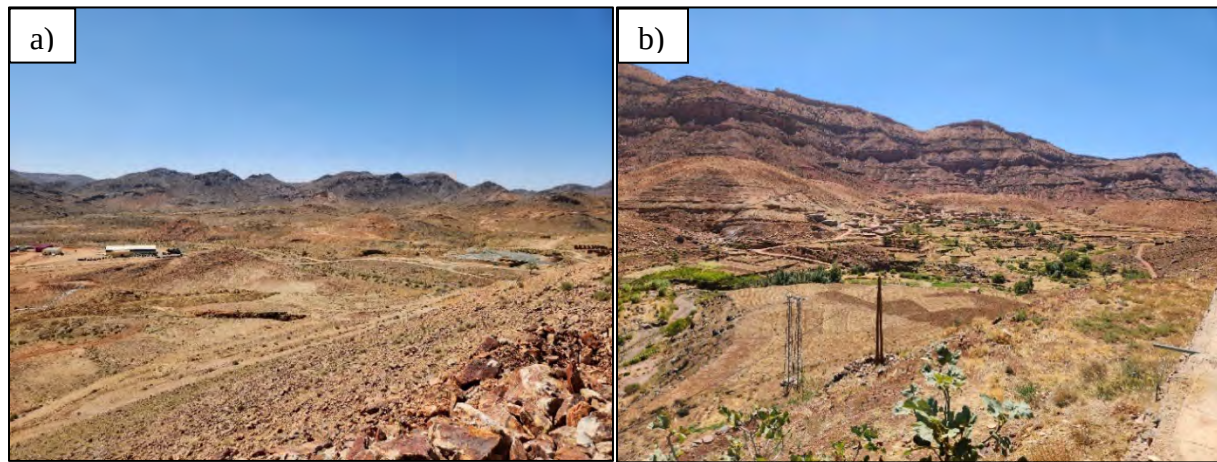
The vegetation of the Boumadine region consists mainly of desert plants such as *Acacia Raddiana* and *Tamarix Amplexicaul*. Certain types of drought-resistant grasses may be found in the region, providing some ground cover. Oases and palm trees are a notable feature in this region (Figure 5.3b). Date palms are cultivated in this type of area.

FIGURE 5.2 BOUMADINE SITE INFRASTRUCTURE



Source: Aya (April 2024)

FIGURE 5.3 PHYSIOGRAPHY AND VEGETATION



Source: Aya (April 2024)

Figure 5.3 Description: a) Physiography at Boumadine; and b) Cultivated oasis near Boumadine

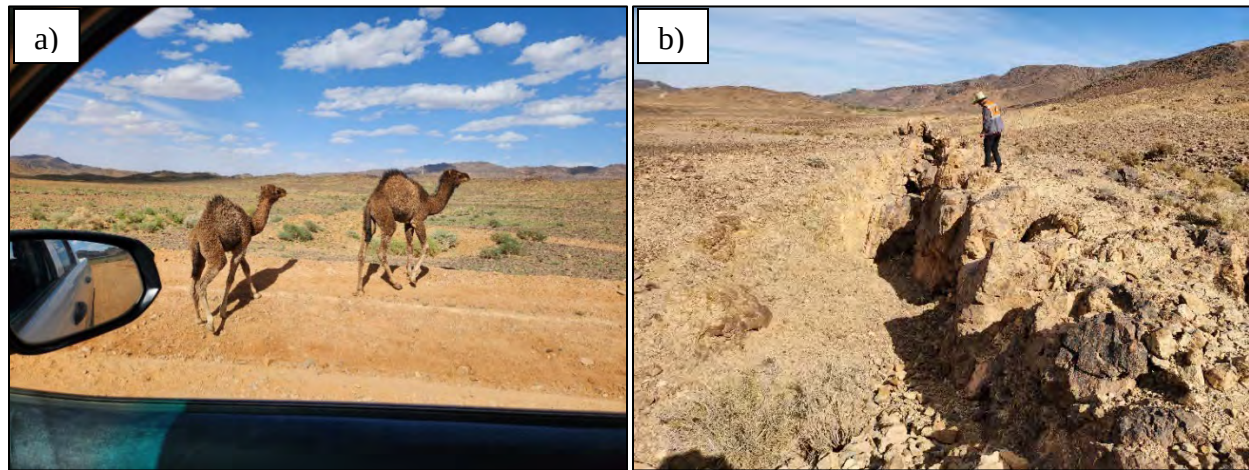
5.5 LOCAL RESOURCES

The Boumadine site is in close proximity to the Ziz River, which flows through the centre of Tinejdad. The river, along with its valley, contributes to the oasis environment with palm groves, particularly date palms. Other types of agricultural activities can be found in these areas.

Group of nomads pass by the Boumadine Property with their livestock of camels or goats (Figure 5.4a). The nomad community is composed of Amazigh (Berber) people.

Historical artisanal mining activities have been recognized at several places on the Boumadine Property (Figure 5.4b). Historical extraction work focused on barite and lead veins.

FIGURE 5.4 **NOMADIC LIVESTOCK AND ARTISANAL ACTIVITY**



Source: Aya (April 2024)

Figure 5.4 Description: a) Camels near the Boumadine Historical Mine Site; and b) an artisanal excavation on the Boumadine Property.

Mine workers and other personnel are available from Tinejdad. The City of Errachidia (formerly called Ksar souk) is the closest major urban centre. Errachidia has an international airport with access to Casablanca and it is also accessible by road from Marrakech (~420 km away).

Basic supplies, such as food and limited accommodation, are available at Tinejdad; the larger City of Errachidia offers greater diversity in supplies. Special items must be purchased from Ouarzazate or Marrakech.

6.0 HISTORY

6.1 MINING AND EXPLORATION HISTORY

6.1.1 Antiquity and 15th to 16th Centuries

The historical Boumadine Mine is one of the oldest known mines in the Kingdom of Morocco. It was probably exploited by the Portuguese during the 15th and 16th centuries. They extracted the oxidized part of the polymetallic veins to a depth of as much as 20 m. Such workings are found along a north-south strike length of 4.2 km on the Boumadine Property.

6.1.2 BRPM: 1956 to 1964

In 1956, the Bureau de Recherches et de Participations Minières (“BRPM”), the Morocco filial of the Bureau des Recherches Géologiques et Minières (“BRGM”) commenced modern exploration at Boumadine. Initially, BRPM defined three targets:

1. The north-south historical workings, ± 4 km extension starting from the south area and finishing to the north at ‘Imariren’;
2. The N70°E veins, enriched in galena and chalcopyrite. At least five of these veins were defined over the Property; and
3. The southwest-northeast ‘Bou Guedoud’ regional faults, which is an alignment of different intrusions.

Exploration was prioritized at the north-trending historical workings. In 1962, exploration activities increased and by the end of 1964, BRPM had completed 6,248 m of drilling and 27 m of shaft excavation at the Property.

6.1.3 BRPM: 1964 to 1966

In 1964, a geophysical survey testing different methods (magnetism, electromagnetism) was completed on the Property. The results were inconclusive.

Metallurgical testing was completed in July 1965, leading to the first economic study and the next phase of exploration, which involved underground excavation to certify probable and possible mineral reserves. Exploration workings were extended in the Central Zone, followed by mineralized material development and underground drilling. During that period, BRPM completed 1,984 m of drilling, 122 m of vertical underground development, and 859 m of horizontal underground development.

6.1.4 BRPM: 1966 to 1975

Between 1966 and 1970, the BRPM continued mineralogical, metallurgical, and economical studies. BRPM contracted the USSR agency Giprotvetmet for an independent technical economic

review. The USSR agency considered the opportunity to treat the mineralized material through a flotation, roaster, and cyanidation circuit. Their first conclusion came in 1968 and was negative, based on the remote location and low mineral resource quantity at the time.

In 1969, BRPM conducted an electromagnetism survey (Thuram) to better define extension and geometry of Boumadine polymetallic veins.

Exploration continued from 1973 to 1975. The BRPM completed an additional 7,132 m of drilling to target the Central Veins extension below underground working and to define new polymetallic veins in the northern area. A new shaft was opened in the northern area, whereas one central shaft was deepened to -150 m below surface (“MBS”). The BRPM completed 678 m of mineralized material development at the -150 mbs central level and 288 m of mineralized material development in the northern area.

6.1.5 BRPM: 1975 to 1985

From 1975 to 1981, BRPM did not conduct any exploration activities; however, exploration was resumed in 1981–1982. An infill campaign targeted a high-grade panel with 340 m of underground drifts and two shafts of 37.5 m each. Many underground channel samples were taken in the central area at that time.

Exploration continued in 1984 to help define the mineral resource of the Central Area. Additional underground workings and diamond and sludge holes were completed to define parallel polymetallic veins. Two new areas, Tizi and South Zones, were explored by two new shafts and additional underground workings.

6.1.6 SODIM: 1986 to 1989

In 1986, the society SODIM in partnership with the BRPM started industrial testwork for mining production. Between July 1986 and October 1987, SODIM treated 23,700 tonnes grading 1.38% Pb and 6% Zn; precious metals recovery was low at <30%. All materials were sourced from the -50 m level of the Central Zone.

In June 1988, the BRPM retook ownership of the Deposit to pursue industrial tests. From June 1988 to May 1989, the BRPM treated through a flotation circuit 42,785 tonnes at 1.57% Pb and 4.97% Zn. Precious metals recovery was still low; all materials were sourced from the -50 m level of the Central Zone.

In July 1989, the BRPM loaned the Project to the Société de Développement du Cuivre de l’Anti Atlas (“SODECAT”) to continue production testwork.

6.1.7 SODECAT: 1989 to 1992

SODECAT re-optioned the Property in 1989 and invested in the mining infrastructure. The development of underground workings were concentrated at the -100 m level in the Central Zone and -120 m level in the South Zone. From July 1989 to August 1992, 1,570 m of surface drilling, 111 m of shaft, 1,058 m of stopes and drifts, and 187 m of raises were completed.

A committee was organized in 1991 between BRPM and SODECAT to decide the future of the Project. Due to marginal profit, the decision was made to mine out high-grade stopes and cease production at the end of 1991. During their production period, the SODECAT extracted 191,000 t of mineralized material grading 0.94 wt.% Pb, 328 g/t Ag and 3.69 g/t Au from the South and Central Zones.

6.1.8 BRPM: 1993 to 1998

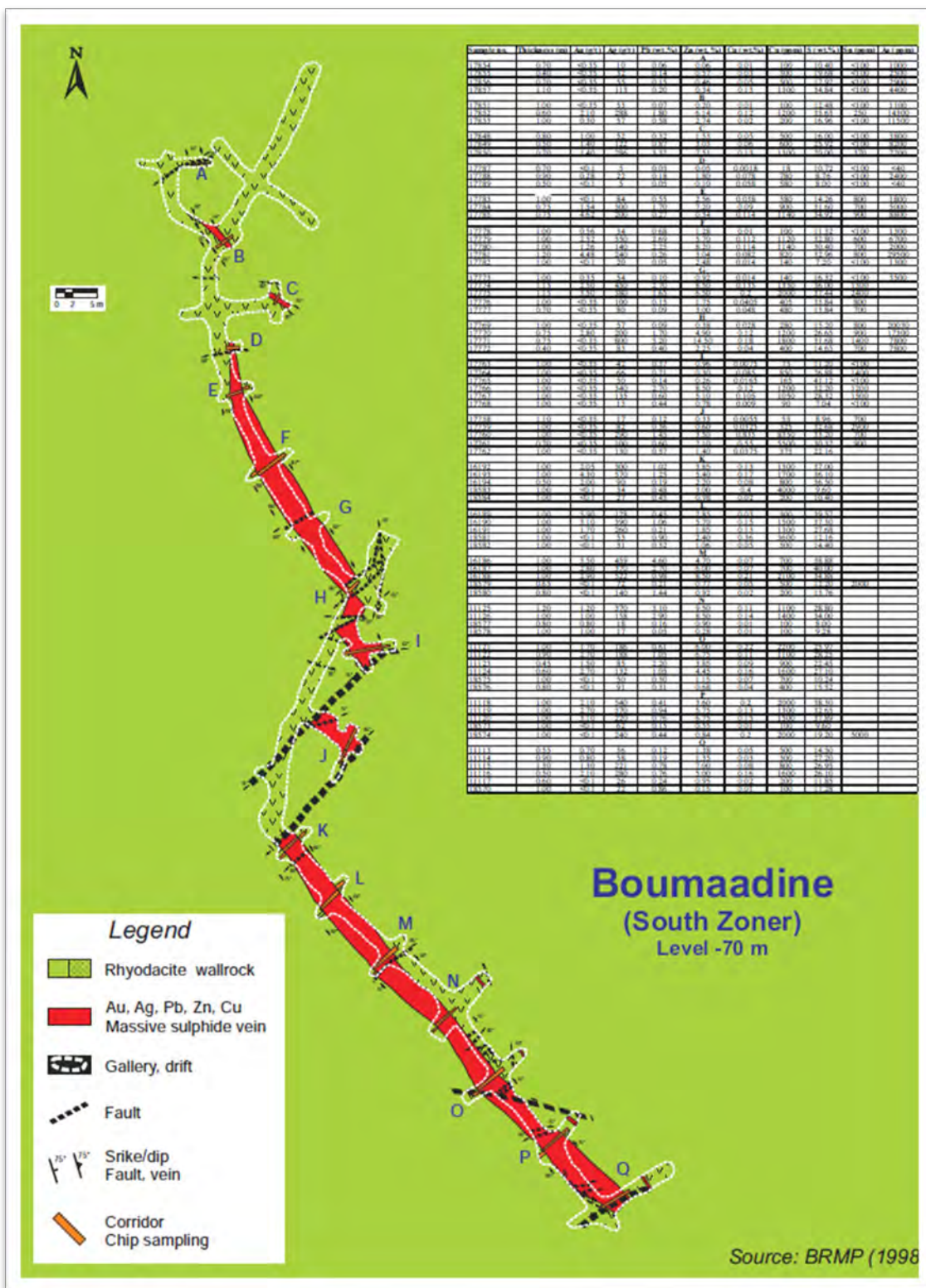
An electromagnetism geophysical survey was completed in 1994, results confirmed extension of polymetallic veins below -300 m below surface. The recommendation from the geophysical survey completion report for completing additional deep drill holes was not followed-up.

The BRPM issued its final report in 1998 summarizing all the workings completed on the Boumadine Property (also known as Boumaadine), including a summary of all its drilling (Table 6.1; Figures 6.1 and 6.2).

TABLE 6.1 SUMMARY OF BRPM EXPLORATION WORK				
Period	Diamond Holes		Shafts/ Raises	Drifts
	Number	(m)	(m)	(m)
1956 to 1957	2	144	27	191
1962 to 1964	40	6,248	-	-
1964 to 1966	36	1,984	77	981
1973 to 1975	25	7,132	152	874
1981 to 1982	-	-	82	340
1984 to 1985	13	1,029	140	1,885
1989 to 1992	unknown	1,570	298	1,376

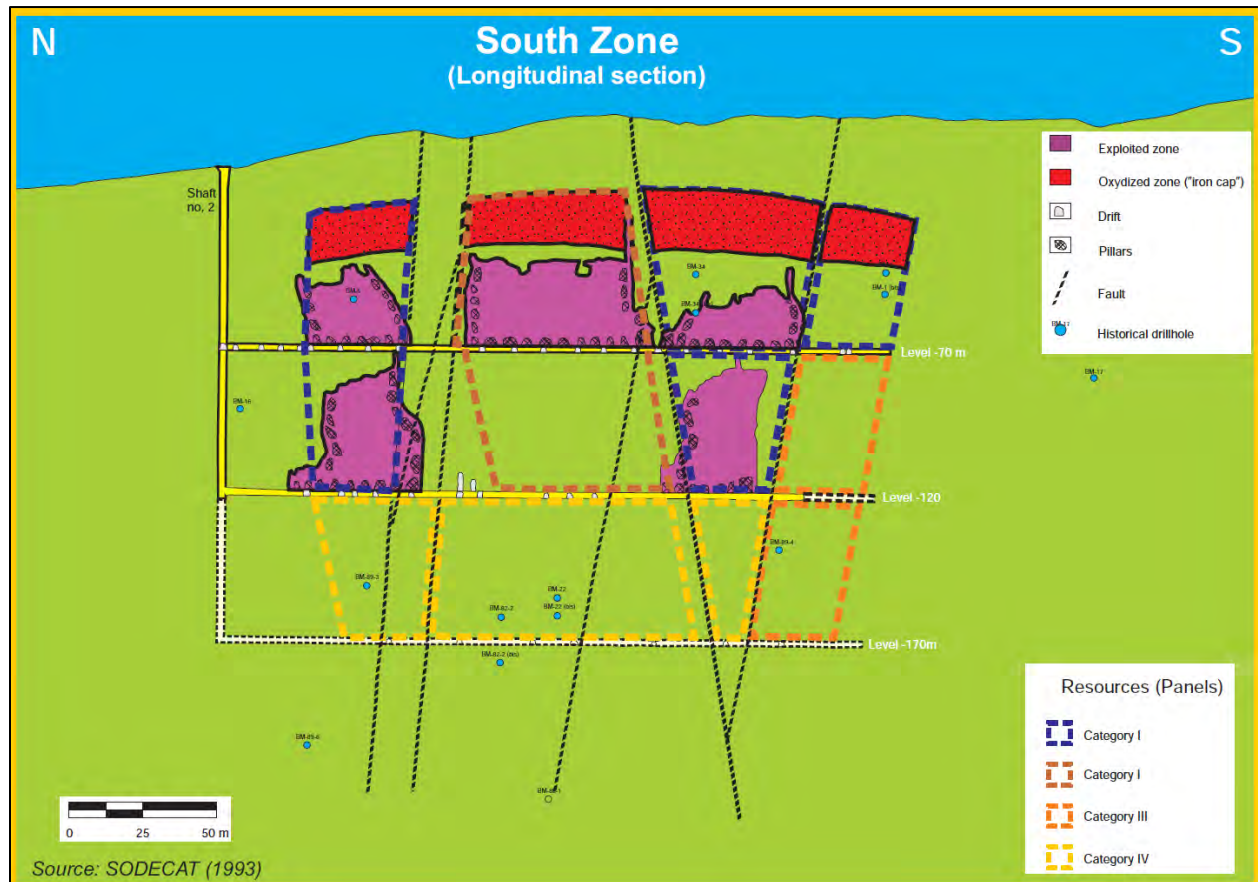
Source: Aya (April 2024)

FIGURE 6.1 -70 M LEVEL PLAN OF SOUTH ZONE, WITH CHIP SAMPLE ASSAYS



Source: BRPM (1998)

FIGURE 6.2 LONGITUDINAL PROJECTION OF THE PRINCIPAL POLYMETALLIC VEIN MINED IN THE SOUTH ZONE



Source: BRPM, (1998)

Note: Panels or blocks defined according to the historical mineral resource category. Category I to IV corresponds to internal BRPM mineral resource classification.

6.1.9 Maya: 2013 to 2019

In 2013, Maya Gold and Silver Inc (Maya: former entity of Aya Gold & Silver) acquired the Boumadine Project through a Joint Venture with the ONHYM (new entity of the BRPM) 85%/15%, respectively.

Between 2013 and 2016, Maya only conducted surface exploration work. This included the collection of several grab samples from historical mineralized structures to investigate the historical mineral resources. Surface mapping of the mineralized structures was completed to identify targets for the surface sampling program.

In 2017, Maya conducted drilling with the objective to certify the historical mineral resource. Fourteen drill holes were completed over the Central, South and Tizi Zones for a total of 3,158 m.

The next drilling campaign was designed to increase the mineral resource at the Boumadine Deposit. Between 2018 and 2020, Maya completed 9,503 m of diamond drilling over South, Central, North, Imariren and Tizi Zones. In addition, Maya conducted a drone survey over part of

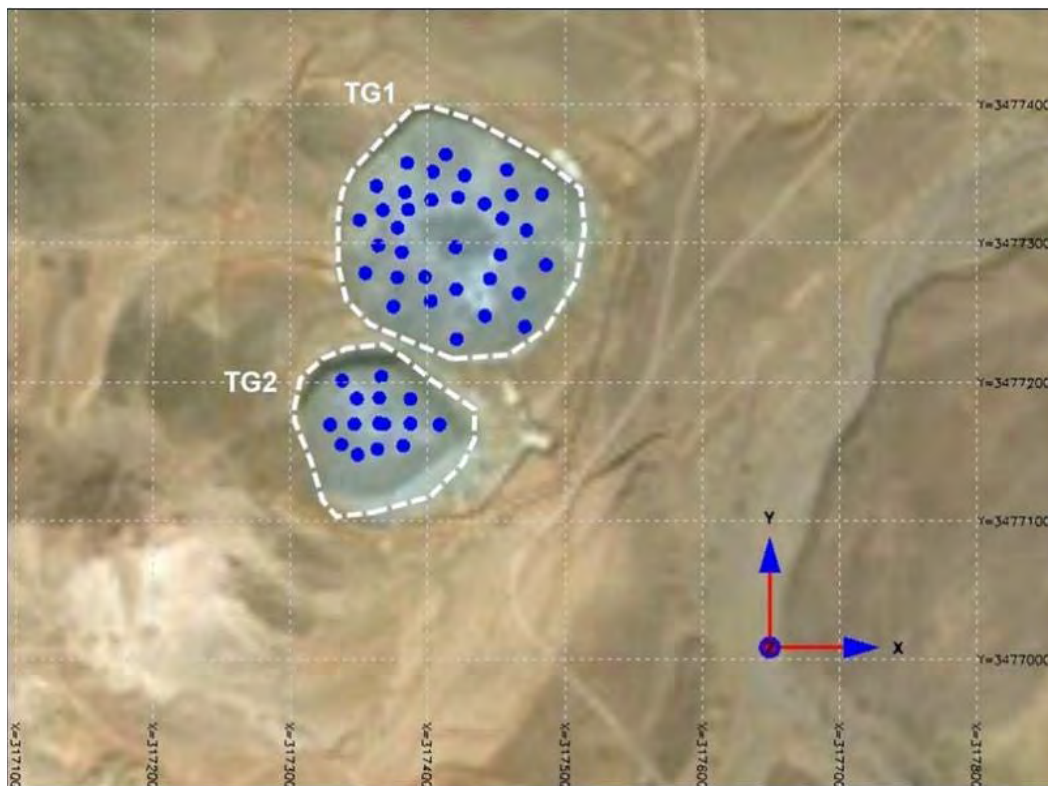
the Boumadine Property. A summary of the drilling completed by Maya is presented in (Table 6.2).

TABLE 6.2 SUMMARY OF DIAMOND DRILLING COMPLETED BY MAYA FROM 2017 TO 2020			
Years	Zone	Metres Drilled	Objective
2017	Centre	1,490.40	Historical resource and old workings verification
	Sud	1,137.60	
	Tizi	530	
2018	Centre	1,597	
	Sud	608	Check southern continuity of the vein
	Tizi	466.1	
	Imariren Est	804.9	Follow-up on grab samples positive results
	Imariren Ouest	1,168.40	
2019	Centre	1,446.70	
	Imariren Est	670.8	Increase Imariren resource
	Imariren Ouest	1,297.80	
	Nord	543.9	Test northern historical resource
2020	Nord	899	Increase Zone Nord resource
Total		12,661	

Source: Aya (April 2024)

In 2018, a sampling campaign was completed over two historical tailings deposits. A soil core sample were taken every metre in 49 holes for a total of 186.63 m (Figure 6.3).

FIGURE 6.3 LOCATION OF SOIL CORE SAMPLES COMPLETED BY MAYA IN 2018



Source: GoldMinds (2019)

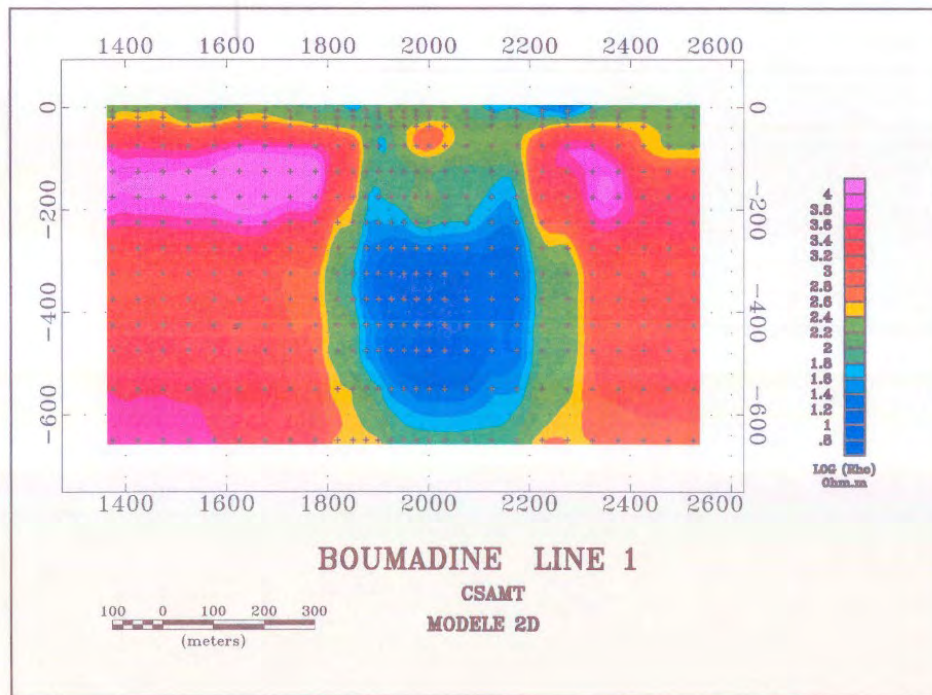
6.2 GEOPHYSICAL SURVEYS

BRPM completed several geophysical surveys over the Boumadine Property (Table 6.3). Electromagnetic surveys delivered results that helped to better define polymetallic veins extension on surface (Figure 6.4).

TABLE 6.3 GEOPHYSICAL SURVEYS COMPLETED BY BRPM	
Years	Type
1964	Self Potential
	Seismic
	Resistivity
1974	Electromagnetic - TURAM
1985	Electromagnetic - TURAM
1990	Electromagnetic - TURAM
	Electric - Self Potential
	Induced Polarization
1994	Electromagnetic CSAMT & TEM

Source: Aya (April 2024)

FIGURE 6.4 2-D SECTION OF A CSAMT SURVEY*



Source: BRPM (1994)

* CSAMT = CONTROLLED-source audio magnetotelluric survey

6.3 PAST PRODUCTION

BRPM published a summary of production figures in 1998 (Table 6.4), including flotation results (Table 6.5) and metallurgical recoveries (Table 6.6).

TABLE 6.4 TONNES EXTRACTED		
Period	Location	Tonnes
1986–1987	Central level -50	22,355
1988–1989	Central level -50	48,130
1989–1992	Central level -50 & -100	132,000
1989–1992	South - level 70 & -120	59,000
Total		261,485

Source: BRPM (1998)

TABLE 6.5 FLOTATION RESULTS					
Pb Concentrate		Zn Concentrate		Grade - Rejects	
Pb (%)	41.6	Zn (%)	44.5	Pb (%)	0.21
Ag (g/t)	4,711	Ag (g/t)	565,000	Zn (%)	0.96
Au (g/t)	24.6	Au (g/t)	3.7	Ag (g/t)	125
				Au (g/t)	2.38

Source: BRPM (1998)

TABLE 6.6 METALLURGICAL RECOVERY BY CONCENTRATE TYPE				
Item	Pb	Zn	Ag	Au
Pb Concentrate	69.08%	-	32.01%	13.52%
Zn Concentrate	-	77.04%	18.03%	9.53%

Source: BRPM (1998)

6.4 HISTORICAL MINERAL RESOURCE ESTIMATES

The Authors are unable to verify the historical mineral resource estimates, as the supporting data are incomplete, they were not prepared by an independent party, and all predate the requirements set forth in NI 43-101. The historical mineral resource estimates are relevant in that they provide historical context and a framework on which to plan work programs to define NI 43-101 compliant Mineral Resources or Mineral Reserves. Aya is not treating the historical mineral resource estimates as current Mineral Resources, and therefore they cannot be relied on and may not be indicative of future mining a Boumadine.

6.4.1 BRPM

BRPM produced several mineral estimates during its tenure; however, none of these mineral estimates were reported in compliance with NI 43-101 or other internationally recognized reporting standards. The final BRPM mineral resource was reported in 1998 and included mining depletion (Table 6.7).

TABLE 6.7 BOUMADINE DEPOSIT 1998 MINERAL RESOURCE REPORT					
Reserve Classification*	Tonnes	Au (g/t)	Ag (g/t)	Zn (%)	Pb (%)
Certain	280,775	3.17	171	3.60	0.70
Very Probable	267,670	2.27	155	3.27	1.02
Probable	231,230	1.06	175	3.03	0.86
Possible	450,000	1.52	95	3.51	1.05

Source: (BRPM (1998)

Note: *BRPM internal classification categories, not NI-43-101 compliant

The work was completed prior to the implementation of current NI 43-101 standards, does not conform to present-day standards, and should not be relied upon. The Authors have not completed sufficient work to classify the historical mineral resource estimates as current Mineral Resource Estimates. Aya is not treating the historical mineral resources as current Mineral Resource Estimates, and they should not be relied upon.

6.4.2 Maya 2019 PEA

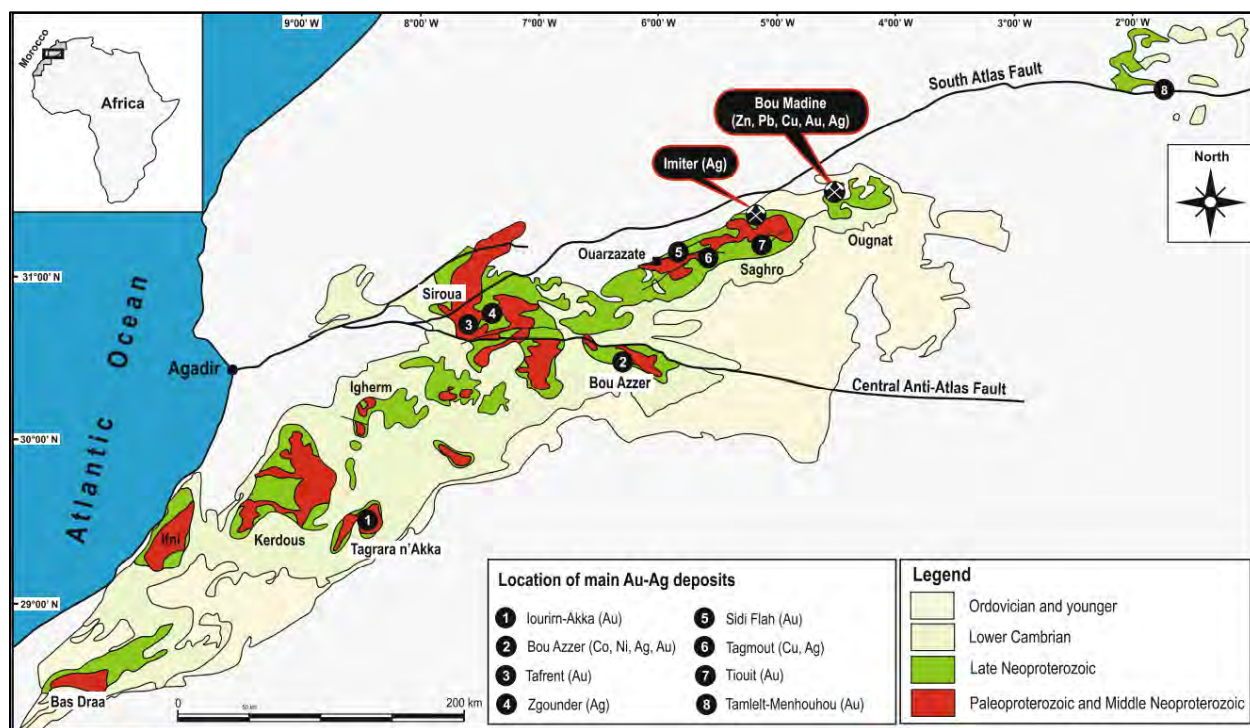
Maya commissioned GoldMinds Geoservices Inc. (GoldMinds) to complete a Preliminary Economic Assessment (“PEA”) for the Boumadine Project. The PEA was reported in May 2019 with an effective date of April 24, 2019.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The Boumadine Property is located at the eastern end of the Anti-Atlas Mountain Range, which extends east-northeast to west-southwest, over >600 km, from the Atlantic Ocean in the west to the interior of the African plate in the east (Figure 7.1). The Anti-Atlas basement rocks are mainly Neoproterozoic in age and consist of ophiolites, island arc-related gneiss and intrusive rocks, particularly near to the northern edge of the West African Craton.

FIGURE 7.1 THE REGIONAL GEOLOGY OF THE ANTI-ATLAS DISPLAYING PROTEROZOIC WINDOWS

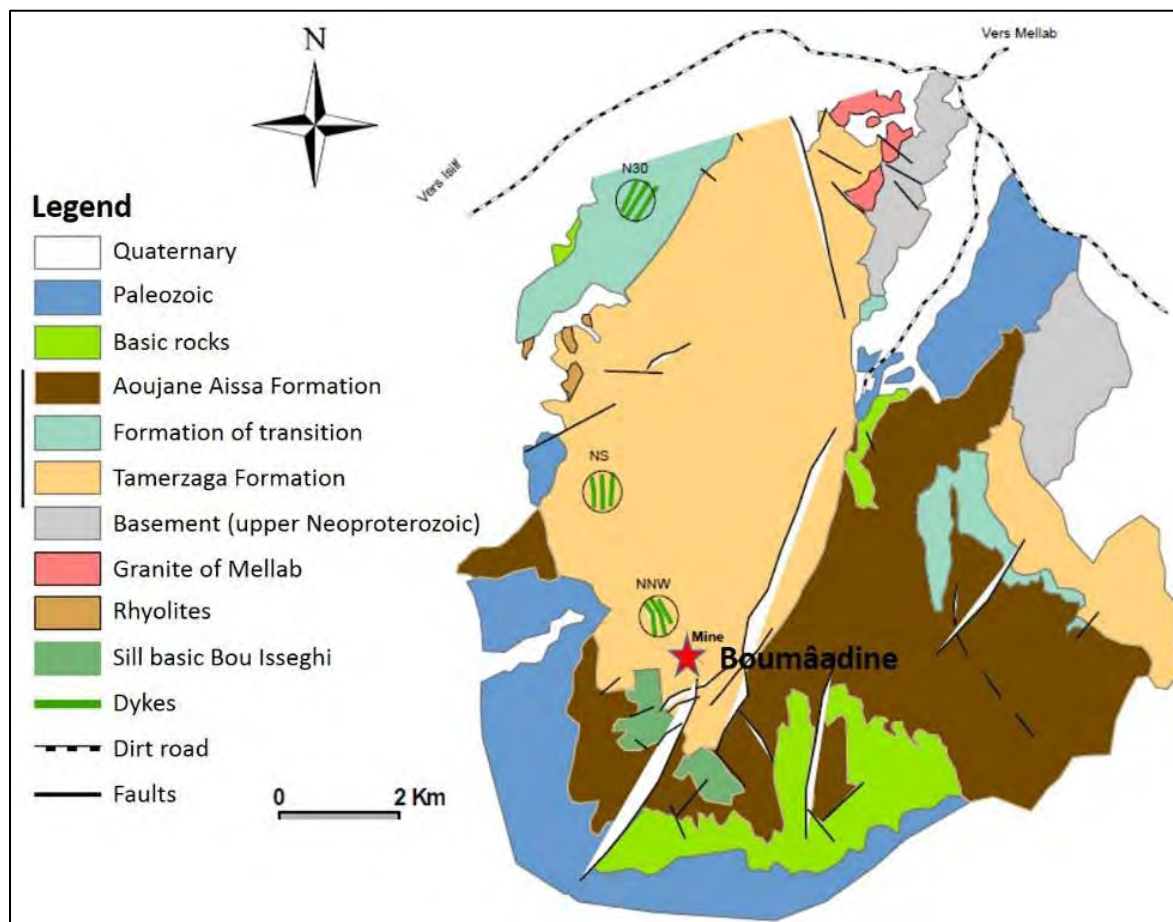


Source: Boily (2014)

Note: Boumadine is also known as Bou Madine

The Boumadine polymetallic deposit (Au, Ag, Pb, Cu, Zn) is located on the northwest side of the Ougnat Massif (or Boutonnière). The geology of the Massif consists of a Neoproterozoic metasedimentary basement overlain unconformably by a Late Neoproterozoic volcano-sedimentary rock sequence and by Paleozoic lacustrine sedimentary and minor volcanic rocks. The basement is represented by a succession of sandstone, pelites and greywackes, which is intruded locally by granite, granodiorite, and diorite bodies. The volcano-sedimentary sequence consists of felsic and mafic volcanic rock units separated by volcano-sedimentary units (Figures 7.2 and 7.3).

FIGURE 7.2 GEOLOGY OF THE OUGNAT MASSIF



Source: Boily (2014)

Note: Boumadine is also known as Boumâadine

The volcanic and volcanic-sedimentary rock unit have been grouped into three formations (Figure 7.3), which from the oldest to youngest are:

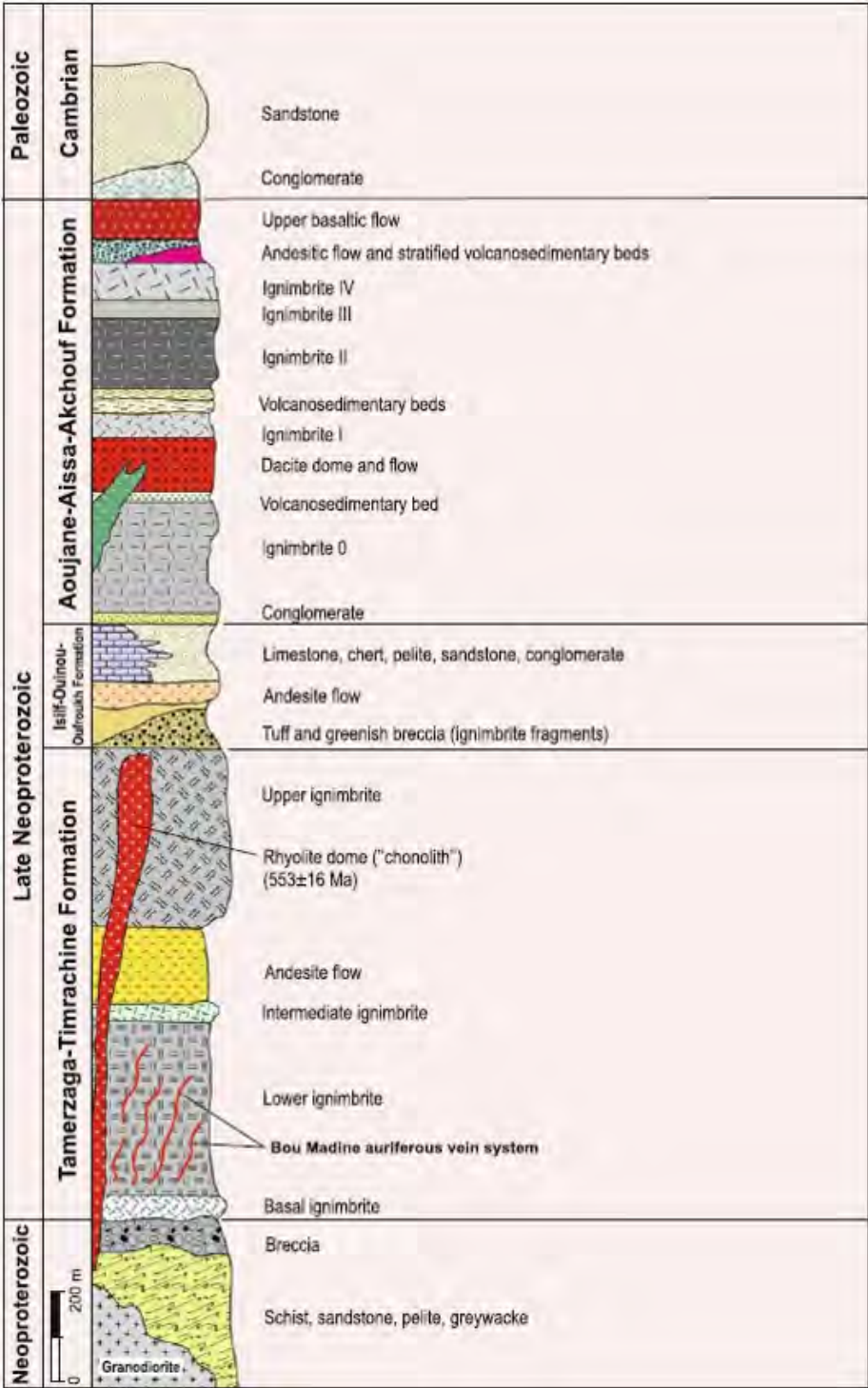
1. **Tamerzaga-Timrachine Formation (TTF):** Consists of ignimbrites, rhyodacites and andesites;
2. **Isilf-Ouinou-Oufroukh Formation (IOF):** Consists of volcano-sedimentary rocks, specifically tuffs and breccia, andesite flows; and fine- to coarse-grained sedimentary rocks; and
3. **Aoujane-Aissa-Akchouf Formation (IOF):** Formed of ignimbrites, dacite domes and flows, and andesite flows.

These three Formations are intruded by dolerite, microdiorite and andesite dykes. At the historical Boumadine Mine, only the andesite dykes are present and trend north-south.

The Ougnat Massif area was subjected to a Neoproterozoic shearing, which generated regional-scale faults trending N30°E and associated secondary fractures. The area has also been affected by

a late-stage series of north-south extensional fractures that were subsequently reactivated by a compressive Hercynian tectonic event.

FIGURE 7.3 SCHEMATIC STRATIGRAPHIC COLUMN OF THE CENTRAL OUGNAT MASSIF



Source: Modified by Bouabdellah and Levresse (2016) from Paile (1983)

7.2 PROPERTY GEOLOGY

7.2.1 Volcanic and Intrusive Rocks

The TTF volcanoclastic sequence of felsic tuffs and mafic tuffs host the Boumadine Deposit (Figures 7.3 and 7.4). The felsic tuffs consist of angular to rounded cm-size felsic fragments, quartz eyes, plagioclase grains, and locally mafic fragments. This felsic sequence is homogeneous and massive, and sits unconformably on mafic tuffs. Mafic tuffs consist of amphibole and fragments/clasts of sedimentary rocks. Mafic tuffs are interpreted as underwater-deposited volcanoclastic eruptives.

Many intrusions are observed on the Boumadine Property. The intrusions are divided into a pre-to syn-mineralization group and a post-mineralization group. The pre- to syn-mineralization intrusions are mainly felsic to intermediate in composition, show aphanitic to porphyritic textures, and form dykes and sills. Locally porphyritic mafic dykes, similar in composition to mafic tuffs, cross cut the felsic tuff sequence and syn-mineralization dykes, suggesting bimodal magmatism.

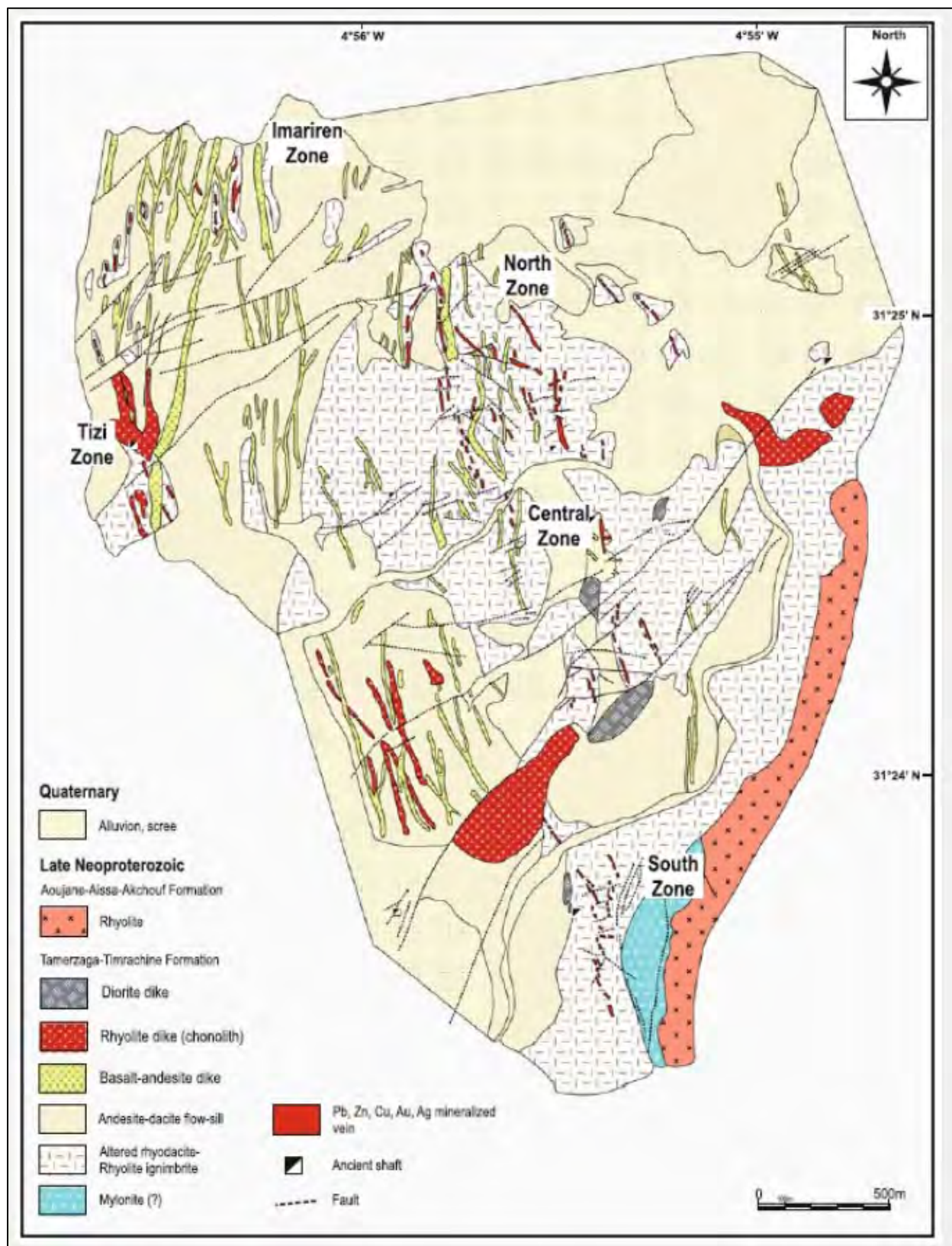
The post-mineralization intrusions consist of rhyolite subvolcanic domes associated with normal faults. These domes are interpreted as being synchronous with a post-mineralization deformation episode that disrupted the Boumadine mineralized zones. Subsequently, a swarm of regionally extensive mafic dykes intruded every lithological unit on the Property.

7.2.2 Hydrothermal Alteration

Two events of hydrothermal alteration are observed on the Property. The first alteration event affects the felsic tuff sequence as phyllic alteration (quartz-sericite-pyrite). Proximal to massive sulphide veins (1 to 5 m thick), there is an advanced clay alteration composed of kaolinite, pyrophyllite and vuggy silica.

The second sequence of alteration affects mainly the underlying mafic tuffs and consists of propylitic alteration (epidote and chlorite). Near the veins, the alteration minerals are black chlorite, pyrophyllite and pyrite. The transition between these two alteration events is relatively sharp and consistent with the change in tuff composition.

FIGURE 7.4 BOUMADINE PROPERTY GEOLOGY MAP



Source: Aya website (April 2024)

7.2.3 Structure

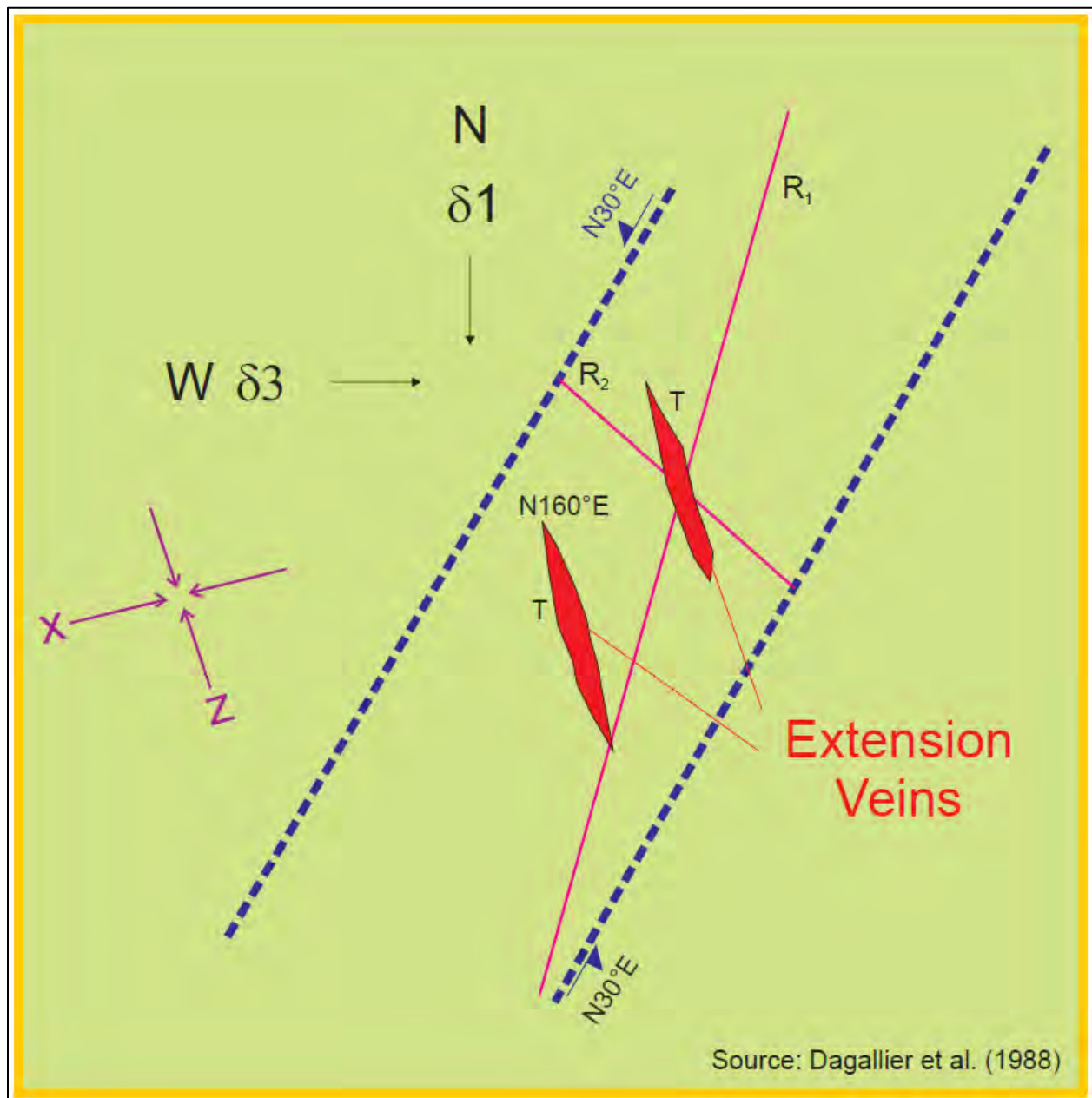
This section is summarized largely from Boily (2014).

The most important structures in the Boumadine Property area are represented by km-scale N30°E-oriented faults, limiting several tectonic blocks in the Ougnat Massif and potentially corresponding to tectonic movement of basement rocks. These faults, associated with tectonic breccias, first manifested normal-sinistral movement (striae with a N30°E/ 0–15°S plunge), and subsequently re-activated as normal faults. The tectonic fractures correspond either to normal faults associated with a north-northeast to south-southwest-oriented tension gash or N160°E tension gash controlling the emplacement of the andesite dykes, “chonolith” rhyolites, and polymineralized Boumadine veins (Figure 7.5). These features correspond to the shortening direction associated with the early sinistral activity on the N30°E faults (Abia *et al.*, 2003), as represented by the patterns of dykes distributed in “en-echelon arrays” in potential conjugate shear zones developed along N10°–30°E and N130°–140°E directions. The movements along the N30°E sinistral faults induced shearing associated with the opening of a collapsing basin and extension during emplacement of the TTF.

Some felsic and andesite dyke swarms strike N0°–N30°E, at variance with the N160°E strike of earlier andesite dykes. The emplacement of these dyke swarms is likely related to the reactivation of the early N30°E faults as normal brittle faults (associated with brecciation) that represent tension cracks. At Boumadine, ductile shear-zones striking N150°E developed C/S structures with a schistosity trending N135°E, consistent with dextral movement under N30°–N40°E shortening direction (Abia *et al.*, 2003). These shear zones developed in corridors already affected by a strong pyrophyllitization and syn- and late-kinematic pyrophyllite veinlets occur within the shear-zones coeval with the shearing (Figure 7.6). The shearing overprinted late rhyolite domes and andesite dykes (Ait Sasdi, 1992), and the shear-zones are sealed by the upper basalt flows (Freton, 1988). Thus, a return to compressional regime tectonics occurred at the end of the Late Proterozoic.

During the Phanerozoic era (Variscan period), reactivation of some N30°E-oriented faults as reverse faults occurred in relation with doming of the Proterozoic basement and the overlying Paleozoic cover. Copper–Pb–Zn mineralized quartz-carbonate veins were emplaced in N75°E fractures in Paleozoic and Proterozoic terrains. These veins correspond to the Imariren-type mineralization of Abia *et al.* (1999) and fill tension joints associated with N45°E and N105°E conjugate faults. N40°–50°E-oriented brittle faults dextrally displace the “pyrophyllite shear-zones” (up to tens of metres) and the polymetallic mineralized veins.

FIGURE 7.5 STRESS DISTRIBUTION IN A SINISTRAL SHEAR ZONE



Source: Boily (2014)

Figure 7.5 Description: Z = maximum shortening; X = maximum elongation; R1-R2 = conjugated Reidel system; T = extension gash; δ_1 = maximum stress during deformation; δ_3 = minimum stress during deformation.

FIGURE 7.6 **INTERPRETED TRACES OF N150°E-TRENDING SHEAR ZONES**



Source: Boily (2014)

Figure 7.6 Description: Dextral shear zones developed in corridors previously affected by strong pyrophyllitization.

7.2.4 Supergene Weathering

According to Boily (2014), the mantos, "chapeau de fer" or "iron cap" alteration extends from 20 to 50 m depth. The mantos consists principally of goethite, jarosite with sparse hematite and no lepidochrosite. This mineralogical assemblage indicates that the oxidation fluids were strongly acidic. In this case, Mn, Zn, Cd, Ni, Co, Pb are highly mobile in the acid and sulphur-rich fluids and are commonly leached at surface. However, Ag, Au, Ba, Sr and Pb are immobile and form stable sulphosalts. The hydroxide-rich “mantos” has been partially mined by artisanal workers for ochre and precious metals (Figure 7.7).

Due to the extensive weathering to clay minerals, the Boumadine Deposit has a very light colour that contrasts with the surrounding landscape when viewed from afar.

FIGURE 7.7 OXIDIZED MINERALIZED VEIN AT THE CENTRAL ZONE



Source: Boily (2014)

7.3 DEPOSIT GEOLOGY

The Boumadine Deposit has been traced on surface and in drilling as a curvilinear vein system for ~5,200 m along strike (Figure 7.8). Strike direction varies from mainly northwest to northerly and dip from steeply northeast to steeply southwest (Figure 7.9).

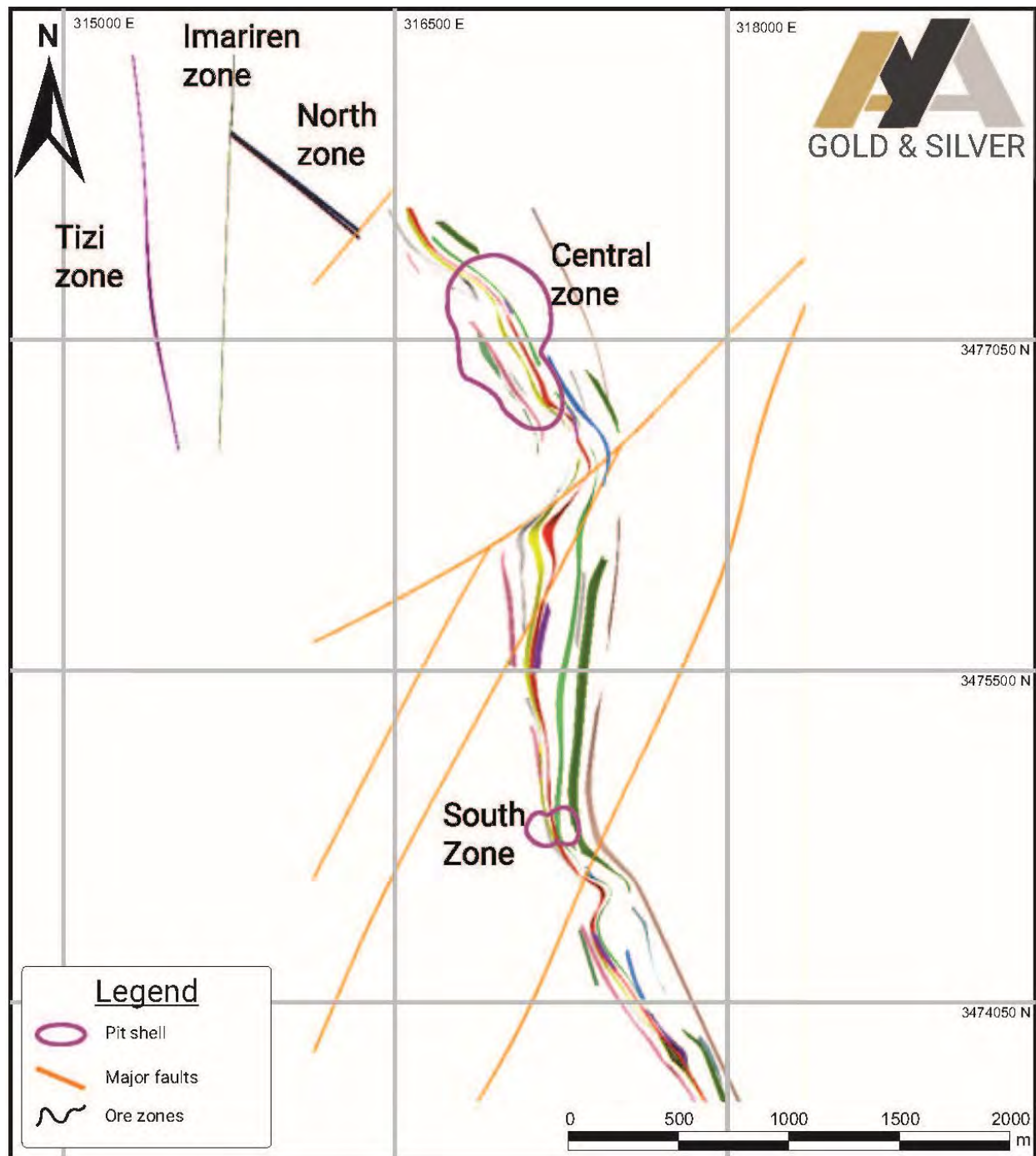
The Deposit consists of 15 mineralized domains that have been grouped into five separate zones. The South and Central Zones consist of up to seven stacked mineralized vein domains. From the south end of the South Zone to the north end of the Central Zone, these domains extend for 4,600 m along strike, as much as 300 to 400 m across strike and a maximum of 1,000 m down-dip. The south end of the South Zone appears to be open to expansion by drilling along strike to the south. The South Zone appears to be offset dextrally along a northeast-trending fault from the Central Zone. The north end of the Central Zone appears to be offset sinistrally along a northeast-trending fault from the North Zone.

The North Zone consists of two closely-spaced mineralized vein domains. This Zone is 650 m long, 5 to 10 m in thickness and 500 m down-dip. It strikes northwest and dips steeply southwest. The North Zone appears to be truncated by the Imarinen Zone.

The Imarinen Zone and the Tizi Zone are two sub-parallel, single mineralized veins domains that are 200 m apart in the south and 500 m apart in the north, strike northerly, and dip vertically. Each

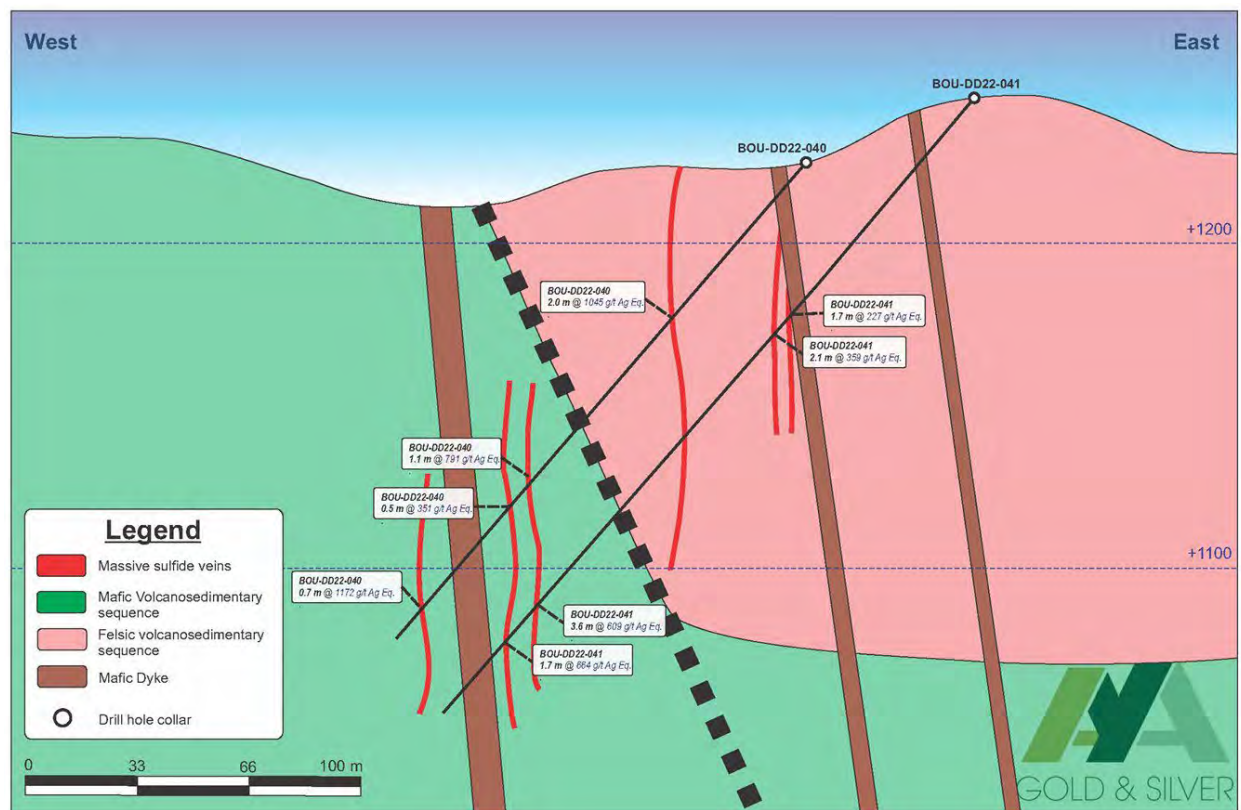
of these two zones has been traced on surface and in limited drilling for 1,000 m along strike and 600 m down-dip.

FIGURE 7.8 SURFACE PLAN VIEW OF THE BOUMADINE DEPOSIT MINERALIZED ZONES



Source: Aya press release dated April 16, 2024

FIGURE 7.9 CROSS-SECTIONAL PROJECTION 3,477,070 N OF THE CENTRAL ZONE



Source: Aya press release dated February 14, 2023.

Note: The heavy dashed line marks a fault.

7.4 MINERALIZATION

The Boumadine mineralized zones generally consist of 1 to 4 m-wide massive sulphide lenses/veins oriented N20°W and dipping 70° east. The massive sulphide veins (>70% sulphide) are composed mainly of pyrite, sphalerite, galena, arsenopyrite and chalcopyrite, with subordinate amounts of cassiterite, silver-rich sulphosalts, stannite, enargite, bismuthinite, native copper and bismuth (Figures 7.10 to 7.13). The main mineralization zone is generally surrounded by a 1 to 10 m (locally up to 20 m) thick halo of 10 to 30% disseminated pyrite and two types of veinlets: 1) quartz-carbonate-galena-sphalerite veinlets; and 2) massive pyrite veinlets (Freton, 1988).

Within massive sulphide veins, zones of breccias with silicified angular fragments and round fragments have been completely replaced by pyrite. Those breccia zones underline the presence of syn-volcanic faults, which probably served as fluid pathways for the mineralization. In weathered felsic tuffs, breccia fragments can be replaced by pyrite which locally form large, mineralized sub-zones as much as 10 m thick. Those thick sub-zones are interpreted to be the upper part of the hydrothermal system. Geochemically, there is a strong positive correlation of gold with silver and copper and a weaker correlation of zinc with lead and molybdenum.

FIGURE 7.10 BRECCIATED AND SLIGHTLY OXIDIZED PYRITE-RICH MINERALIZATION



Source: Boily (2014)

Figure 7.10 Description: Typical brecciated and slightly oxidized pyrite-rich mineralization with quartz veinlets mined from polymetallic veins and collected from the Central Zone muck pile.

FIGURE 7.11 GALENA-RICH MINERALIZATION



Source: Boily (2014)

Figure 7.11 Description: Galena-rich mineralization with pyrite, pyrrhotite, chalcopyrite, sphalerite and second stage quartz veins that contain most of the Au and Ag mineralization. Collected from the Central Zone muck pile.

FIGURE 7.12 PYRITE-SPHALERITE MINERALIZED MATERIAL FROM THE CENTRAL ZONE

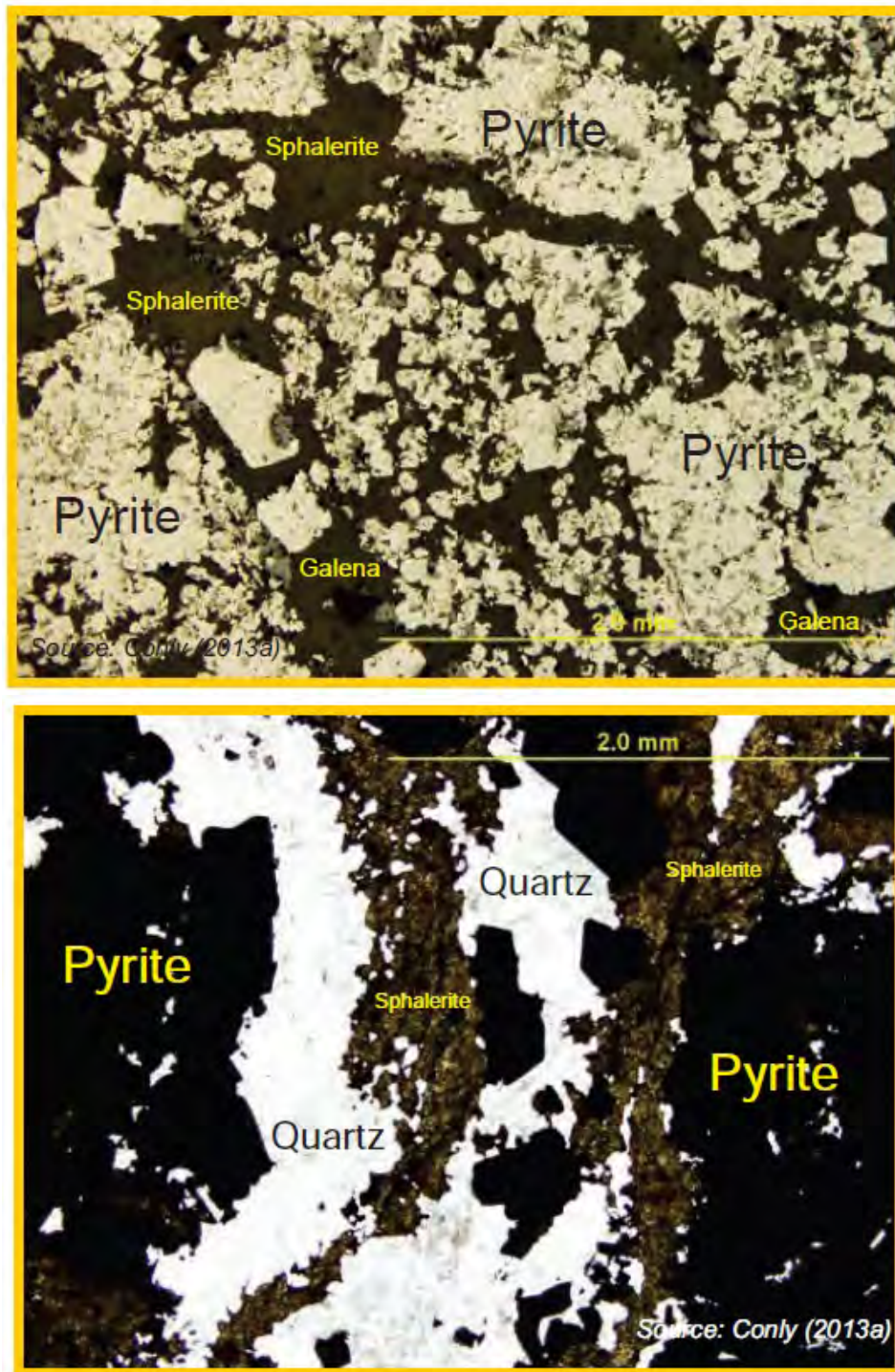


Source: Boily (2014)

Figure 7.12 Description: Mineralized material sample BOU2012-02 collected from the muck pile near Shaft A of the Central Zone, historical Boumadine Mine.

U/Pb single zircon dating from a “chonolithic” rhyolite intrusion cutting the mineralized veins yielded an age of 553 ± 16 Ma (Levresse, 2001). This result is consistent with a late Neoproterozoic maximum age for the mineralization.

FIGURE 7.13 MASSIVE SULPHIDE MINERALS AND TEXTURES AT BOUMADINE



Source: Boily (2014)

Figure 7.13 Description: A) Reflected light microphotograph showing the paragenetic relationship between pyrite, galena and sphalerite. Sample BOU2012-02. B) Transmitted light photomicrograph showing mineralogical and textural variations in sphalerite + quartz veins in sample BOU2012-02. Low Fe-bearing sphalerite (yellow-brown) occurs in the core of a diverging quartz vein that is cutting recrystallized coarse-grained massive pyrite.

8.0 DEPOSIT TYPES

Boumadine mineralization traditionally was considered to be hosted only in felsic tuffs (Abia *et al.*, 2003; Bouabdellah and Levresse, 2016; Duplessis *et al.*, 2019). However, drilling completed from 2017 to 2023 intercepted mineralized veins within mafic tuffs. Furthermore, the mineralized veins in the mafic tuffs appear to be more continuous, richer and thicker than in the felsic tuffs.

Hydrothermal alteration at Boumadine resembles that found in high sulphidation (acid) epithermal systems. Aluminous alteration is more proximal to sulphide-rich mineralized zones and the propylitic alteration more distal. Propylitization is generally induced by the convection of surface fluids, whereas aluminous alteration results from the contribution of acidic magma-derived fluids during degassing of andesite/diorite subvolcanic intrusions.

On the other hand, high-sulphidation deposits are composed of sulphides rich in S and Cu, such as tennantite and enargite. At Boumadine, the sulphides are mainly pyrite and minor sphalerite and galena, and trace chalcopyrite. This sulphide mineral affiliation is more like that of a volcanogenic massive sulphide type.

The current Company-preferred interpretation is that the mineralizing system at Boumadine developed under shallow submarine conditions in a graben setting (Bouabdellah and Levresse, 2016). In this model, magma-derived high-temperature acidic fluids/vapours containing Au and Ag ascend from the subvolcanic andesite/diorite intrusions and mix with circulating low-temperature, seawater-derived chlorinated fluids containing Fe, Zn and Pb. Mixing, cooling and wall rock reactions drive metal precipitation and deposition in volcanoclastic rocks below the seafloor.

Other shallow submarine, seawater-entrained polymetallic epithermal systems have been reported elsewhere (Hannington *et al.*, 2005), with perhaps the best known example being at Milos Island (Greece) in the Aegean Sea (Alfieris *et al.*, 2013).

9.0 EXPLORATION

Exploration activities completed by Aya on the Boumadine Property include trenching, hyperspectral surveys, mineral prospecting, geological mapping and grab sampling. Each of these activities is summarized below.

9.1 TRENCHING

One trench (37 m) was excavated during the early 2022 drilling campaign on section 8125N between drill holes BOU-DD22-001 and BOU-DD22-006. The goal was to find mineralization at surface. Assaying failed to return any significant values. The trench was too shallow to expose the target and it was judged unnecessary to extend it, because mineralization was intersected in the subsurface by drill hole BOU-DD22-006.

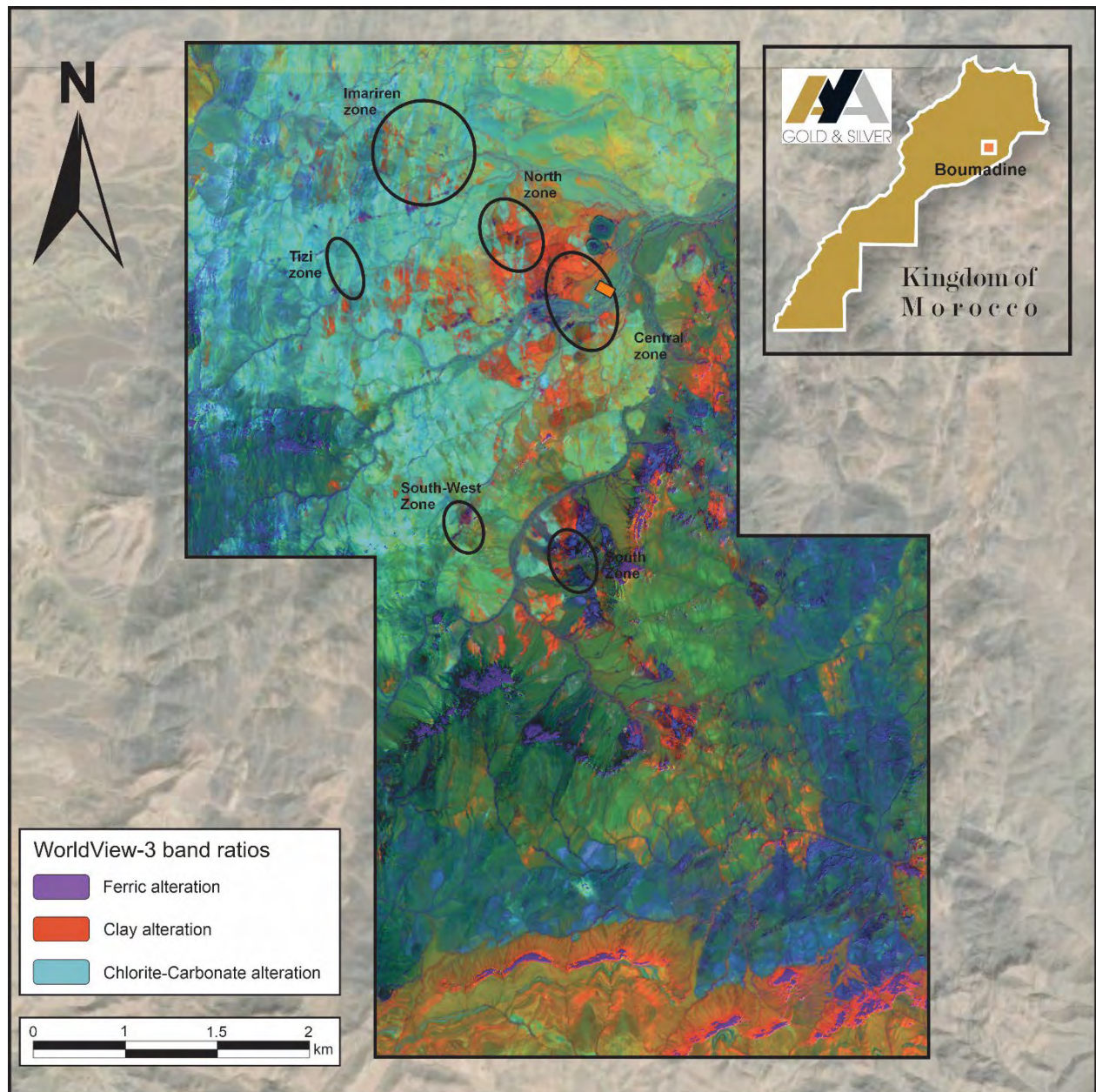
9.2 HYPERSPECTRAL

At the end of 2021, Compagnie Générale de Geophysique – Veritas (“CGG”) carried out a satellite-based geological and mineral mapping study for Aya over the Boumadine Project. The aim of the study was to process satellite imagery and identify areas of possible mineral alteration and place these in a geological context. This study enabled the generation of geologically valid target areas that was subsequently visited in the field during geological mapping in 2022 and 2023. The program was completed in two stages: 1) a regional project outlining the main structural controls and areas of alteration carried out at 1:25,000 scale; and 2) a detailed 1:5,000 scale project that focused on the historical permits (LE-383661).

Several satellite datasets were supplied by CGG and processed and interpreted over the Aya licences. For the regional project, Sentinel-2 imagery was used for the geological interpretation with Copernicus elevation data being merged to enhance this process. ASTER imagery was utilized for its spectral range, which enables clay/iron/carbonate alteration related to hydrothermal alteration associated with intrusions to be imaged. For the detail mapping, WorldView-3 imagery was used for both the structural and spectral mineral mapping.

The mineral outputs exhibited a strong correlation with the main structures mapped (at 1:25,000 scale). There is significant argillic alteration along the northwest-trending fault in the northeastern area of the Boumadine Licence (Figure 9.1). There is also significant argillic alteration along the northeast-trending fault slightly to the west of the main Boumadine Licence area. Mineral outputs also display a strong correlation with the underlying geology in the Northern Zone on the licence area, with the altered rhyodacite-rhyolite ignimbrite clearly highlighted.

FIGURE 9.1 MAP OF THE HYPERSPECTRAL SURVEY COMPLETED ON BOUMADINE



Source: Aya (April 2024)

9.3 AIRBORNE GEOPHYSICAL SURVEYS

In March 2022, Geotech Ltd. conducted an airborne geophysical survey at the Boumadine Project. A total of 366 linear-km (33 km²) was flown in a west to east (N90°E) direction with traverse line spacing of 100 m. Tie lines were flown perpendicular to the traverse lines at a spacing of 1,000 m.

Principal geophysical sensors included a versatile time domain electromagnetic (“VTEM”) system, airborne magnetics using a caesium magnetometer, and RSI ARGs RSX-5 spectrometer system.

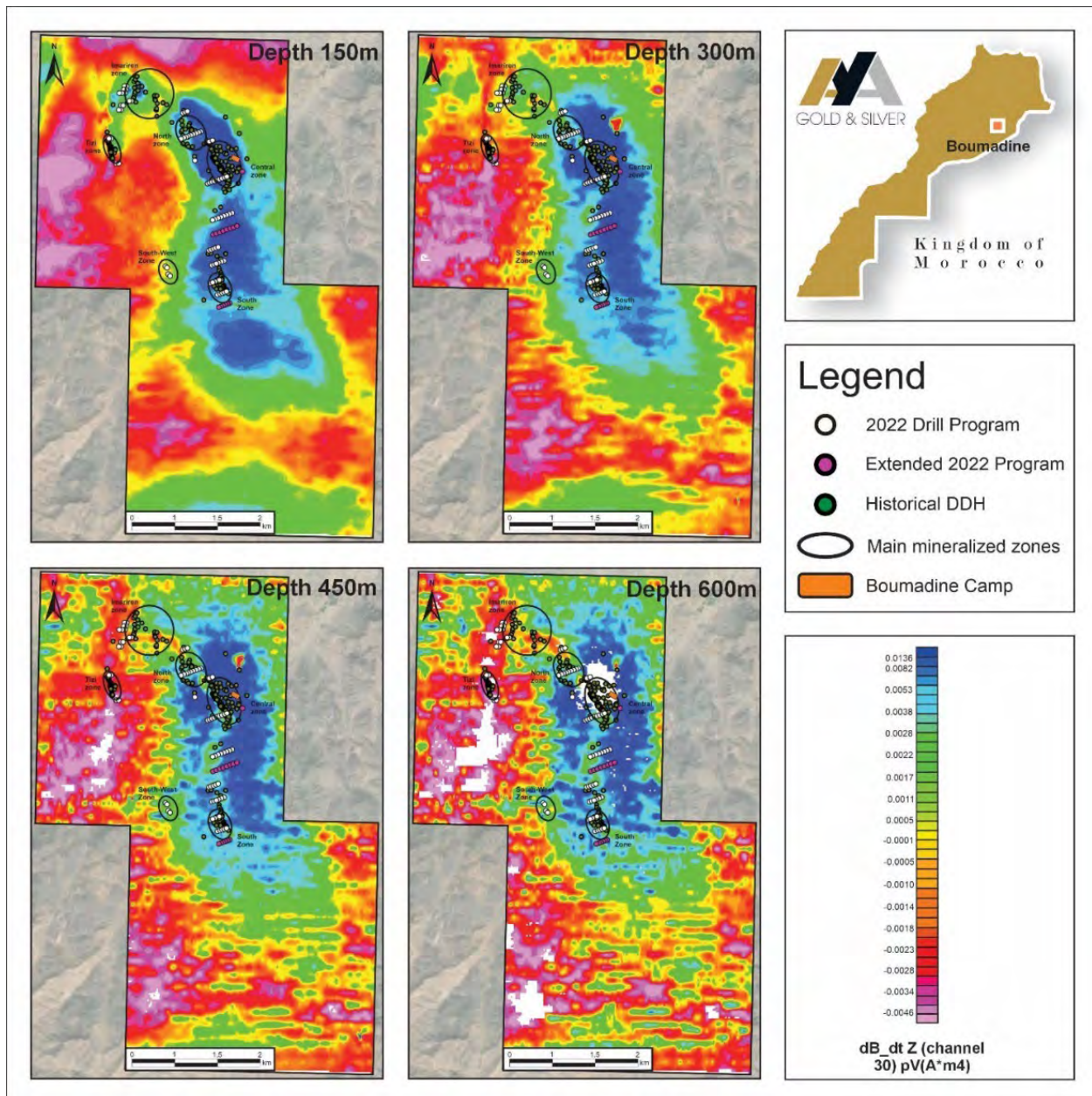
The purpose of the survey was to provide magnetic and resistivity coverage over the permit with sufficient resolution to map the footprint of the known mineralization and any potential extensions.

The airborne results of both methods were of good quality and meaningful. Electromagnetically, Boumadine features a prominent, large ($>4.5 \times 1.5$ km), variably conductive, north-south elongate resistivity low feature in the centre of the block that roughly coincides with all the historical mining work (Figure 9.2).

The resistivity low also coincides well with the northern half of the magnetic low (Figure 9.3). Those anomalies accurately mapped the known mineralization and supports extension of the favourable prospective corridor to the north and the south.

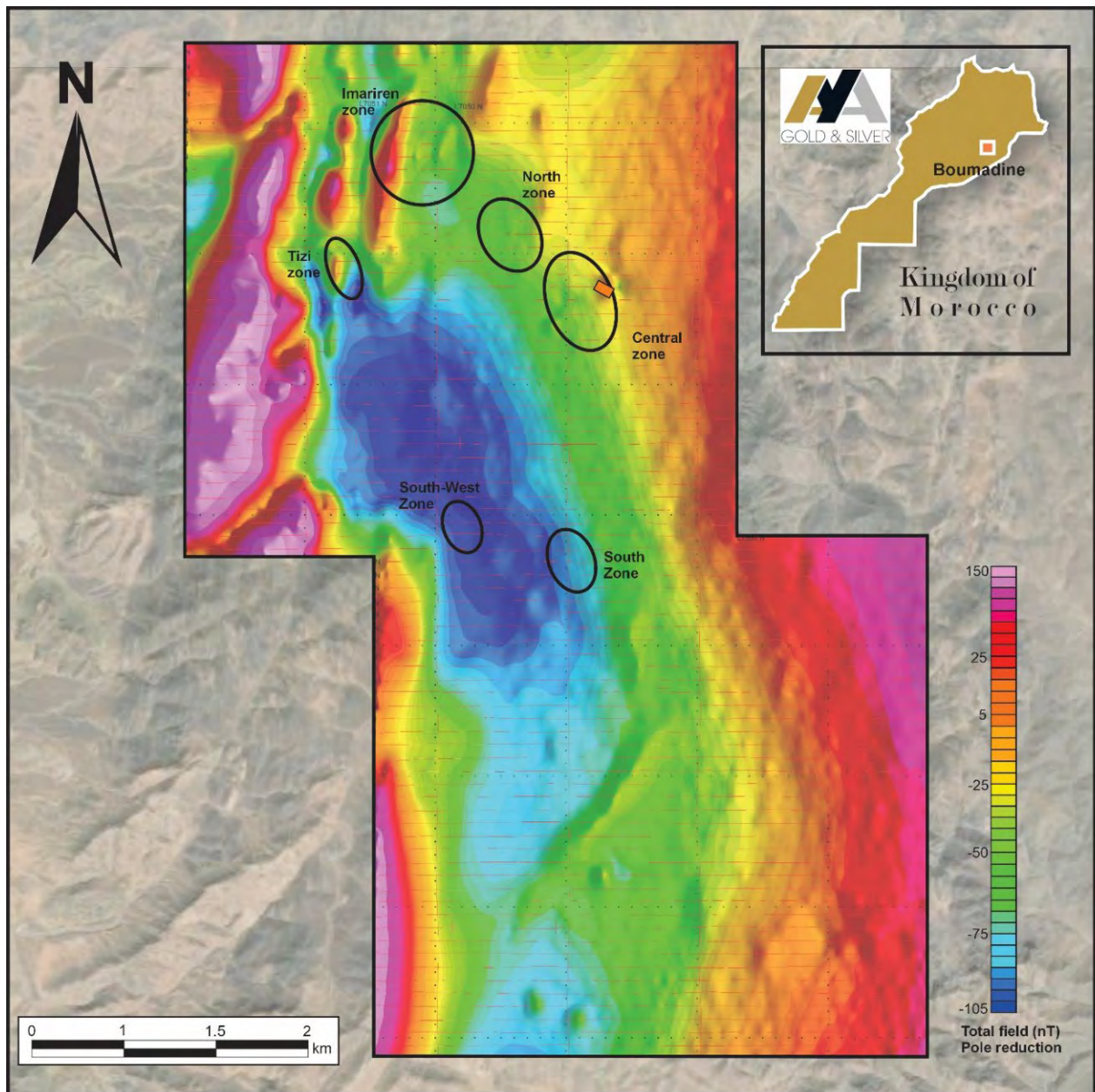
With the success of the VTEM geophysical survey, a new airborne geophysical survey began (February 2024) at the Boumadine Project that is to cover all the new licenses recently acquired. The new survey will be more precise at depth and provide data up to 1 km deep (conductivity) and 2 km deep (resistivity).

FIGURE 9.2 BOUMADINE VTEM SURVEY DEPTH SLICES



Source: Aya (April 2024)

FIGURE 9.3 VTEM MAGNETIC SURVEY COMPLETED AT BOUMADINE



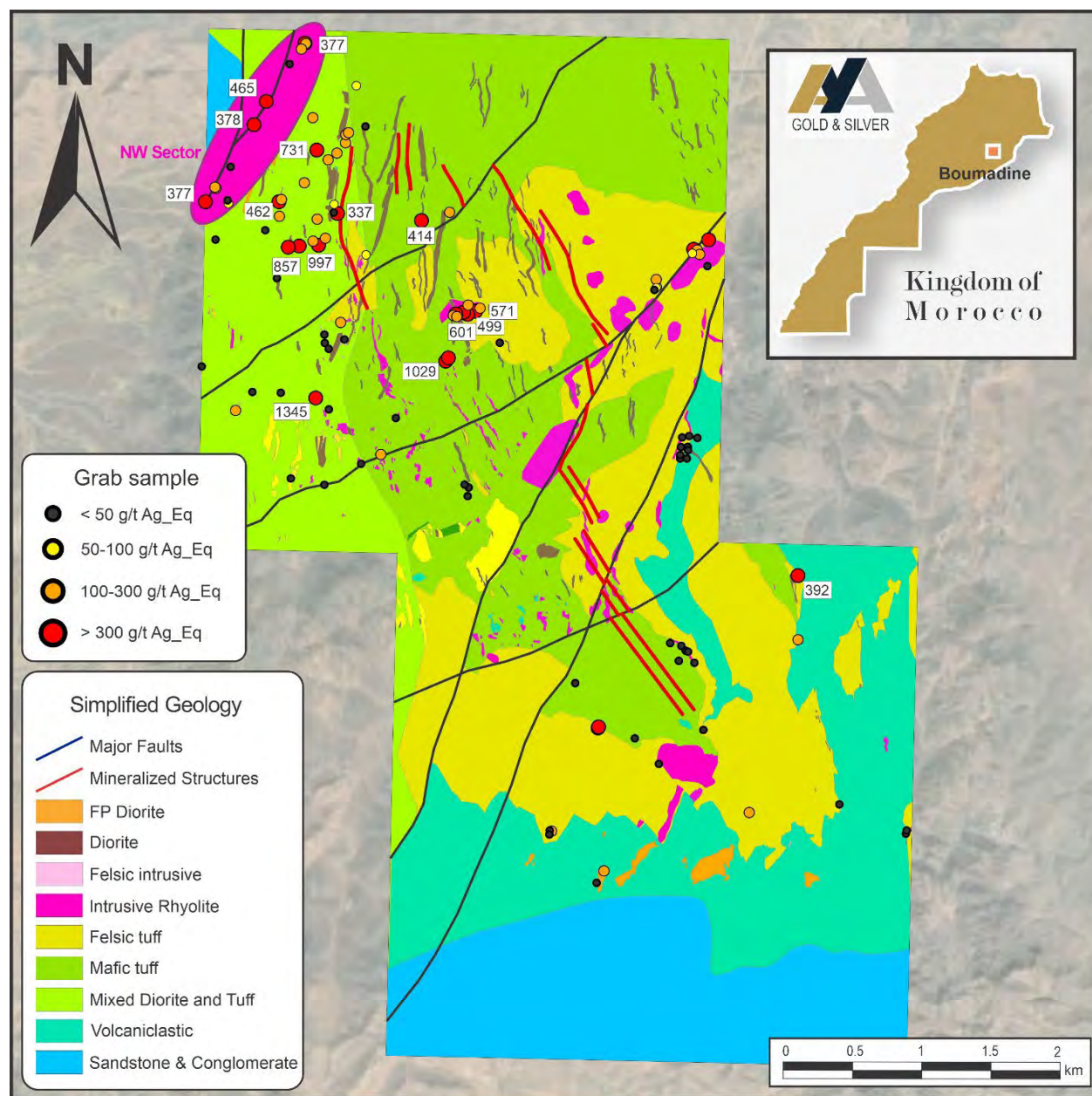
Source: Aya (April 2024)

9.4 GEOLOGICAL MAPPING

Detailed mapping was carried out on Boumadine historical prospects, with the objective to improve geological understanding of the mineralization and geological events.

From the mapping work, two major fault sets were recognized: 1) a fault event N030 that intersects the main Boumadine corridor (N340) and could be responsible for the Au-Zn mineralization event; and 2) an N70°E fault event cutting both the N20°W and N70°E structures that appears to be responsible for the Ag-Pb mineralization event (Figure 9.4).

FIGURE 9.4 SIMPLIFIED GEOLOGICAL MAP WITH 2023 SURFACE SAMPLE LOCATIONS



Source: Aya (April 2024)

9.5 GRAB SAMPLING

In 2023, 127 surface grab samples were taken (36 assays pending by the effective date of this Report), leading to identification of a new mineralized structure to the northwest of the Property (see Figure 9.4 above). The structure, which can be followed for >1.5 km, graded up to 3.45 g/t Au (sample 2260129), 186 g/t Ag (sample 2274547), 9.40% Cu (sample 2274534), 27.40% Pb (sample 2274545), and 1.80% Zn (sample 2274547) (Table 9.1). The mineralization exhibits stockwork quartz-pyrite-chalcopyrite veinlets associated with silicified felsic dykes injected into

a corridor of faults located at the contact of volcanic rocks and sedimentary rocks. This discovery shows the mineralization potential outside of the main Boumadine corridor.

TABLE 9.1 GRAB SAMPLING ASSAY HIGHLIGHTS					
Sample ID	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
2260129	3.45	40.0	0.75	0.16	0.06
2260130	3.37	23.4	0.28	0.04	0.03
2260131	2.83	44.0	0.54	0.06	0.02
2260113	2.00	28.0	0.01	1.97	0.06
2260119	1.92	122.0	0.01	0.82	0.08
2260121	1.92	90.0	0.01	0.35	0.06
2274531	1.32	2.5	0.01	0.01	0.01
2260134	0.99	28.0	0.49	0.71	0.27
2274547	0.03	186.0	2.38	8.14	1.80
2274521	0.03	122.8	0.77	10.21	0.40
2260119	1.92	122.0	0.01	0.82	0.08
2274534	0.07	112.0	9.40	0.01	0.01
2274545	0.03	110.0	0.05	27.40	0.09

Source: Aya (April 2024)

10.0 DRILLING

10.1 SUMMARY

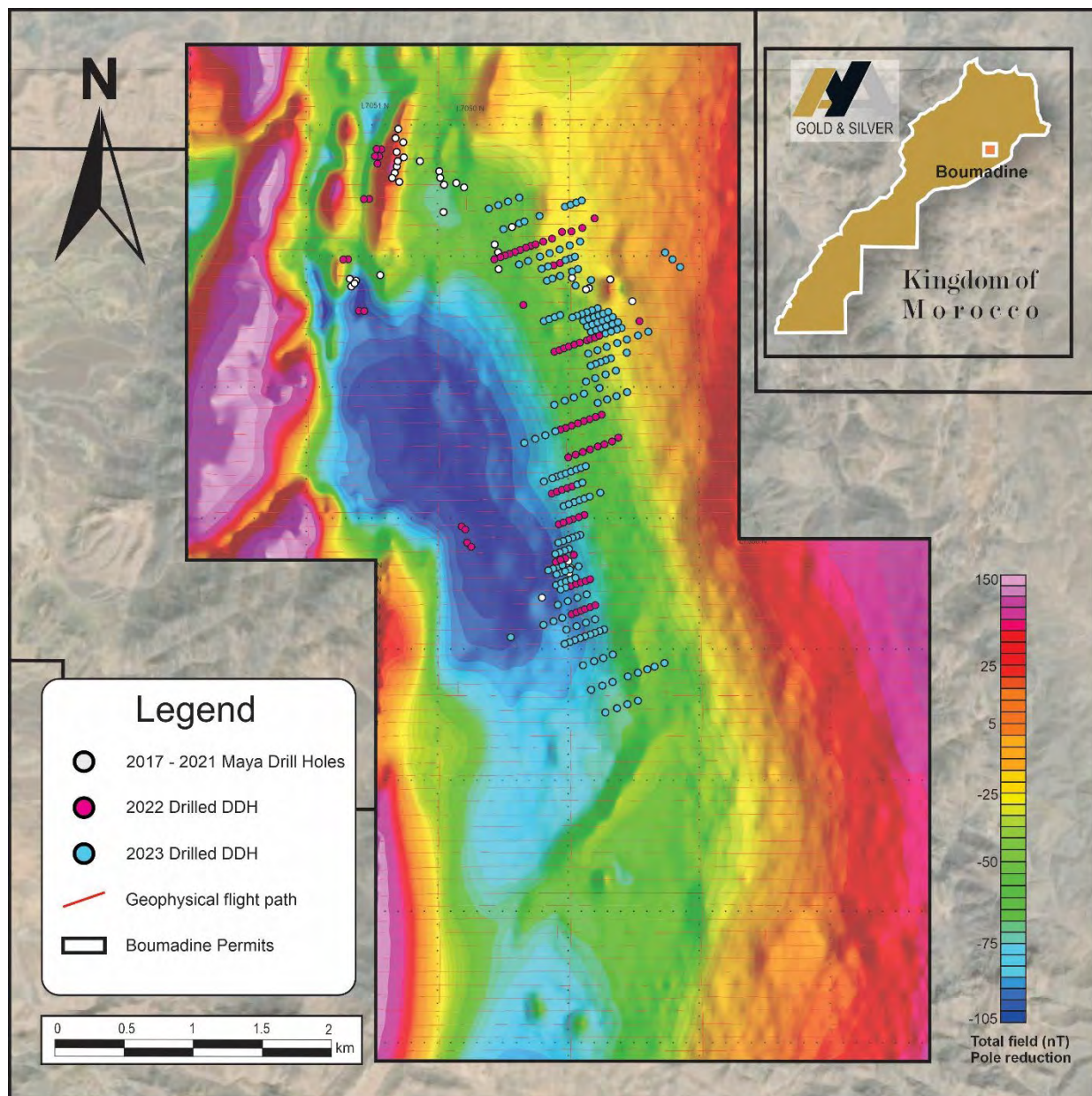
According to data provided by Aya, 495 surface and underground diamond drill holes totalling 117,731 m have been completed on the Boumadine Property (Table 10.1). A total of 367 drill holes totalling 107,676 m were available for the updated Mineral Resource modelling.

TABLE 10.1 AYA DIAMOND DRILLING AT BOUMADINE								
Period	Company	Surface		Underground		Total Drill Holes	Total Metres	Comment
		Drill Holes	Metres	Drill Holes	Metres			
1964 to 1985	BRPM	70	13,467	48	2,124	138	15,591	Excluded from 2024 Updated MRE
2017	MAYA	14	3,158	---	---	14	3,158	
2018 to 2020	MAYA	77	9,507	---	---	77	9,507	Included in 2024 Updated MRE
2022	AYA	86	19,702	---	---	86	19,702	
2023	AYA	171	65,572	---	---	171	65,572	
2024	AYA	9	4,201	---	---	9	4,201	Excluded from 2024 Updated MRE

Since May 2022, Aya has completed a total of 266 drill holes at the Boumadine Project for a total of 89,475 m (Figures 10.1 to 10.3). Aya drilling programs have focused mainly on extending the mineralization of the three main zones (North Zone, Central Zone and South Zone) and to prove continuity between them, forming a single ‘Main Trend’.

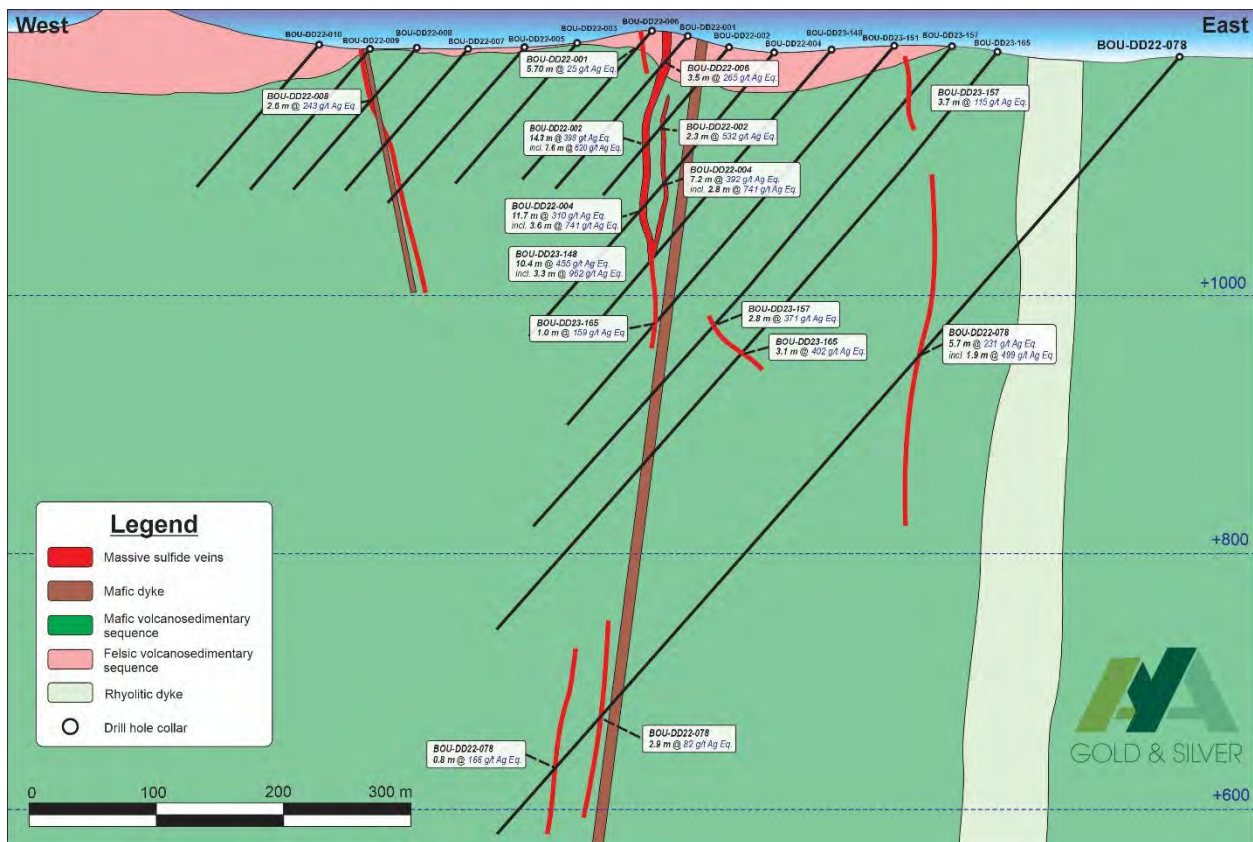
In addition, all historical drill holes from 2018 to 2021 were re-logged and resampled by Aya in 2023 for a total of 77 drill holes and 9,510 m of drill core. The historical BRPM drill holes and 2017 Maya’s drill holes have not been retrieved in the Aya drill core yard. Therefore, it was not possible to proceed with re-sampling and the decision was made to include those drill holes for geological interpretation and exclude them from Mineral Resource estimation. Information from the drill holes completed in 1992 by the SODECAT-BRPM has not been found, and those drill holes are not included in Aya’s Mineral Resource database.

FIGURE 10.1 AYA 2022 AND 2023 DRILL HOLE COLLAR LOCATION MAP



Source: Aya (April 2024)

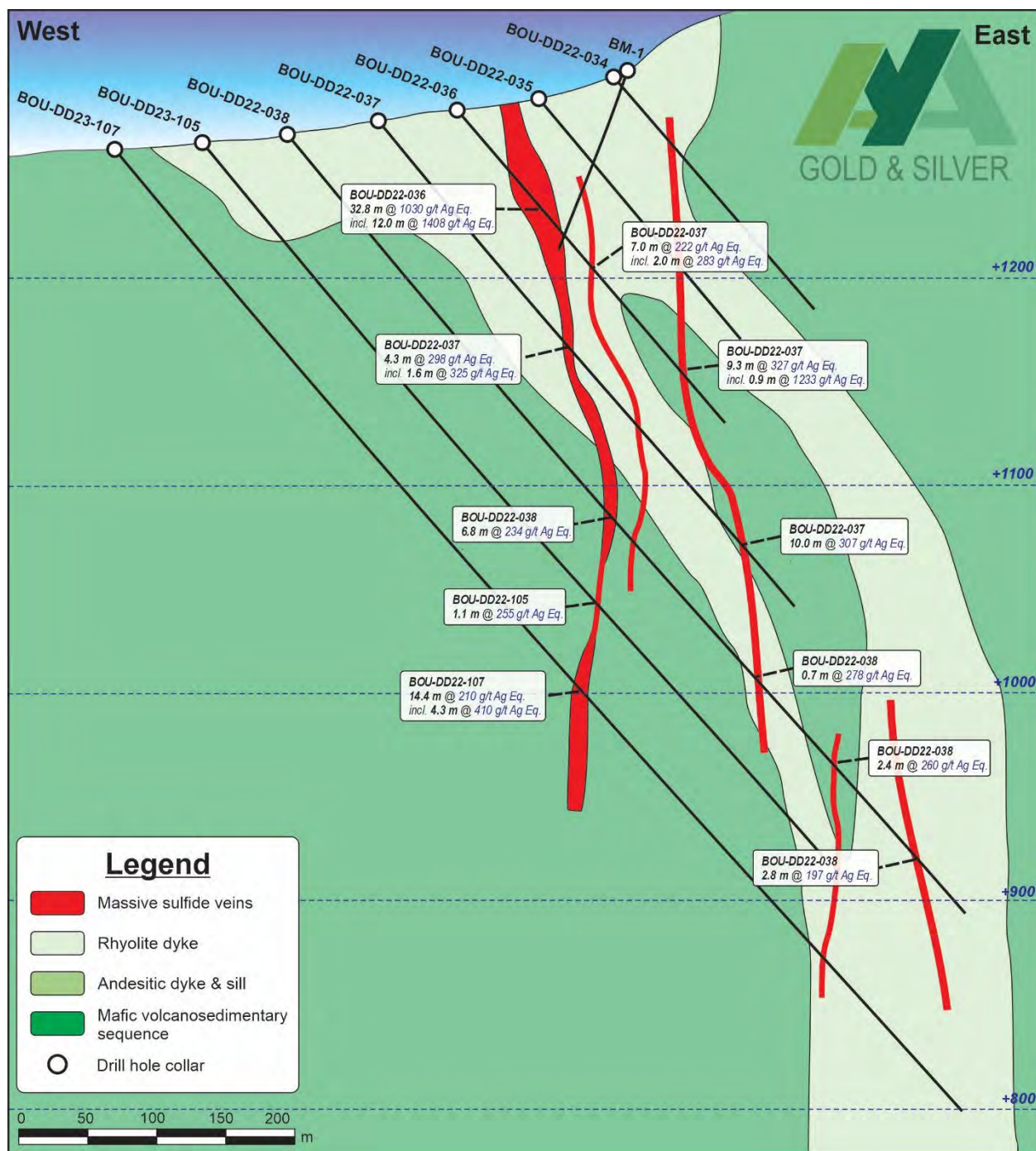
FIGURE 10.2 INTERPRETED DRILL HOLE CROSS-SECTION PROJECTION 8125N



Source: Aya (April 2024)

Figure 10.2 Description: Ag equivalent is based on 100% recovery with the following ratios: 1 g/t Au: 93.4 g/t Ag; 1% Cu: 130.4 g/t Ag; 1% Pb: 31.8 g/t Ag; 1% Zn: 54.1 g/t Ag. All assay values are uncut. All intersections are in core lengths, as true thickness remains undetermined at this stage.

FIGURE 10.3 INTERPRETATION OF DRILL CROSS-SECTION PROJECTION 6400N



Source: Aya (April 2024)

Figure 10.3 Description: Ag equivalent is based on a 100% recovery with the following ratios: 1 g/t Au: 93.4 g/t Ag; 1% Cu: 130.4 g/t Ag; 1% Pb: 31.8 g/t Ag; 1% Zn: 54.1 g/t Ag. All assay values are uncut. All intersections are in core lengths, as true thickness remains undetermined at this stage.

10.2 DRILLING PROCEDURES

The typical drill pattern employed by Aya consist of a series of drill lines oriented perpendicular to the trend of the mineralization. Most of the drill holes are oriented N70°E or S70°W, depending on the terrain. The drill hole spacing for most of the Main Deposit is 100 m. Some areas have been in-filled to 50 m drill spacing and in other areas, satellite deposits and at the edge of the Main Deposit, drill spacing is 200 m.

GEOSOND Maroc SARL is the drilling company that executed the program between 2022 and 2023. All drilling to date has been completed using diamond core drilling to produce either HQ or NQ core.

Prior to the start of drilling, the collars are set out in the field with a standard hand-held GPS with a precision of ± 3 m in easting and northing; after completion of the drill holes, the collar locations are surveyed by a professional surveyor with a DGPS Trimble R8s. Drill rigs were aligned using a standard compass with back and front site pickets.

During drilling, the drill core is placed in standard plastic drill core boxes and every 3 m run is marked by a labelled plastic drill core block. Each drill core box is labelled with the drill hole ID and a sequential box number. The drill core boxes are delivered by the drilling contractor every morning at the end of the night shift to the Boumadine drill core shack.

Downhole orientation measurements were made with a Reflex EZ-Shot (by Reflex Instruments Inc.) until drill hole BOU-DD23-192. For all the subsequently completed drill holes, a Devico Devi-flex was used. Downhole surveys are performed by the drillers. Measurements are made initially at 12 m and subsequently at 25 m intervals. The data are communicated to the geologists in the morning with the daily drill report.

Following removal of the drill rig, a 1 m PVC tube is inserted into the drill hole and it is cemented. The drill hole number is written on the concrete base (Figure 10.4).

FIGURE 10.4 DRILL HOLE COLLAR LOCATIONS



Source: This Study

At the drill core shack, “from-to” of every drill core box are measured by geologists, and the core logging information is recorded in the logging software (GeoticLog). After logging and sampling, drill core boxes are stacked outside with one drill hole per cross-pile within a fenced and guarded enclosure around the Boumadine drill core shack (Figure 10.5).

FIGURE 10.5 STACKED DRILL CORE AT BOUMADINE



Source: This Study

10.3 DRILLING RESULTS

In general, drilling exploration and definition has identified and further defined the distribution of mineralization in three areas: North Zone, Central Zone, and South Zone. Drilling results on the main structure show a strong continuity of the mineralization.

The two drill holes with best results, BOU-DD22-036 (Figure 10.3) and BOU-DD23-223, show the same relationships, specifically hydrothermal mineralization in felsic rocks associated with normal faults subparallel to the drill core angle. Drill hole BOU-DD23-095 also returned exceptional assay results and shows similar characteristics (Table 10.2).

The mineralization, particularly in drill holes BOU-DD-23-180 and BOU-DD22-036 (Table 10.2 and see Figure 10.3), occurs in vertical subvolcanic felsic intrusions. Laterally, the intrusions disappear and the mineralization becomes less impressive. Additional drilling will be required to define the high-grade mineralization as a shoot within the plane of the main mineralization.

TABLE 10.2
SIGNIFICANT INTERCEPTS FROM THE 2022 AND 2023 DRILLING PROGRAMS

Drill Hole	Section	From (m)	To (m)	Length (m)*	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Mo (ppm)	AgEq (g/t)**	AgEq x Length
BOU-DD22-002	8125N	93.3	108.6	15.3	2.14	71	0.1	0.5	1.4	15	375	5,744
Including		93.3	104.5	11.2	2.74	92	0.1	0.6	1.6	14	474	5,313
BOU-DD22-021	7125N	94.5	103.5	9.0	5.37	67	0.3	0.8	2.9	43	795	7,159
BOU-DD22-036	6400N	42.2	75.0	32.8	2.12	233	0.1	4.2	8.4	155	1,039	34,092
Including		55.9	67.9	12.0	4.64	236	0.0	4.3	11	135	1,416	16,998
BOU-DD22-080	7325N	202.9	210	7.1	0.85	420	0.2	0.8	2.9	105	707	5,021
BOU-DD23-095	6000N	510.5	534.8	24.3	1.03	33	0.0	0.5	1.4	11	222	5,390
BOU-DD23-095	6000N	576.6	593.2	16.6	2.51	56	0.1	0.6	2.3	12	443	7,352
Including		580.2	590.6	10.4	3.52	71	0	0.8	3.5	12	621	6,456
BOU-DD23-111	7000N	6.1	15.7	9.6	1.76	134	0.1	0.5	3.9	16	539	5,172
BOU-DD23-142	5600N	599.2	611	11.8	0.97	88	0	1.6	4.2	296	475	5,606
BOU-DD23-143	8775N	214.6	223.9	9.3	12.34	94	0.1	0.4	2.5	26	1,410	13,117
Including		217.2	223.3	6.1	16.04	122	0.2	0.3	2.6	27	1,796	10,954
BOU-DD23-152	8775N	270.1	276	5.9	7.42	153	0.1	1.7	0.3	14	928	5,474
Including		270.1	275	4.9	8.52	175	0.1	2	0.2	12	1,056	5,173
BOU-DD23-161	8325N	186.9	195.3	8.4	4.72	122	0.3	0.2	1.1	6	664	5,580
BOU-DD23-162	8675N	237.2	244.4	7.2	6.39	82	0.1	0.4	0.8	8	748	5,389
BOU-DD23-168	8325N	143.9	151.7	7.8	4.36	97	0.2	1.3	2.4	77	698	5,442
BOU-DD23-172	8550N	151.8	155.5	3.7	22.03	531	0.2	0.3	1.3	9	2,689	9,951
BOU-DD23-176	8275N	69.1	99.7	30.6	1.42	20	0	0.3	0.6	8	202	6,177
BOU-DD23-178	8275N	166.4	175.9	9.5	2.7	49	0.2	1.8	4.2	36	613	5,821
BOU-DD23-180	8375N	165.1	188.6	23.5	6.41	116	0.4	0.6	4.7	3	1,039	24,423
BOU-DD23-184	8225N	104.8	134.9	30.1	2.57	85	0.1	0.6	2.2	15	474	14,253
BOU-DD23-186	8175N	37.8	54.4	16.6	1.85	150	0.1	0.3	1.9	8	442	7,341
BOU-DD23-218	8850N	252.6	256.8	4.2	13.59	115	0.1	0.1	0.1	3	1,409	5,919
BOU-DD23-218	8850N	280.3	286.1	5.8	9.21	80	0.2	0.1	0.1	8	978	5,671

TABLE 10.2 SIGNIFICANT INTERCEPTS FROM THE 2022 AND 2023 DRILLING PROGRAMS												
Drill Hole	Section	From (m)	To (m)	Length (m)*	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	Mo (ppm)	AgEq (g/t)**	AgEq x Length
Including		280.3	284.3	4	13.05	108	0.3	0.1	0.2	8	1,377	5,510
BOU-DD23-220	6575N	105	115.9	10.9	1.77	91	0.1	1.7	4.5	133	575	6,270
BOU-DD23-223	6525N	131.6	169.9	38.3	1.53	311	0	1.8	4.4	101	763	29,236
Including		144.9	155.9	11	2.34	494	0.1	1.9	3.9	36	996	10,954
BOU-DD23-230	6575N	166.6	184.2	17.6	2.64	247	0.3	1.2	7.7	86	991	17,450
Including		177.6	181.3	3.7	2.91	651	0.1	3.2	11.5	106	1,662	6,150
BOU-DD23-230	6575N	188.2	202.3	14.1	2.78	97	0.2	0.4	6.5	31	755	10,648
BOU-DD23-248	6450N	329.5	335.4	5.9	5.94	59	0.1	1	8.8	23	1,136	6,701

Source: Aya press releases dated 2023 and 2024

Notes:

* All assay values are uncut. All intersections are core lengths, as true width remains undetermined at this stage.

**Ag equivalent is based on 100% recovery with the following ratios: 1 g/t Au: 93.4 g/t Ag; 1% Cu: 130.4 g/t Ag; 1% Pb: 31.8 g/t Ag; 1% Zn: 54.1 g/t Ag.

11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

The following section discusses the sample preparation, analyses and security procedures carried out by Aya for the Boumadine Property between 2018 and 2024.

11.1 SAMPLE PREPARATION

11.1.1 Logging and Sampling

Logging and sampling of drill core are performed at Aya's onsite logging facility; a large warehouse with ample space for logging tables and direct vehicular access for drill core box delivery.

Geotech personnel align drill core pieces and check for gaps. Devicore BTT is utilized during drilling to indicate the drill core orientation of the top surface of the drill core, and during drill core logging this mark is continued along the entirety of the drill core in a straight line. Logging procedure includes using core orientation to determine the azimuth and dip of each structure encountered (e.g., veins, contacts, faults). Digital photographs are taken of the drill core and drill core recovery, RQD, basic geotechnical information, geological and structural elements are recorded in the drill core logs. Sample intervals are marked and samples for bulk density determination are also selected. Drill core recovery is generally good; however, when poor, the samples are shorter and there are small gaps in the sampled drill core to show where it was lost.

All data are entered using Geotic software and logging is regularly supervised with sign-off on all steps by a supervisor. When logging is complete, the data are audited in a spreadsheet available to all personnel involved before being imported into a Master file with limited access to select authorized personnel only. Nominal drill core sample intervals are 1.0 m, which are adjusted to respect lithological contacts or abrupt changes in mineralization, with smaller intervals of 0.5 m.

Drill core samples are cut in half lengthwise using a diamond-blade saw. The rock saw operator cuts along contacts between samples along a line drawn by the logging geologists. One-half of the drill core is placed into a polyethylene bag with a sample tag, and the remaining half-drill core is carefully returned to its original position in the drill core boxes. Field duplicates are made by halving the already halved drill core again and both ¼-drill cores are sent as duplicates to the lab, leaving the remaining ½-drill core archived in the drill core box. Paper sample tags are stapled to the drill core boxes at the end of the sample intervals. Sample books were utilized with pre-recorded, unique sequential number tags reserved for QC samples at pre-determined locations.

11.1.2 Bulk Density Determinations

Bulk density determination is performed onsite by Aya geologists, with the water immersion method selected to determine the bulk density of rocks at Boumadine. Bulk density determinations are completed in a dedicated area, where the equipment is protected from disturbances, such as vibration or drafts, which might influence balance readings.

Aya's protocol requires the determination of wet (moisture percent) and dry bulk densities of mineralized and barren samples. Full drill core pieces of ~10 to 15 cm are used for the determinations. When this process is complete, the drill core is cut and one-half returned to the original location in the drill core box, with a piece of flagging tape stapled to the box to aid with future sample identification.

The equipment is calibrated on a daily basis with 0.5 and 1.0 kg reference materials used for wet and dry tests, and the balance is calibrated weekly with dry certified weights. The set-up is rudimentary, although acceptable and the equipment is scheduled to be upgraded with new apparatus currently on order.

As discussed in Section 14.4 of this Report, the average bulk density for the constrained sulphide material is 3.70 t/m³. For the current Mineral Resource Estimate a bulk density of 2.61 t/m³ was assigned to oxide and transitional blocks. For sulphide blocks, the median sulphide bulk density was assigned for each modelled domain.

11.1.3 Sample Preparation and Analysis

Samples were prepared by AfriLab at its Boumadine prep-laboratory facility or at its Zgounder prep-lab. A total of 250 g of pulverized sample material was subsequently submitted for analysis to Afrilab in Marrakech. When received at the analytical lab, drill core samples are crushed to <2 mm with a passing rate of 85% using a ROCKLABS jaw crusher. A sieving operation is used to ensure the sample is 85% <2 mm. To control the risk of contamination, the jaw crusher is cleaned thoroughly between each sample using compressed air and local barren waste rock.

The crushed sample is subsequently divided using a riffle splitter, in order to have a sub-sample of between 250 to 300 g. The splitter is cleaned thoroughly between each sample using compressed air.

The sub-sample (of 250 to 300 g) is pulverized using a ROCKS LABS pulverizer. Pulverizing performance is targeted to a size of 85% of the sample at <75 µm. One sample in twenty is selected at random to verify this performance, by wet sieve test (standard 75 µm sieve).

Silver, zinc, lead, copper and molybdenum are analyzed by Inductively Coupled Plasma ("ICP") spectrometry after 4-acid digestion. Gold is analyzed by fire assay method with AAS finish. Silver grades of >200 g/t Ag are further analyzed by fire assay method with gravimetric finish.

11.1.4 Security – Chain of Custody

Drill core remains under Aya's control from the drill site, where Company geologists supervise operations, to the on-site drill core logging facility, where drill core boxes are transported at the end of each shift for logging, cutting and sampling. When logging and sampling are completed, the plastic drill core trays are stored outside, on-site and cross-piled within a gated compound that is guarded by a security guard around the clock. Sample chain of custody is simplified by the presence of the on-site AfriLab preparation laboratory. Prepared samples are then shipped to the AfriLab facility in Marrakech and tracked through AfriLab's internal management system.

11.2 QUALITY ASSURANCE/QUALITY CONTROL REVIEW

Aya implemented and monitored a thorough quality assurance / quality control (“QA/QC” or “QC”) program for the drilling undertaken at the Boumadine Project during the 2018 to 2024 period. In addition to the internal QC protocol implemented at the laboratories, QC protocol at Boumadine included the sequential insertion of certified reference materials (“CRMs”), blanks and field duplicates into every batch of drill core samples sent for analysis (each batch contains 25 samples). Samples prepared at the drill core logging facility are numbered sequentially, such that drill core samples and QC samples are not able to be differentiated by the laboratory.

QC sample insertion rates are as follows:

- A range of CRMs over varying grades are inserted at a rate of 1 in 25 samples;
- Blank samples are inserted at a rate of 1 in 25 samples to monitor for instrumentation carry-over and contamination at the laboratory;
- Field duplicate samples were also inserted into the drill core sample stream, but not as systematically as the CRMs and blanks, at a rate of ~1 in every 50 samples from 2022 to 2024. Prior to this, four field duplicates only were inserted into three drill holes during 2018 and none were inserted during the 2019 drill program;
- At the end of each month, a selection of 5% of the coarse reject samples is submitted to Afrilab; and
- Check analyses at an umpire laboratory (ALS in Seville, Spain) are carried out on one in every 50 samples, representing ~2% of the global primary laboratory sample flow.

11.2.1 2018 to 2024 Diamond Drill Hole Programs

11.2.1.1 Performance of Certified Reference Materials

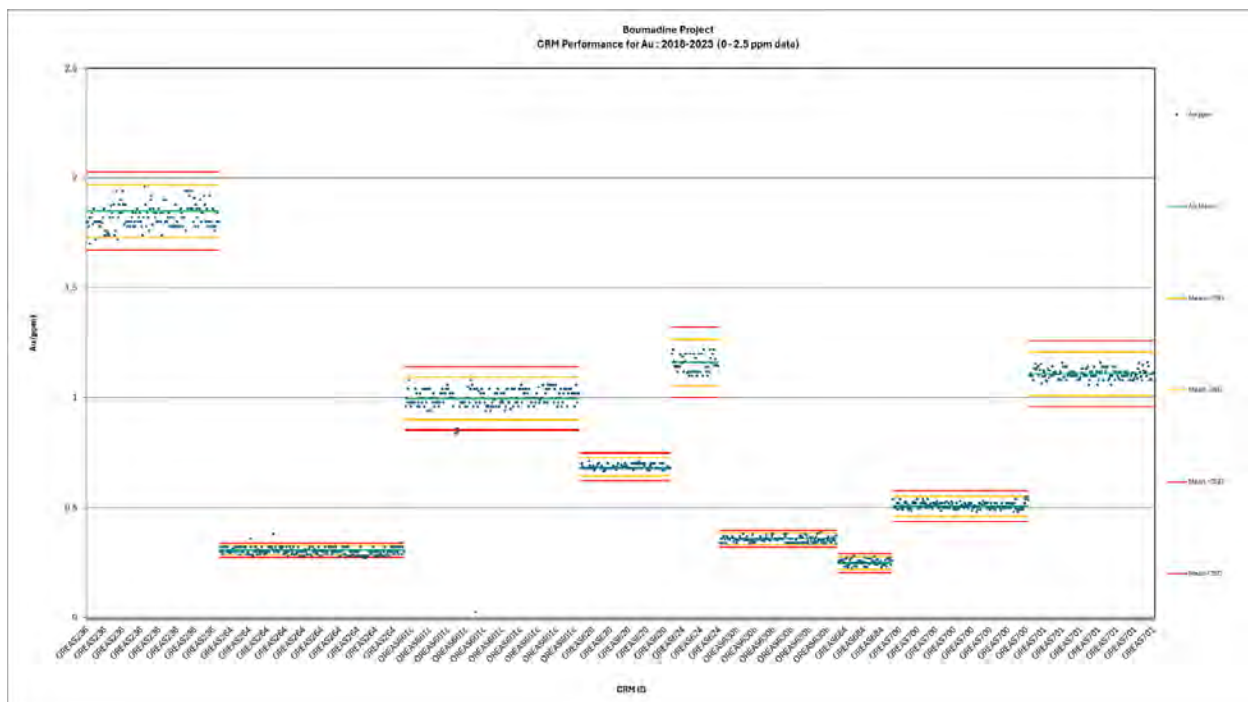
A total of 18 different OREAS certified reference materials (“CRMs”) were used during the 2018 to 2024 drilling at the Boumadine Project, to monitor accuracy at the lab for gold, silver, lead, zinc, molybdenum and copper. A summary of CRMs inserted into the drill sample stream and analyzed at AfriLab is outlined in Table 11.1. All 18 CRMs were purchased from ORE Research & Exploration Pty Ltd (“ORE”) in Australia and the corresponding certified mean value for each individual CRM is indicated in Table 11.1.

TABLE 11.1 SUMMARY OF REFERENCE MATERIALS USED AT BOUMADINE IN 2018 TO 2024						
Reference Material	Certified Mean Value					
	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Mo (g/t)	Cu (%)
OREAS100a	--	--	0.001	--	22.2	0.017
OREAS139	--	76.7	2.21	13.63	9.82	0.027
OREAS236	1.85	0.478	0.003	0.014	1.56	0.017
OREAS240	5.51	1.3	0.003	0.014	1.7	0.017
OREAS264	0.307	1.29	0.001	0.022	9.15	0.009
OREAS316	--	103	5.02	11.16	16.3	0.161
OREAS317	--	232	12.13	17.45	41.5	0.413
OREAS353	--	2,184	61.26	4.13	18.4	0.312
OREAS601c	0.996	50.3	0.033	0.043	3.66	0.116
OREAS603c	4.96	294	1.043	0.803	60	1.21
OREAS609b	4.97	24.6	0.045	0.131	5.54	0.498
OREAS620	0.685	38.5	0.774	3.15	9.47	0.173
OREAS624	1.16	45.3	0.624	2.4	16.3	3.10
OREAS630b	0.358	19	0.411	1.11	12.7	0.052
OREAS684	0.248	0.352	0.001	0.010	1.19	0.098
OREAS700	0.506	0.525	0.001	0.022	81	0.202
OREAS701	1.11	1.12	0.001	0.034	254	0.491
OREAS992b	15	340	0.374	0.862	7.29	44.73

Source: This Study

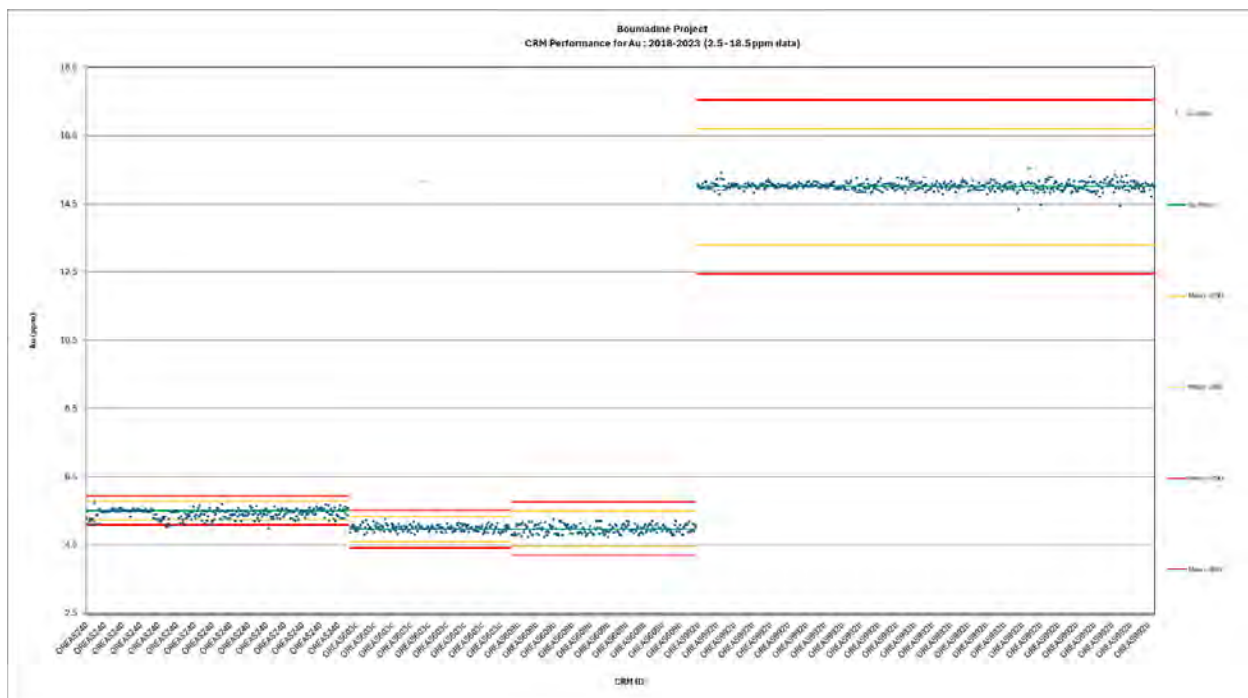
CRMs were inserted into the analysis stream approximately every 25 samples. Criteria for assessing CRM performance are based as follows: data falling outside ± 3 standard deviations from the accepted mean value, or two consecutive data points falling between ± 2 and ± 3 standard deviations on the same side of the mean, fail. The CRM results are presented in Figures 11.1 to 11.14. The Author of this Technical Report section considers that the CRMs demonstrate acceptable accuracy in the Boumadine 2018 to 2024 diamond drilling data and the relative few failures indicate no material issues with accuracy.

FIGURE 11.1 PERFORMANCE OF OREAS CRMS FOR AU (0 TO 2.5 PPM DATA)



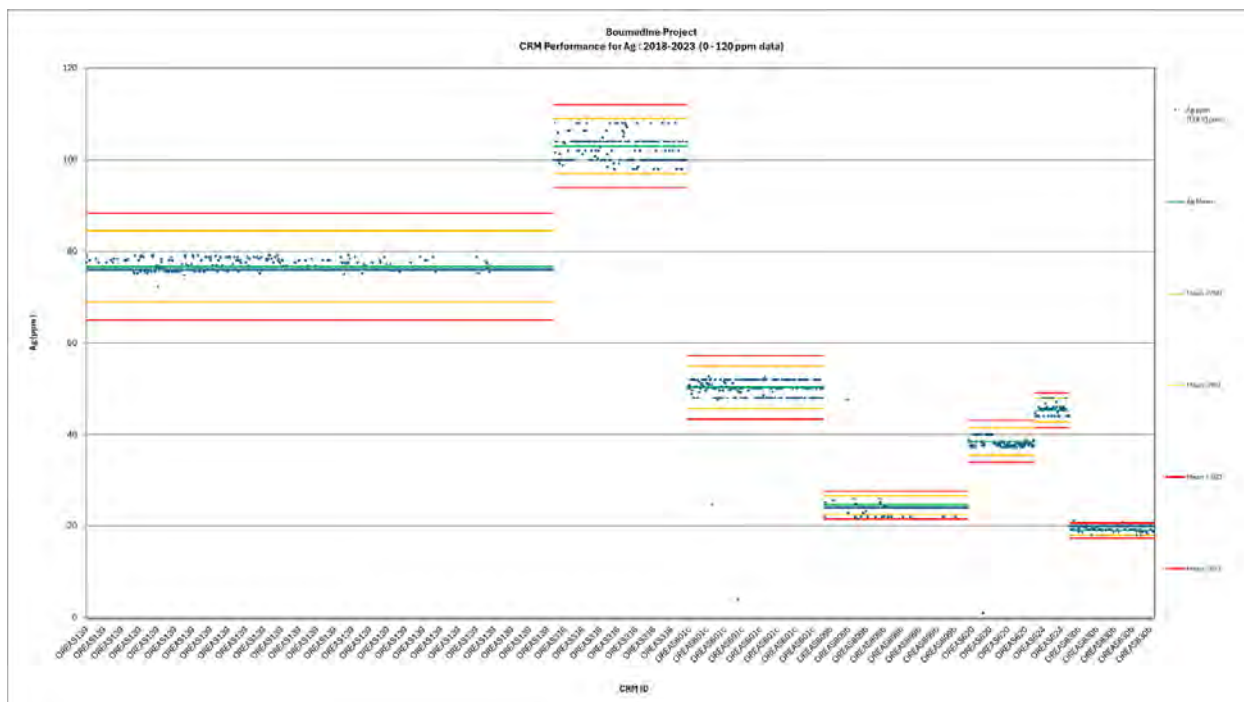
Source: This Study

FIGURE 11.2 PERFORMANCE OF OREAS CRMS FOR AU (2.5 TO 18.5 PPM DATA)



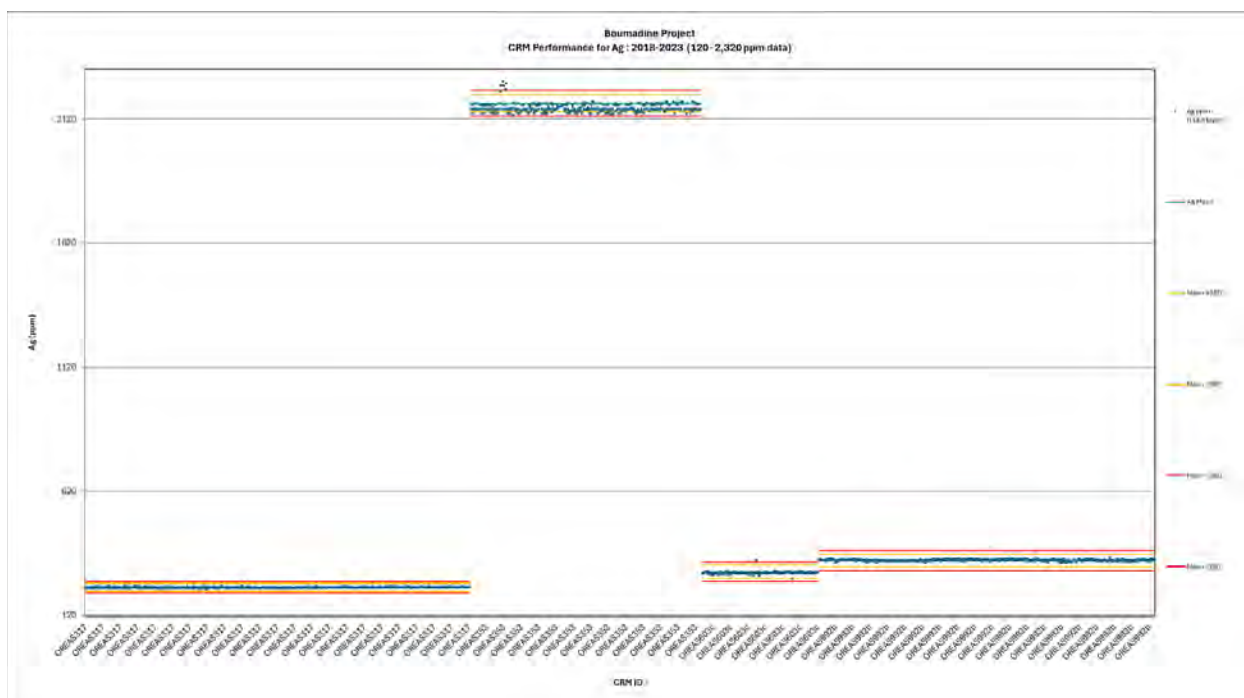
Source: This Study

FIGURE 11.3 PERFORMANCE OF OREAS CRMS FOR AG (0 TO 120 PPM DATA)



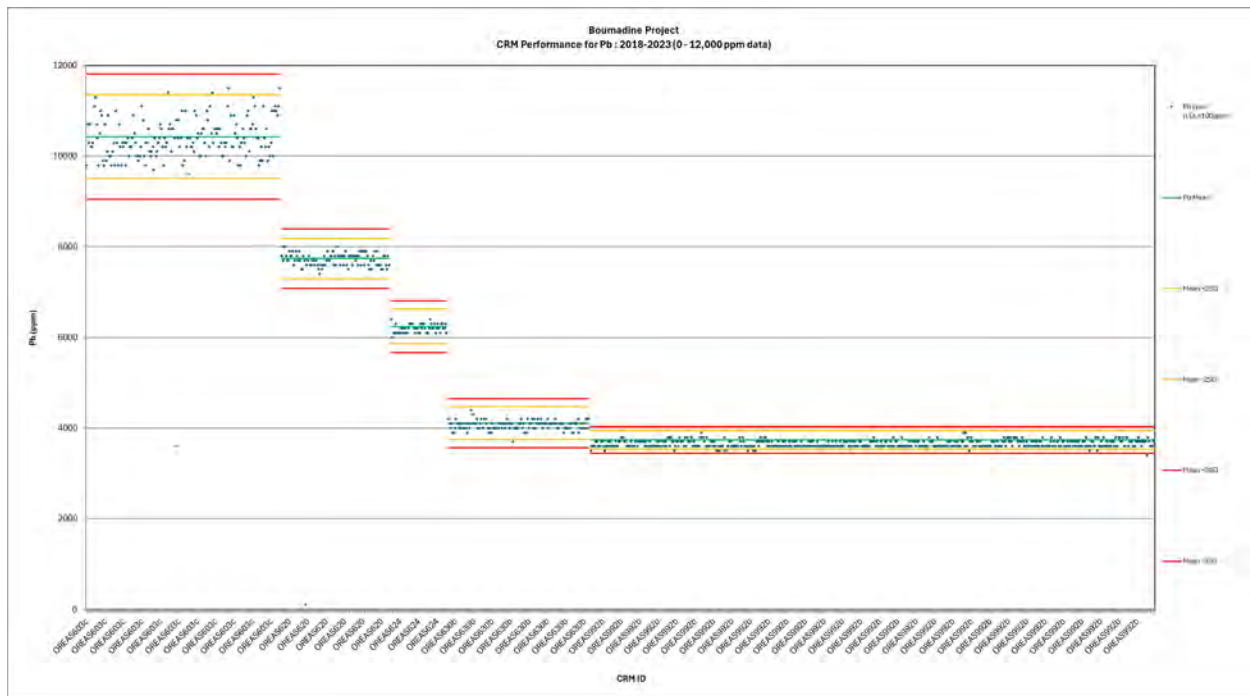
Source: This Study

FIGURE 11.4 PERFORMANCE OF OREAS CRMS FOR AG (120 TO 2,320 PPM DATA)



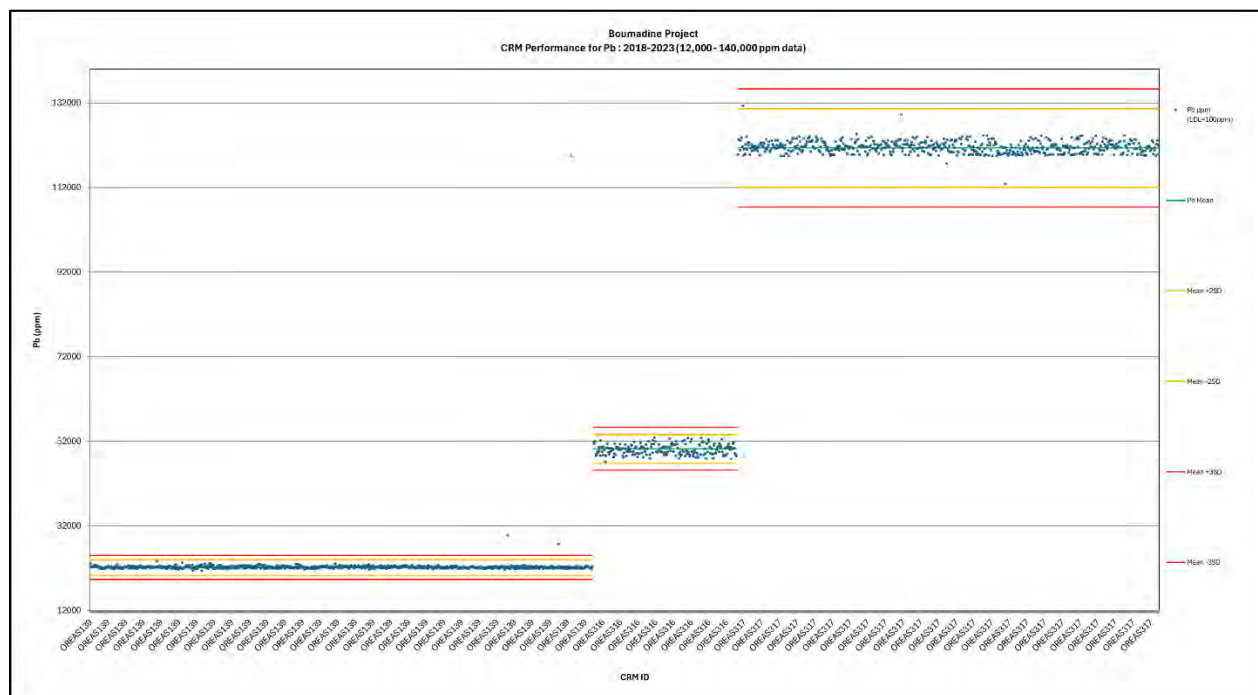
Source: This Study

FIGURE 11.5 PERFORMANCE OF OREAS CRMS FOR Pb (0 TO 12,000 PPM DATA)



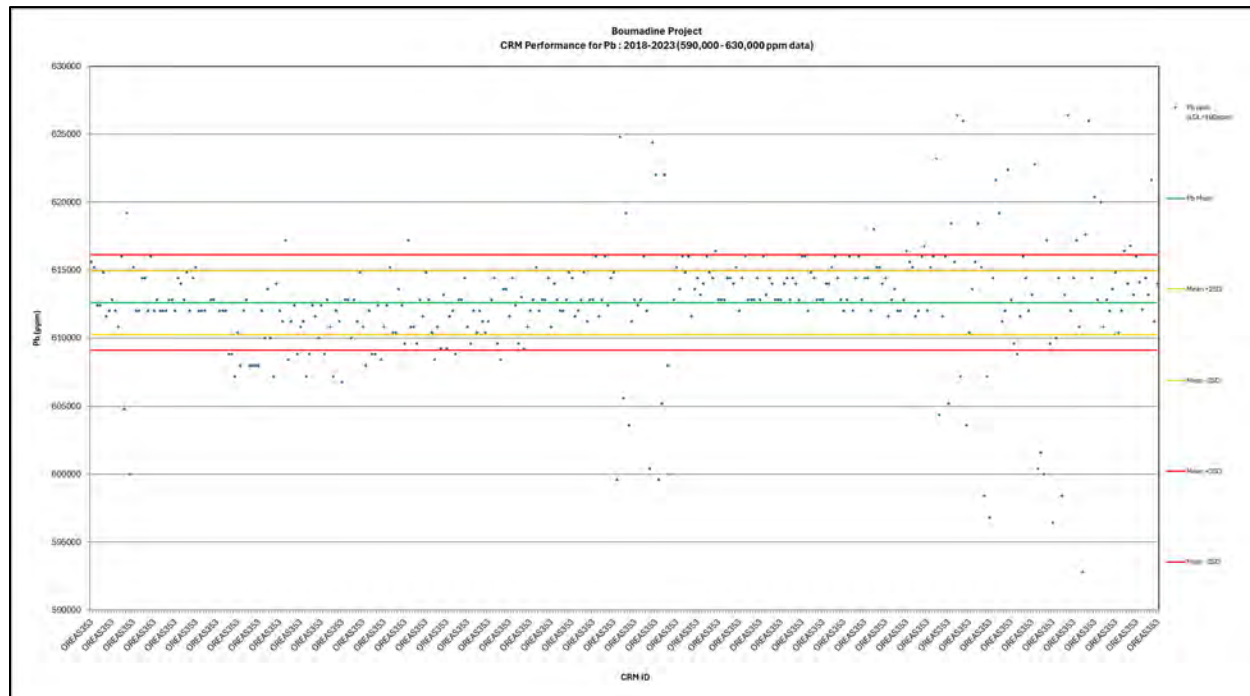
Source: This Study

FIGURE 11.6 PERFORMANCE OF OREAS CRMS FOR Pb (12,000 TO 140,000 PPM DATA)



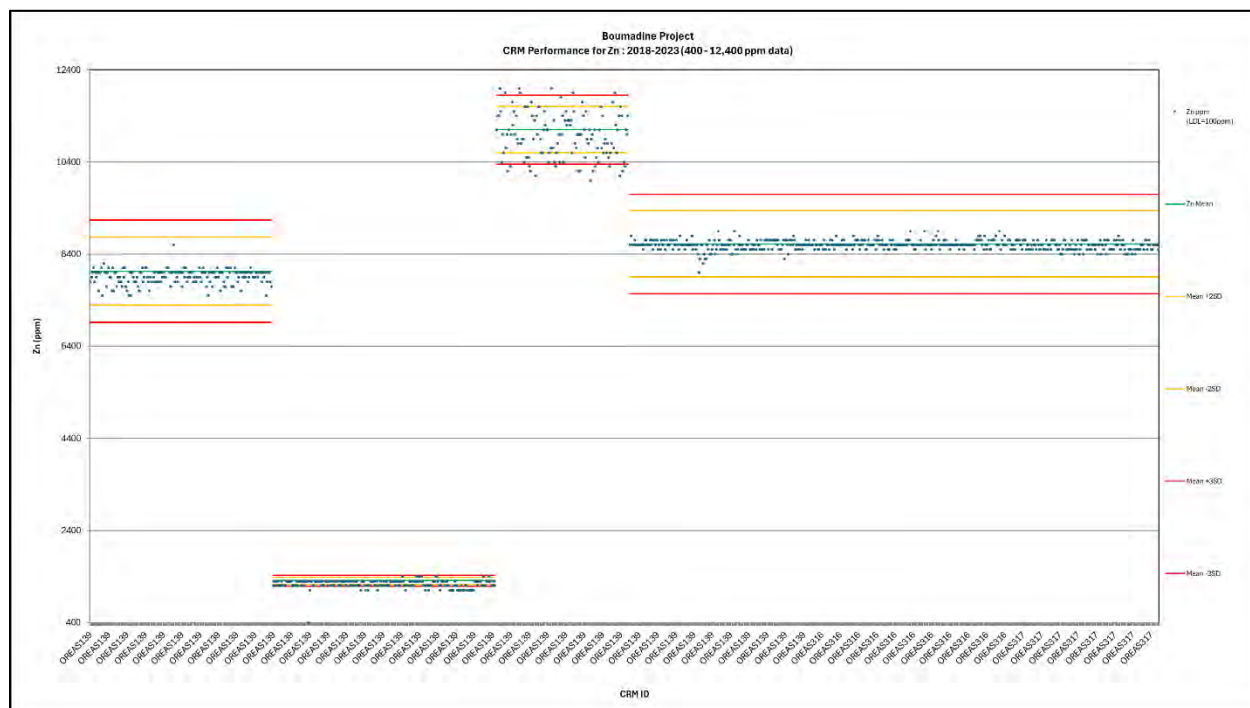
Source: This Study

FIGURE 11.7 PERFORMANCE OF OREAS CRMs FOR Pb (590,000 TO 630,000 PPM DATA)



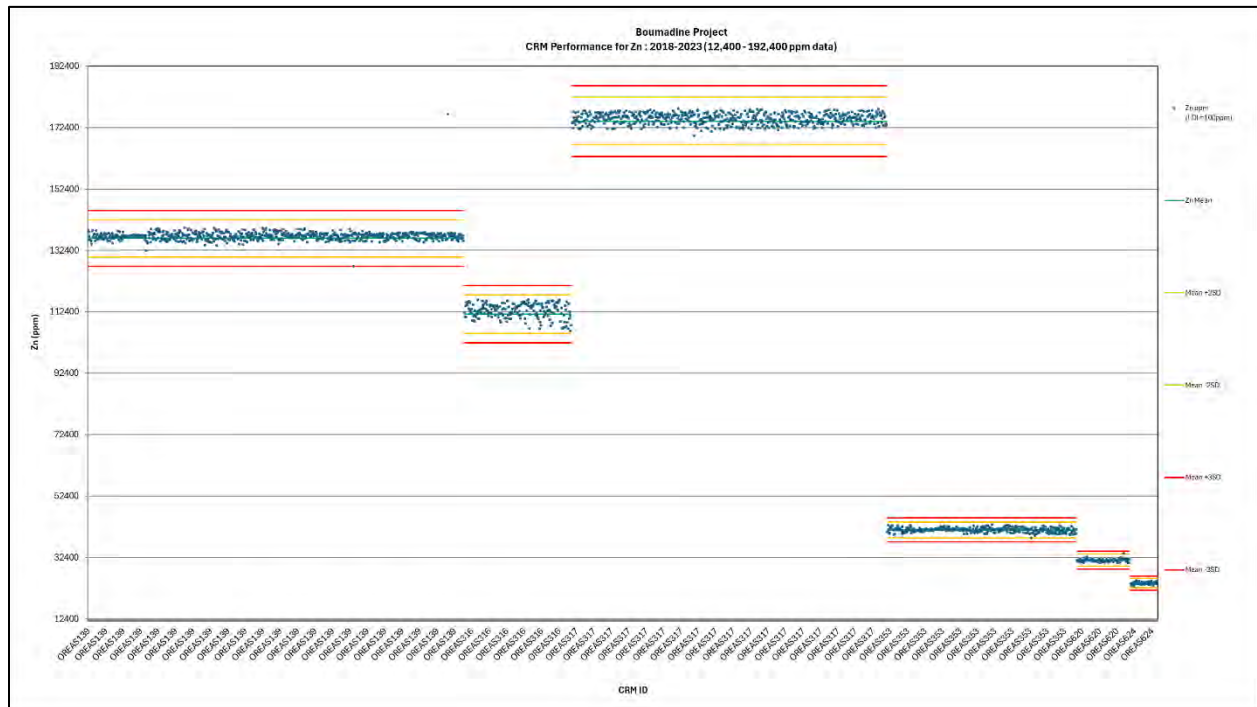
Source: This Study

FIGURE 11.8 PERFORMANCE OF OREAS CRMs FOR Zn (400 TO 12,400 PPM DATA)



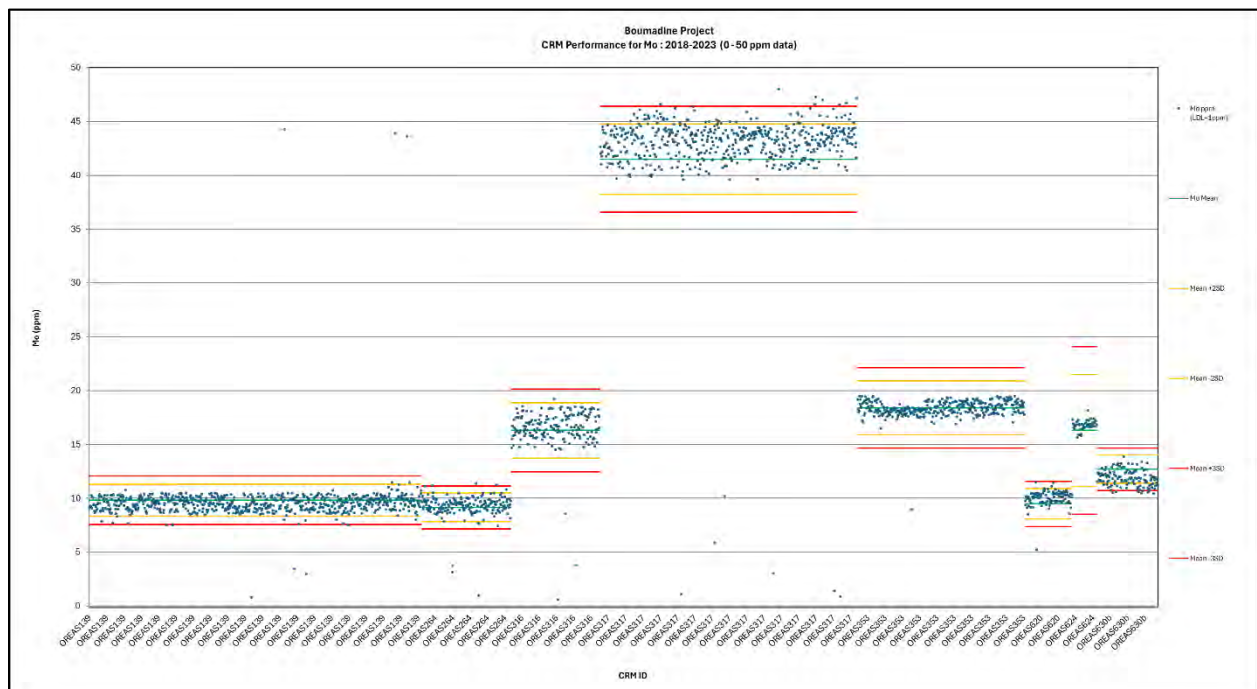
Source: This Study

FIGURE 11.9 PERFORMANCE OF OREAS CRMS FOR ZN (12,400 TO 192,400 PPM DATA)



Source: This Study

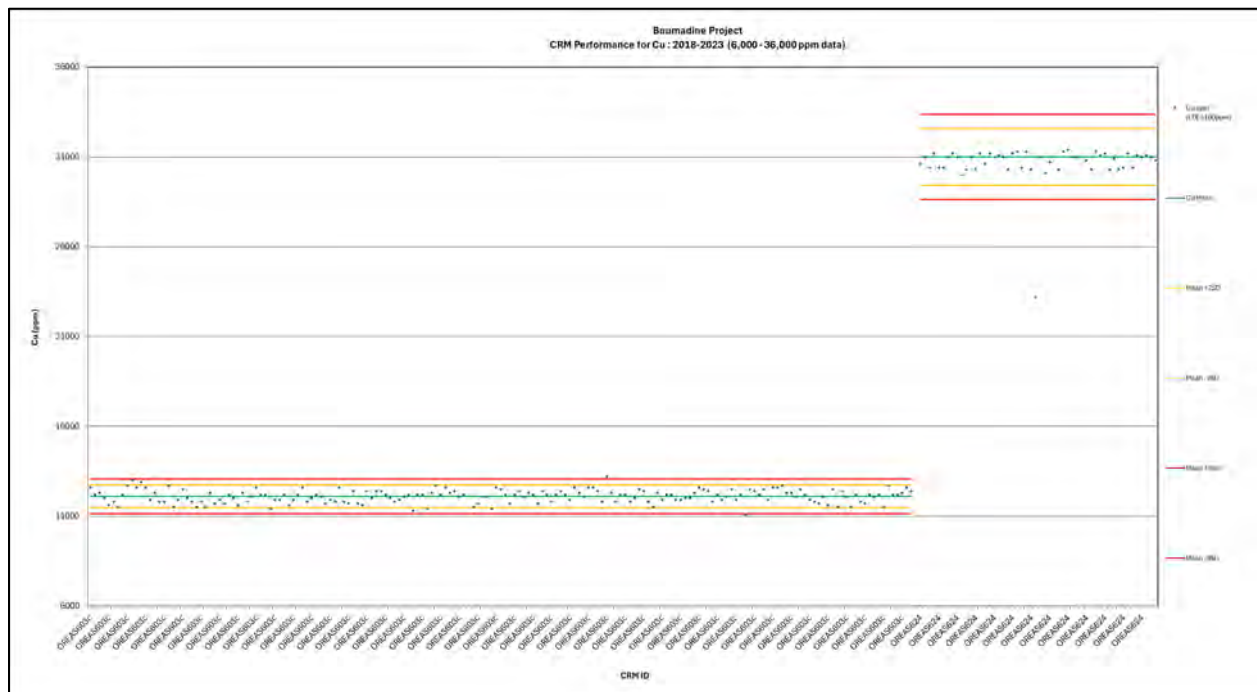
FIGURE 11.10 PERFORMANCE OF OREAS CRMS FOR MO (0 TO 50 PPM DATA)



Source: This Study

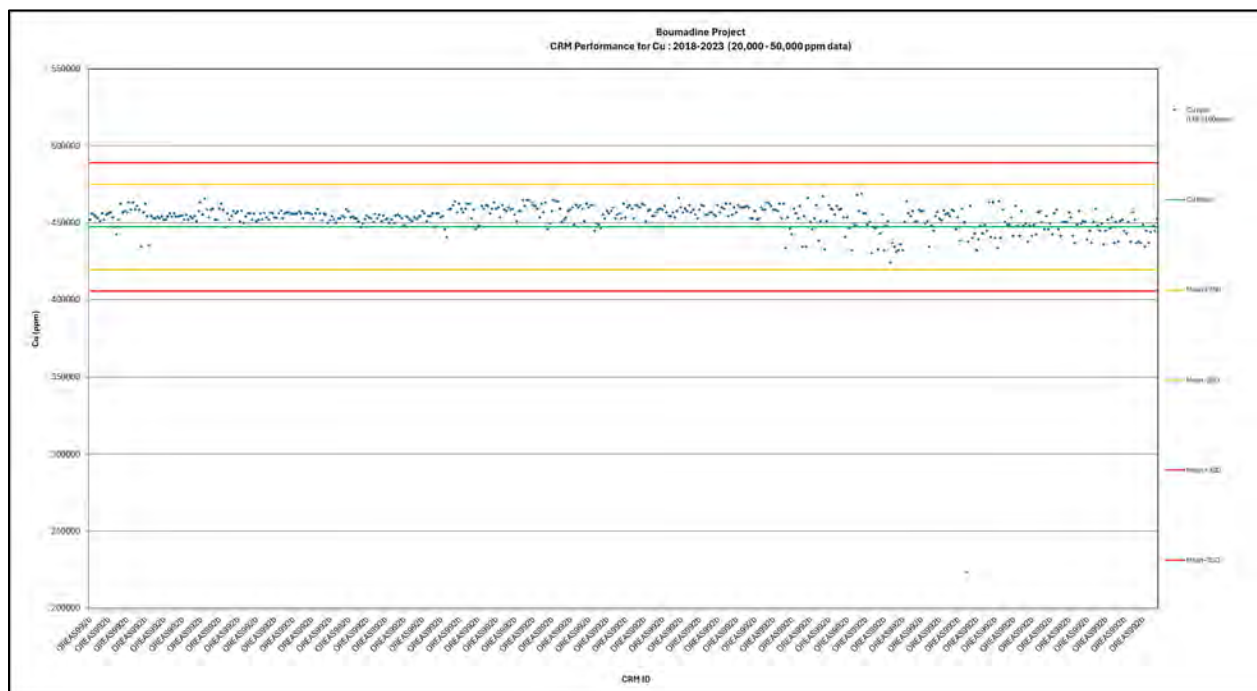
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FIGURE 11.13 PERFORMANCE OF OREAS CRMS FOR CU (6,000 TO 36,000 PPM DATA)



Source: This Study

FIGURE 11.14 PERFORMANCE OF OREAS CRMS FOR CU (20,000 TO 50,000 PPM DATA)



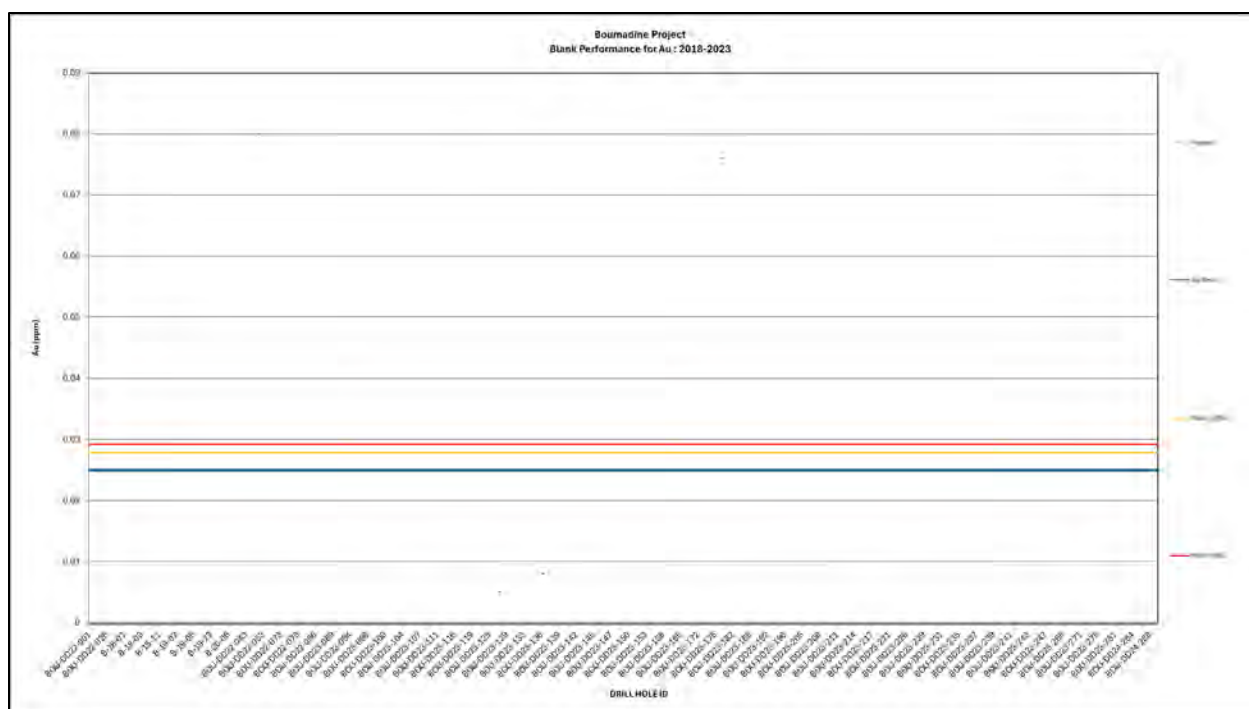
Source: This Study

11.2.1.2 Performance of Blanks

The blank material used by Aya is sourced and prepared from local cobbles of arenite and a variety of barren sandstone. The blank material is safely stored away from any source of contamination in plastic drums on-site. Blanks are inserted into the analysis stream approximately every 25 samples. All blank data for gold, silver, lead, zinc, molybdenum and copper are graphed (Figures 11.15 to 11.20). If the assayed value in the certificate was indicated as being less than detection limit, the value was assigned half the value of the detection limit for data treatment purposes (e.g., $<1 = 0.5$). An upper tolerance limit of +3 standard deviations from the calculated mean was set. There were 4,462 data points to examine.

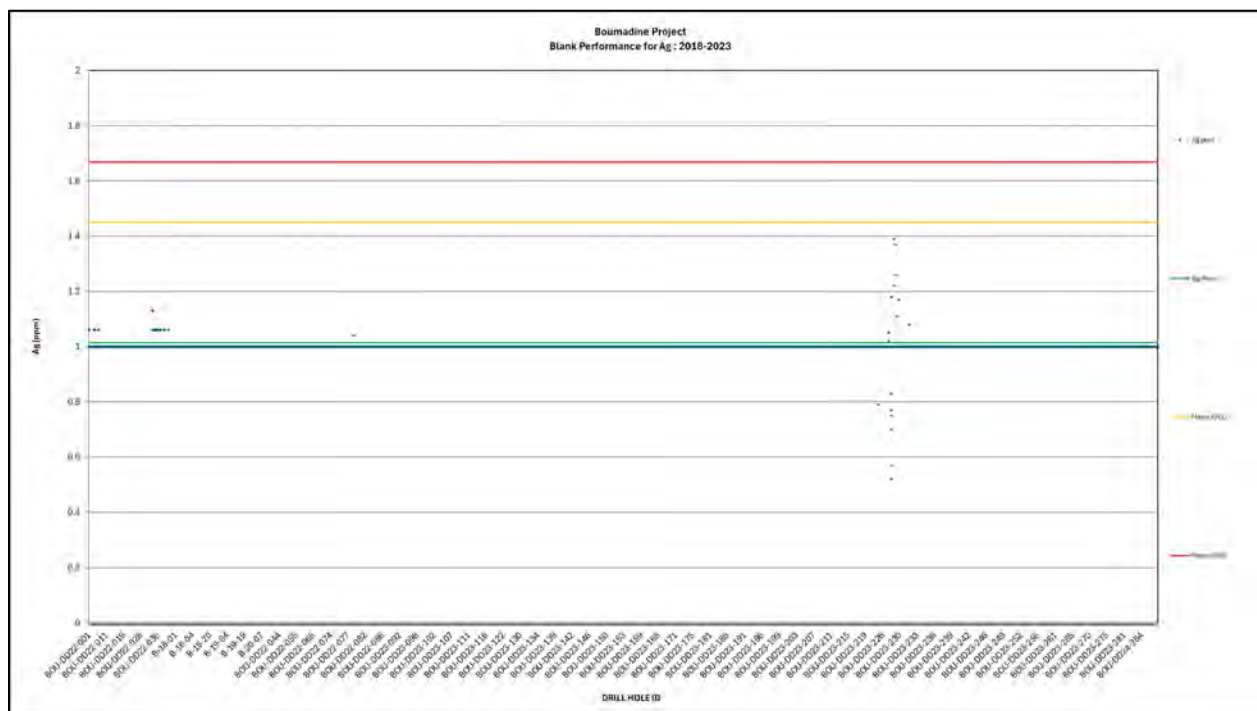
The vast majority of data plotted below the set tolerance limit, with very few data points plotting above the set tolerance limit. The Author of this Report section does not consider contamination to be an issue with the 2018 to 2024 Boumadine Project data.

FIGURE 11.15 PERFORMANCE OF BLANKS FOR AU



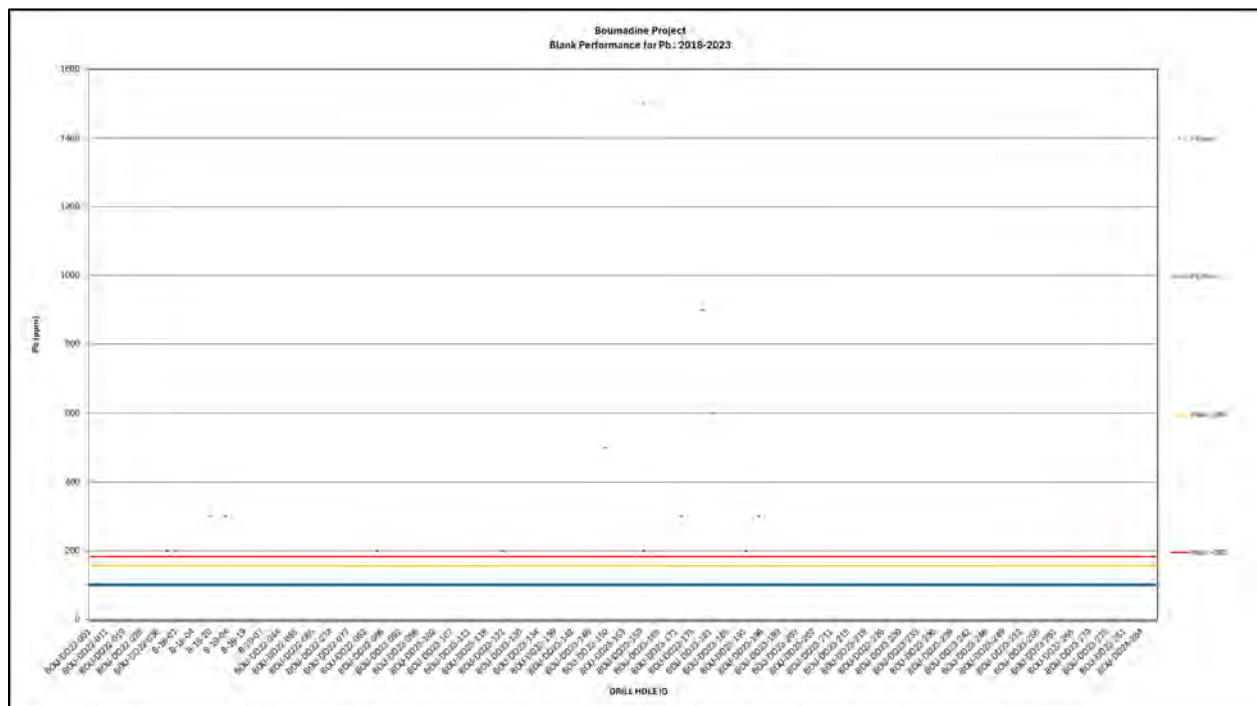
Source: This Study

FIGURE 11.16 PERFORMANCE OF BLANKS FOR AG



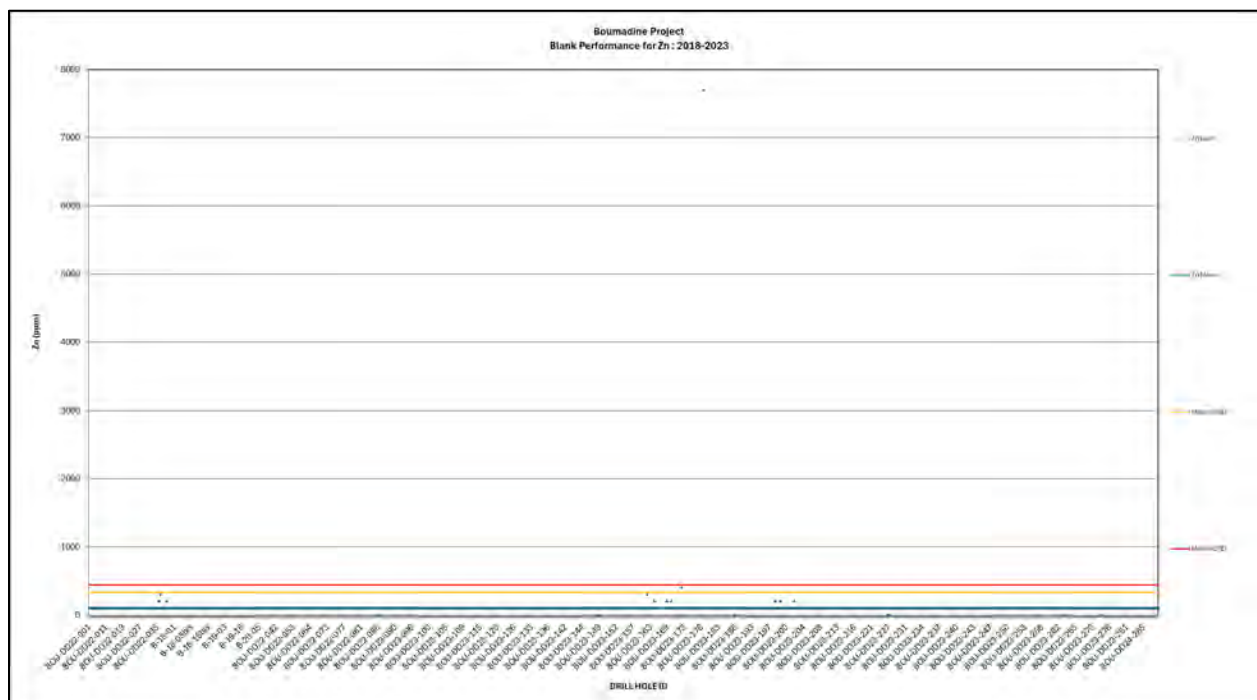
Source: This Study

FIGURE 11.17 PERFORMANCE OF BLANKS FOR PB



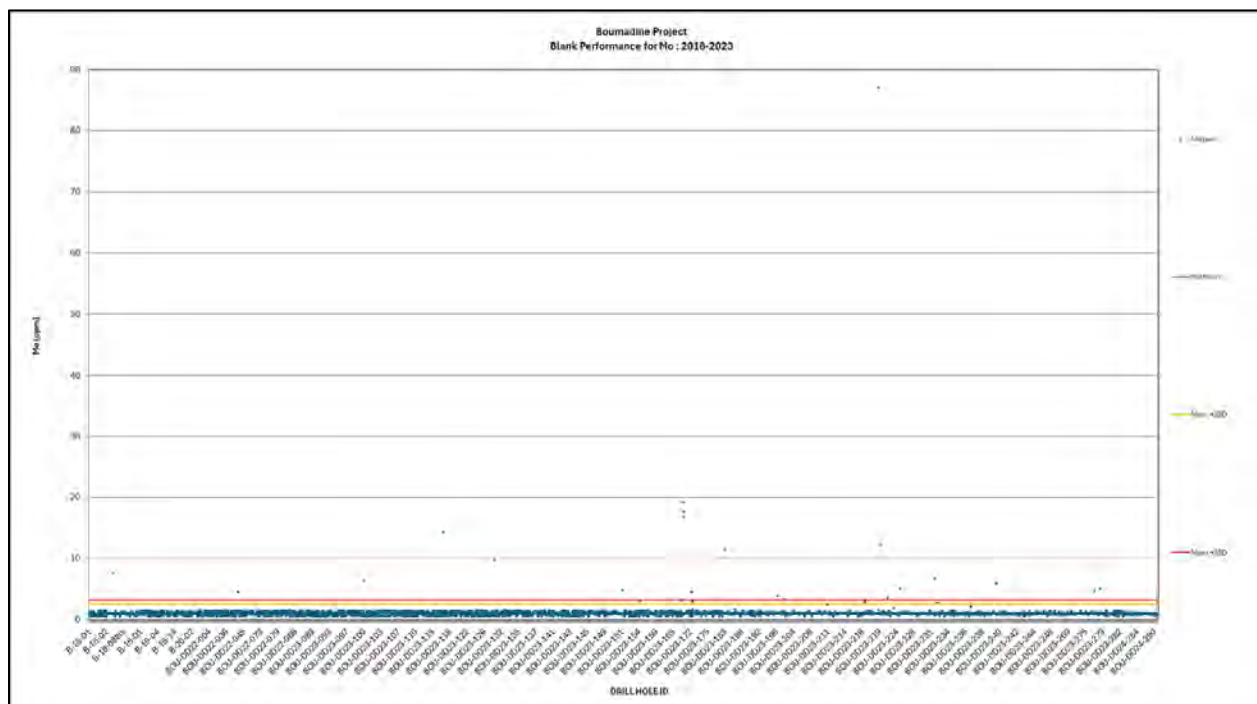
Source: This Study

FIGURE 11.18 PERFORMANCE OF BLANKS FOR ZN



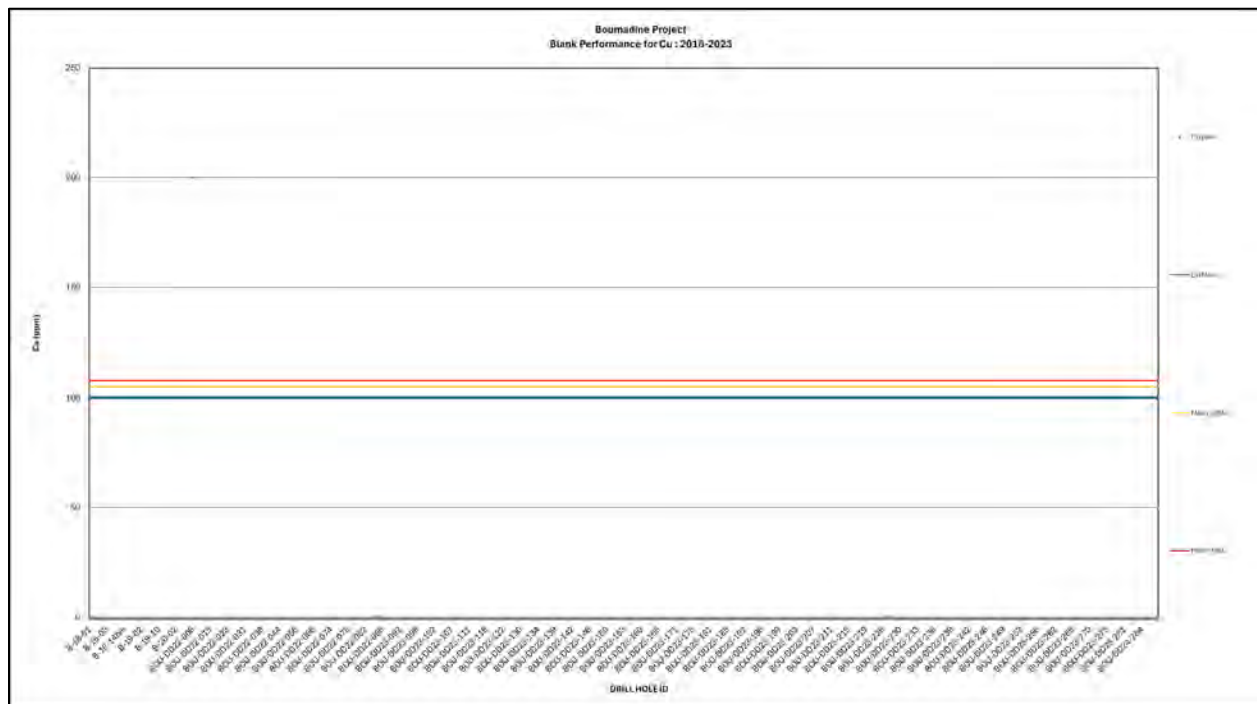
Source: This Study

FIGURE 11.19 PERFORMANCE OF BLANKS FOR MO



Source: This Study

FIGURE 11.20 PERFORMANCE OF BLANKS FOR CU



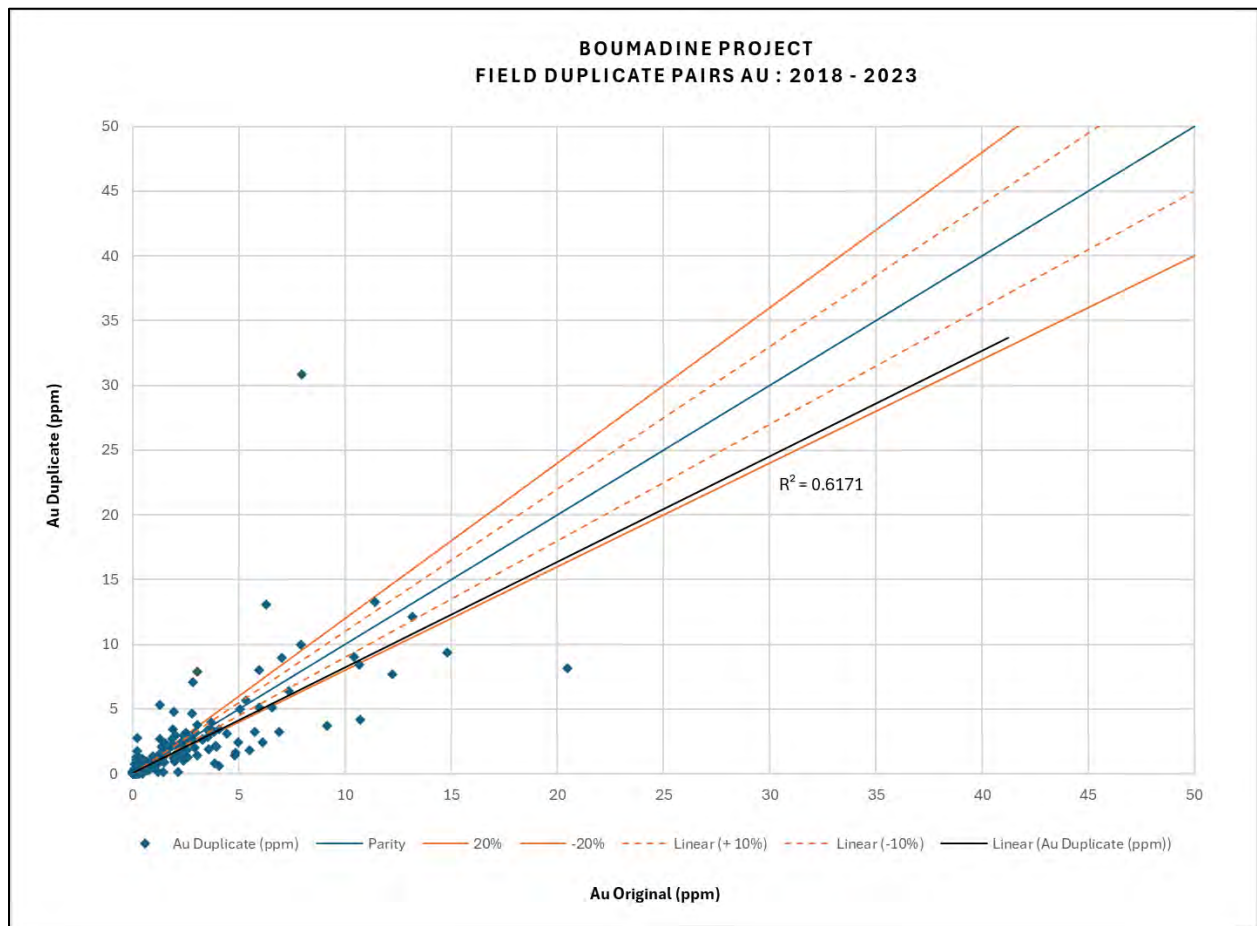
Source: This Study

11.2.1.3 Performance of Duplicates

Field duplicate samples were inserted into the drill core sample stream, at a rate of ~1 in every 50 samples from 2022 to 2024. Prior to this, four field duplicates only were inserted into three drill holes during 2018 and none were inserted during the 2019 drill program. At the end of each month, a selection of 5% of the coarse reject samples is also submitted to Afrilab for duplicate analysis and the primary lab also assays pulp samples for duplicate analysis.

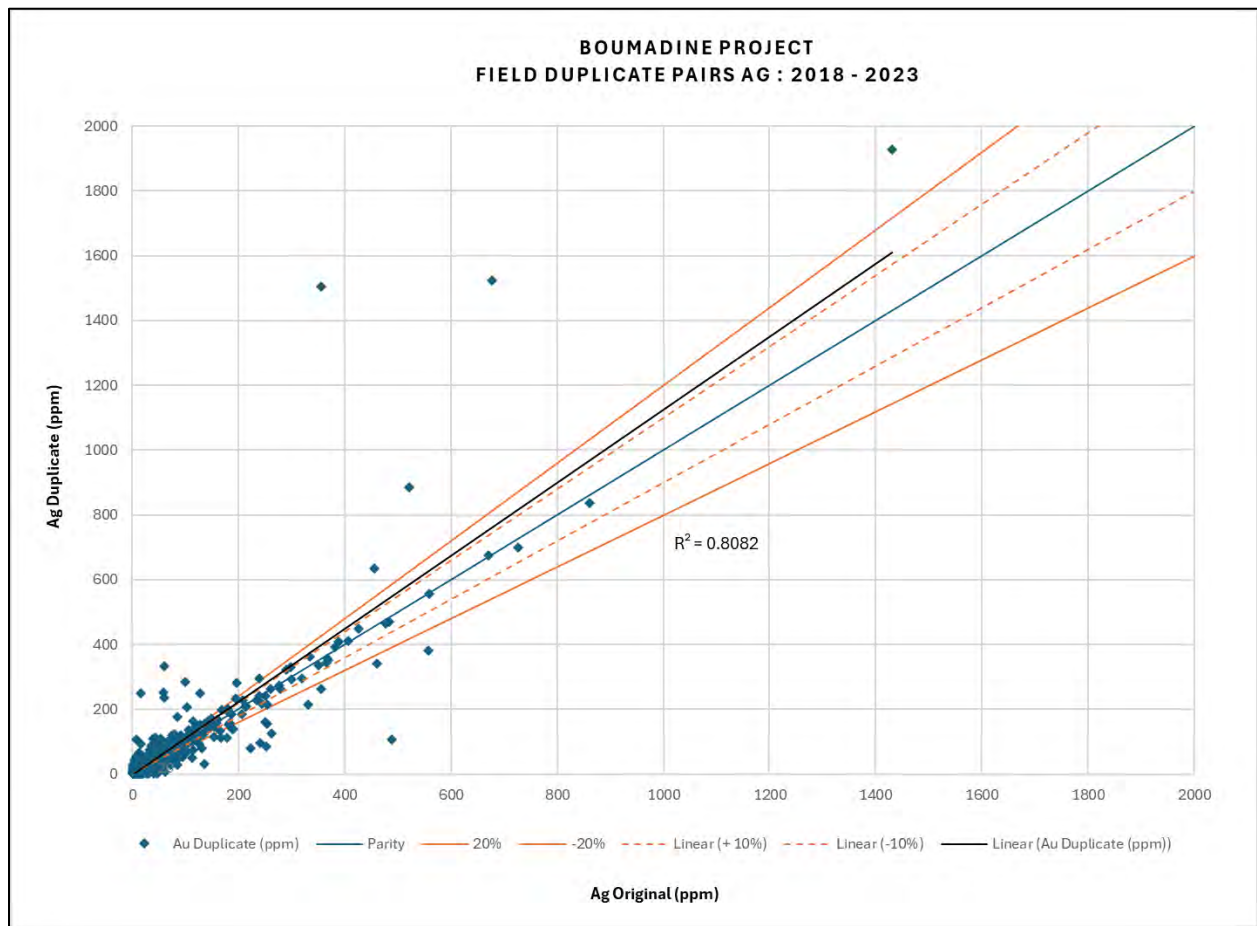
Field and pulp duplicate data for gold, silver, copper, lead, zinc and molybdenum were examined by the Author for the 2022 to 2023 diamond drilling at the Boumadine Project. Coarse reject duplicates were not available to assess. The data were graphed (Figures 11.21 and 11.33) and found to have acceptable precision, with precision improving from field to pulp level, and a minimum R-squared value of 0.99 at the pulp level.

FIGURE 11.21 PERFORMANCE OF FIELD DUPLICATES FOR AU



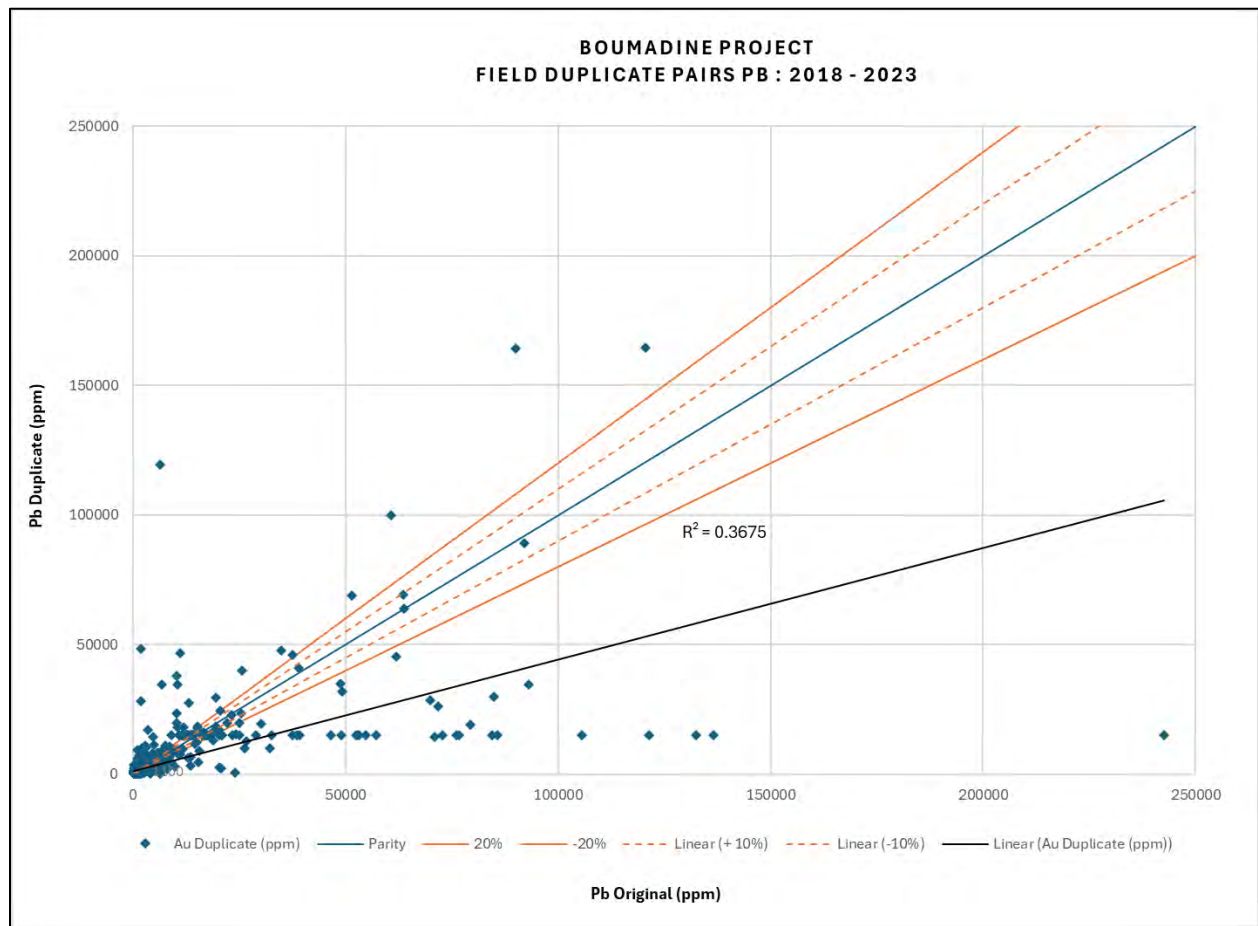
Source: This Study

FIGURE 11.22 PERFORMANCE OF FIELD DUPLICATES FOR AG



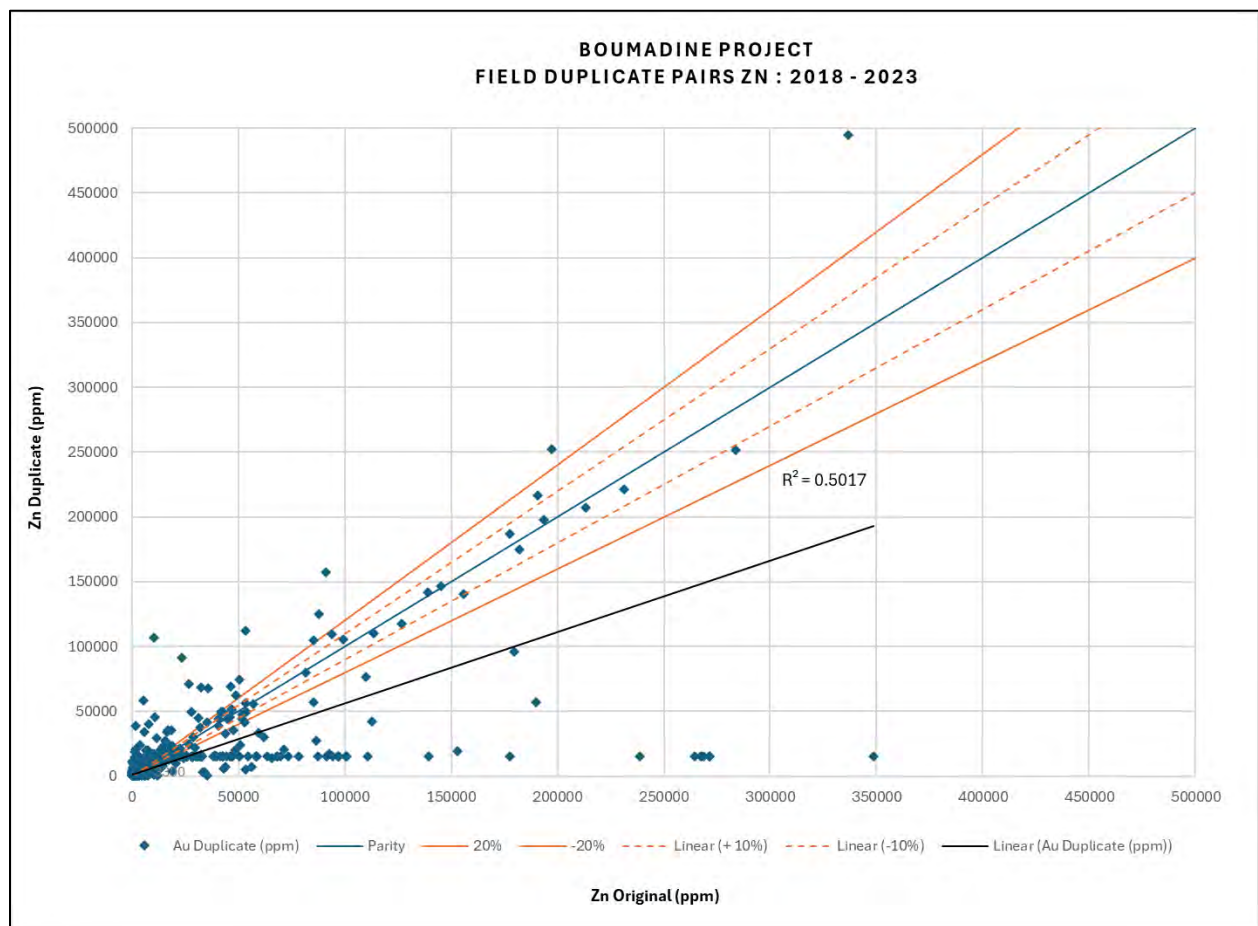
Source: This Study

FIGURE 11.23 PERFORMANCE OF FIELD DUPLICATES FOR Pb



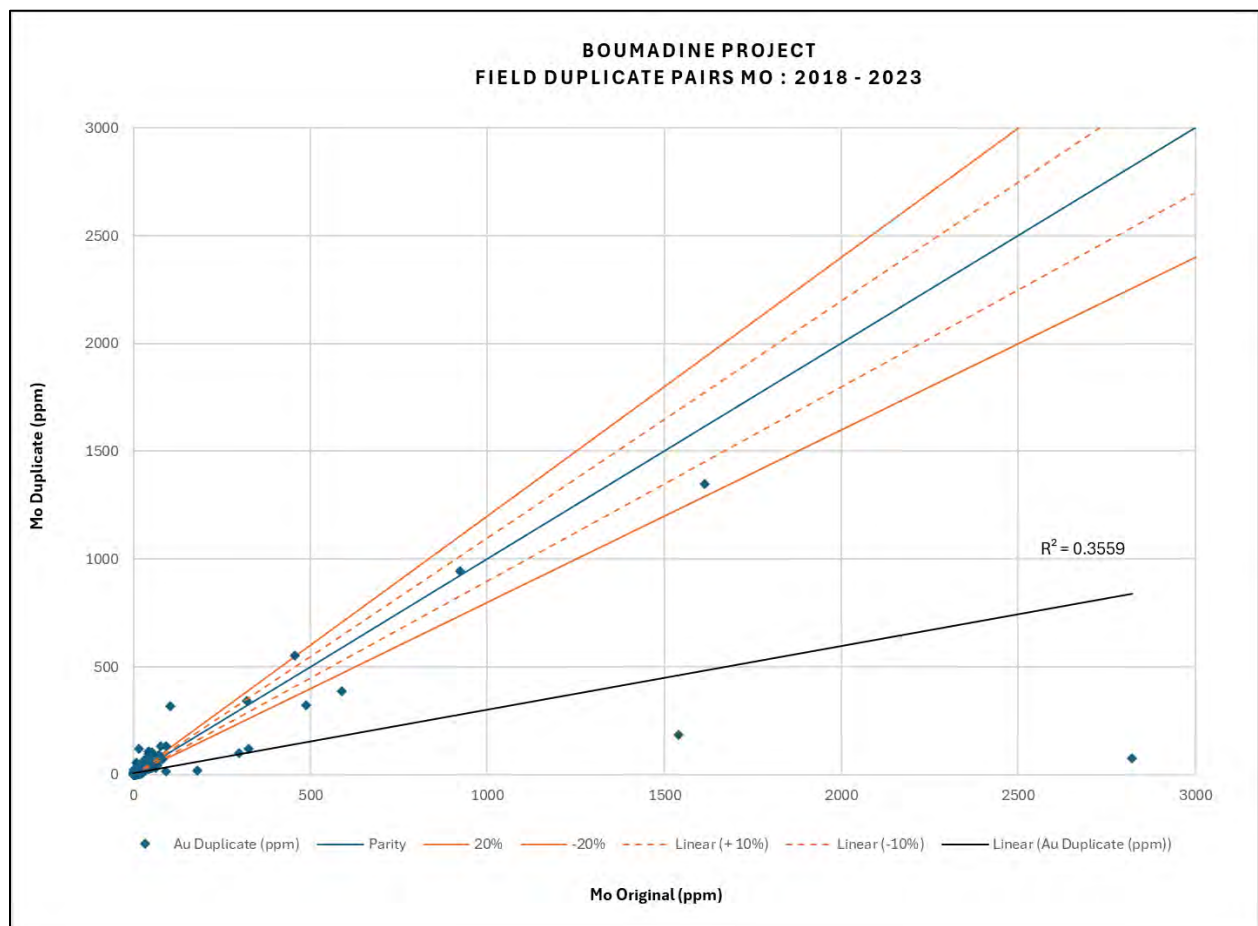
Source: This Study

FIGURE 11.24 PERFORMANCE OF FIELD DUPLICATES FOR ZN



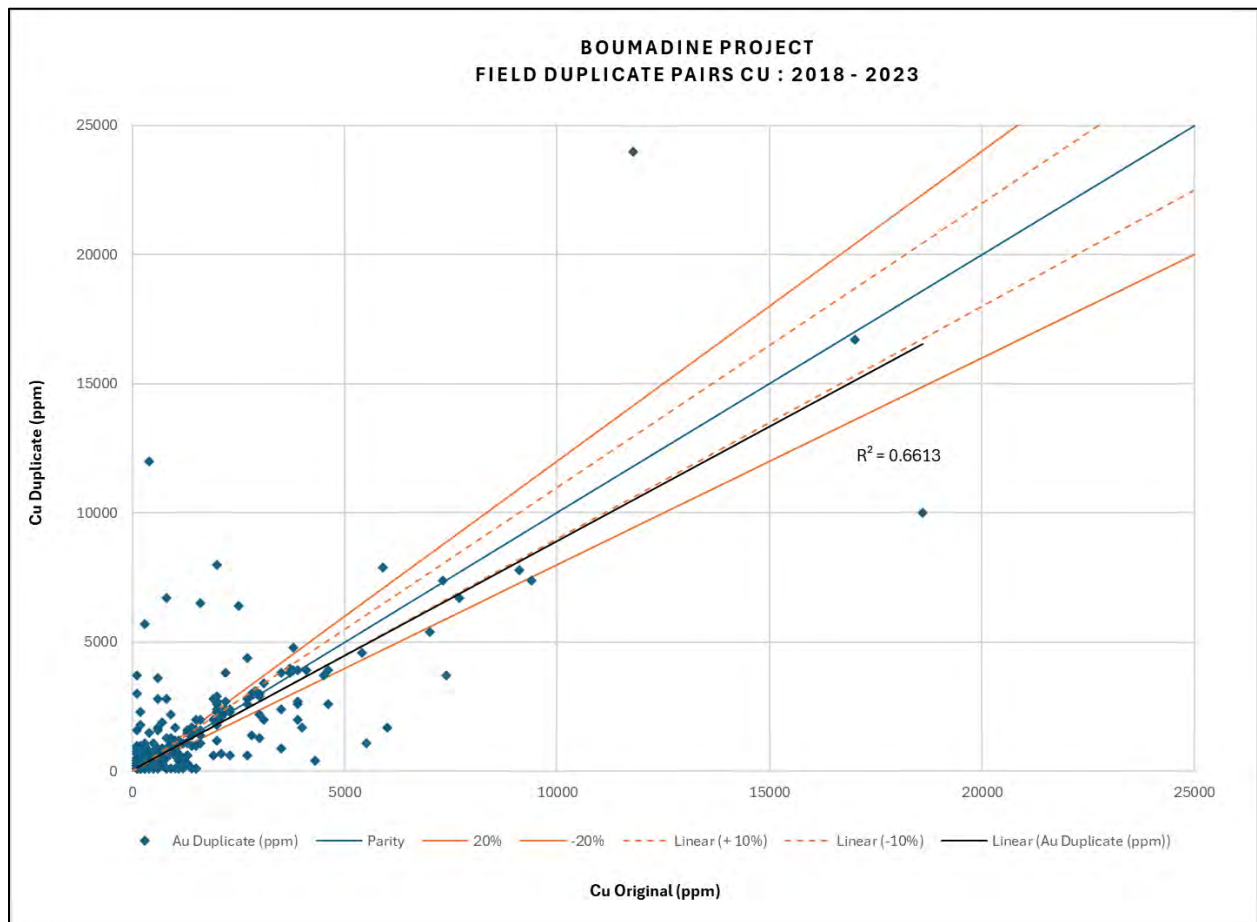
Source: This Study

FIGURE 11.25 PERFORMANCE OF FIELD DUPLICATES FOR Mo



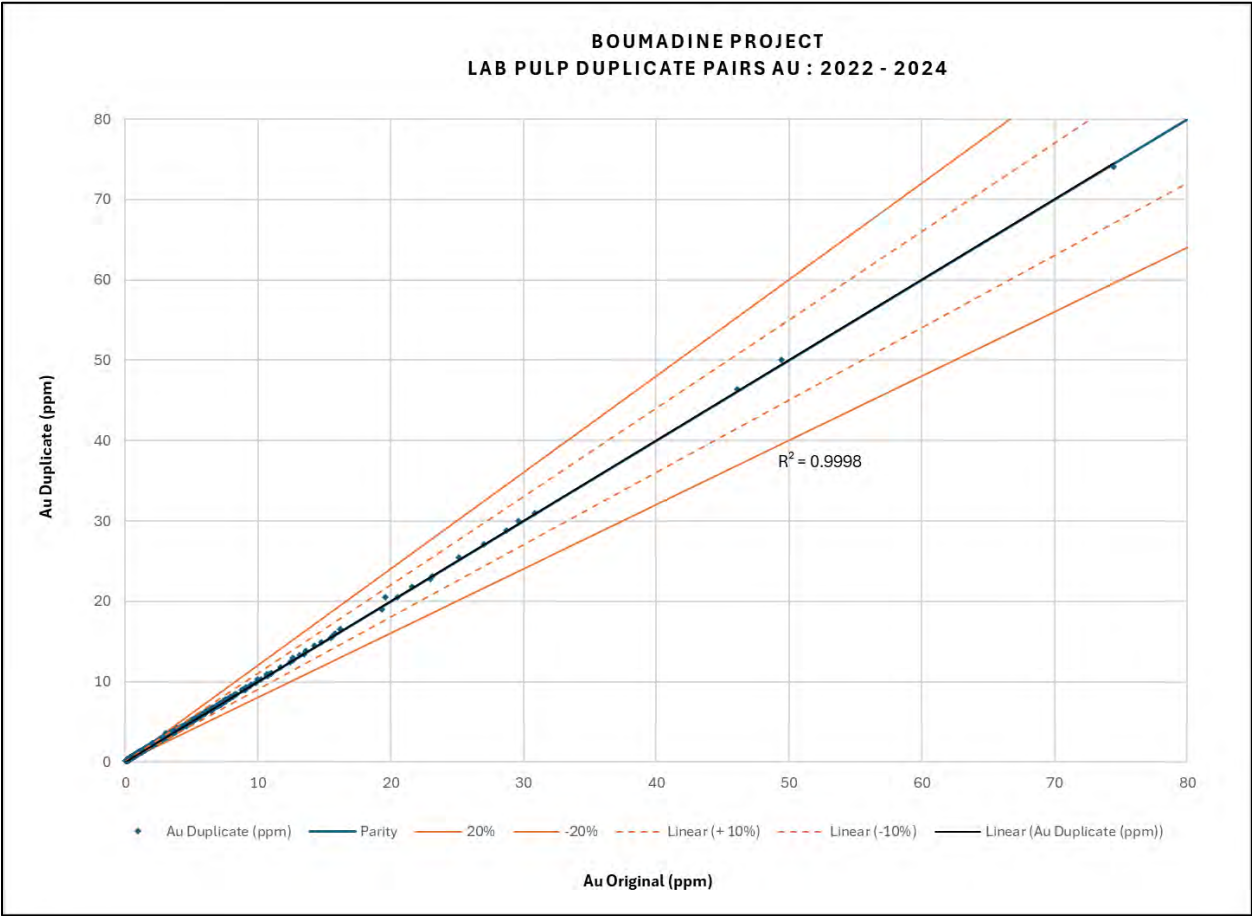
Source: This Study

FIGURE 11.26 PERFORMANCE OF FIELD DUPLICATES FOR CU



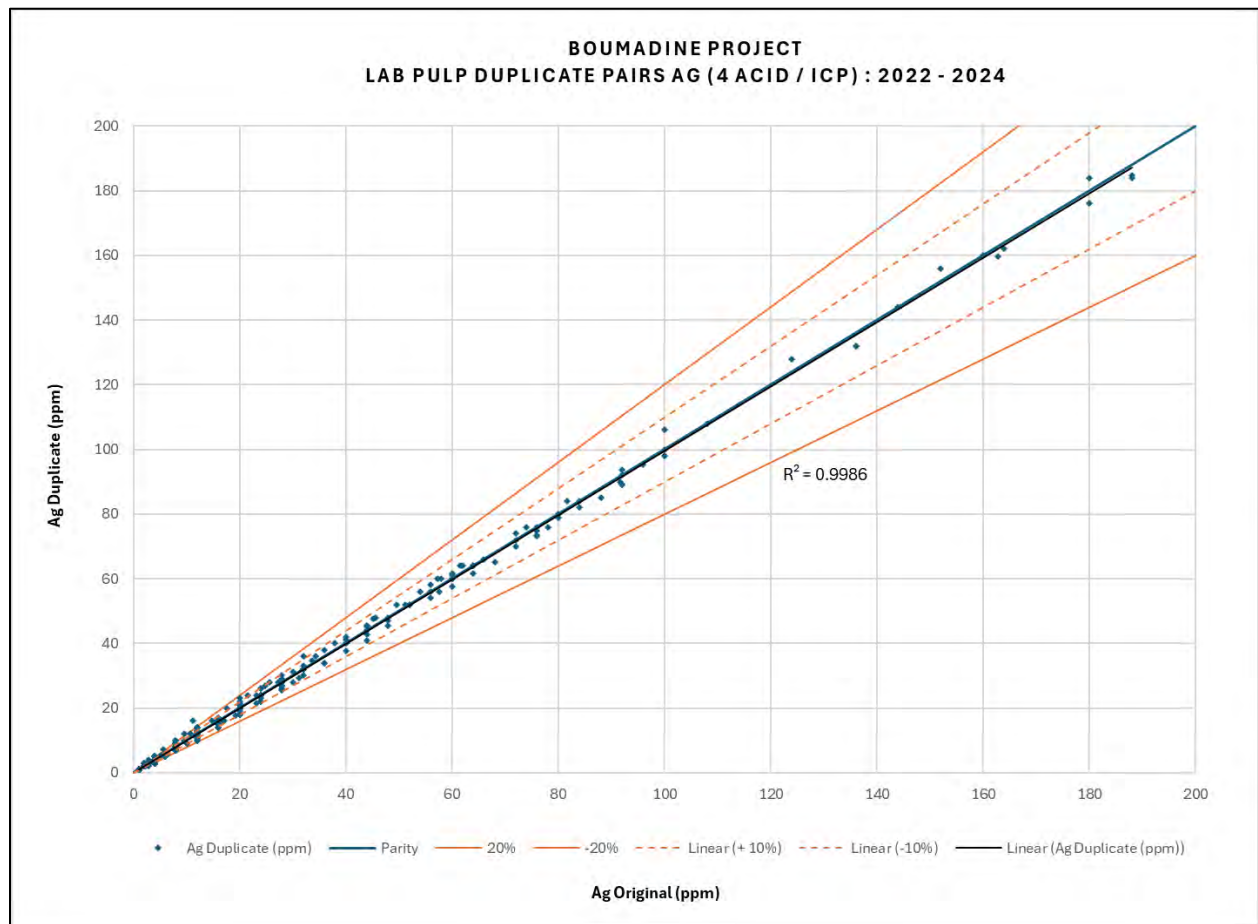
Source: This Study

FIGURE 11.27 PERFORMANCE OF LAB PULP DUPLICATES FOR AU



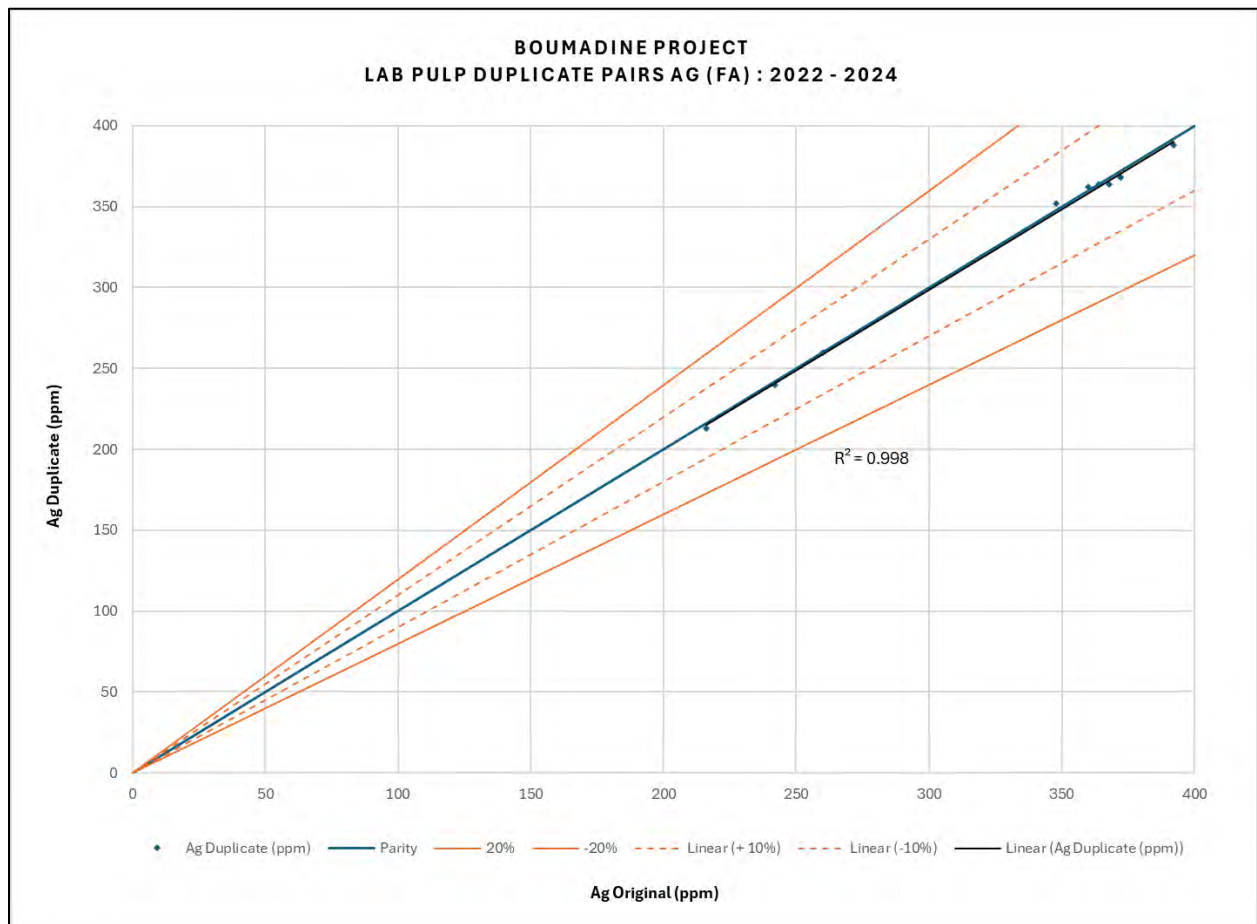
Source: This Study

FIGURE 11.28 PERFORMANCE OF LAB PULP DUPLICATES FOR AG (4 ACID / ICP)



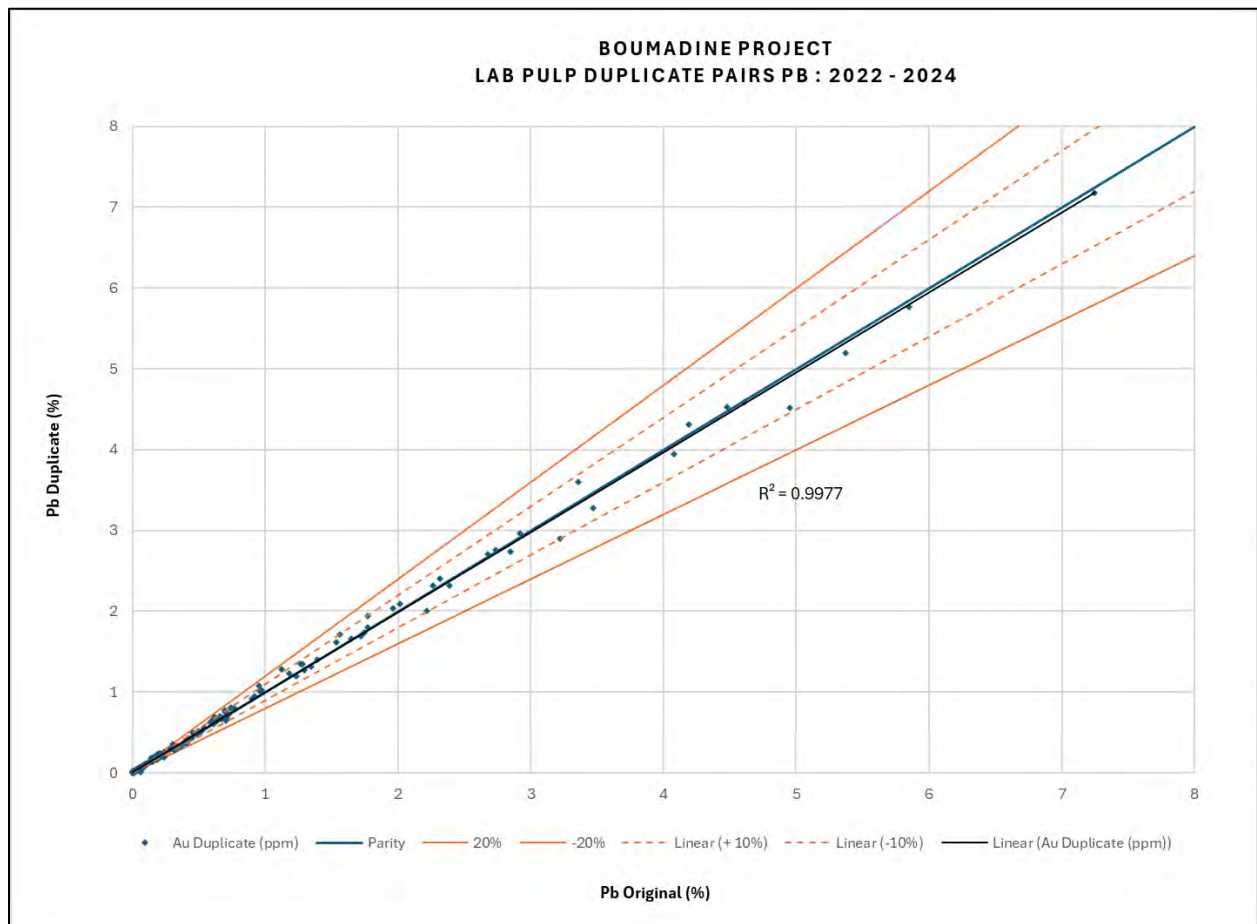
Source: This Study

FIGURE 11.29 PERFORMANCE OF LAB PULP DUPLICATES FOR AG (FIRE ASSAY)



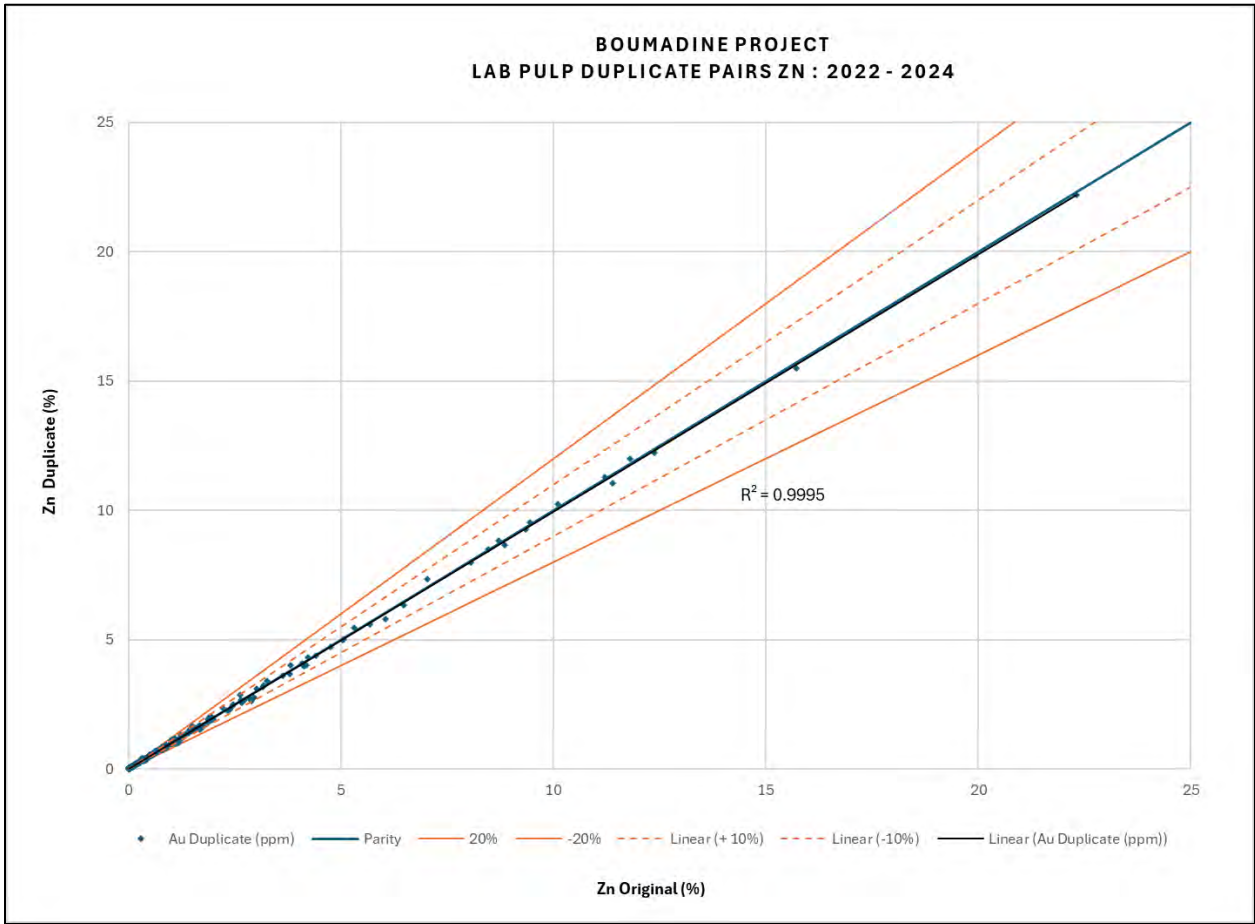
Source: This Study

FIGURE 11.30 PERFORMANCE OF LAB PULP DUPLICATES FOR Pb



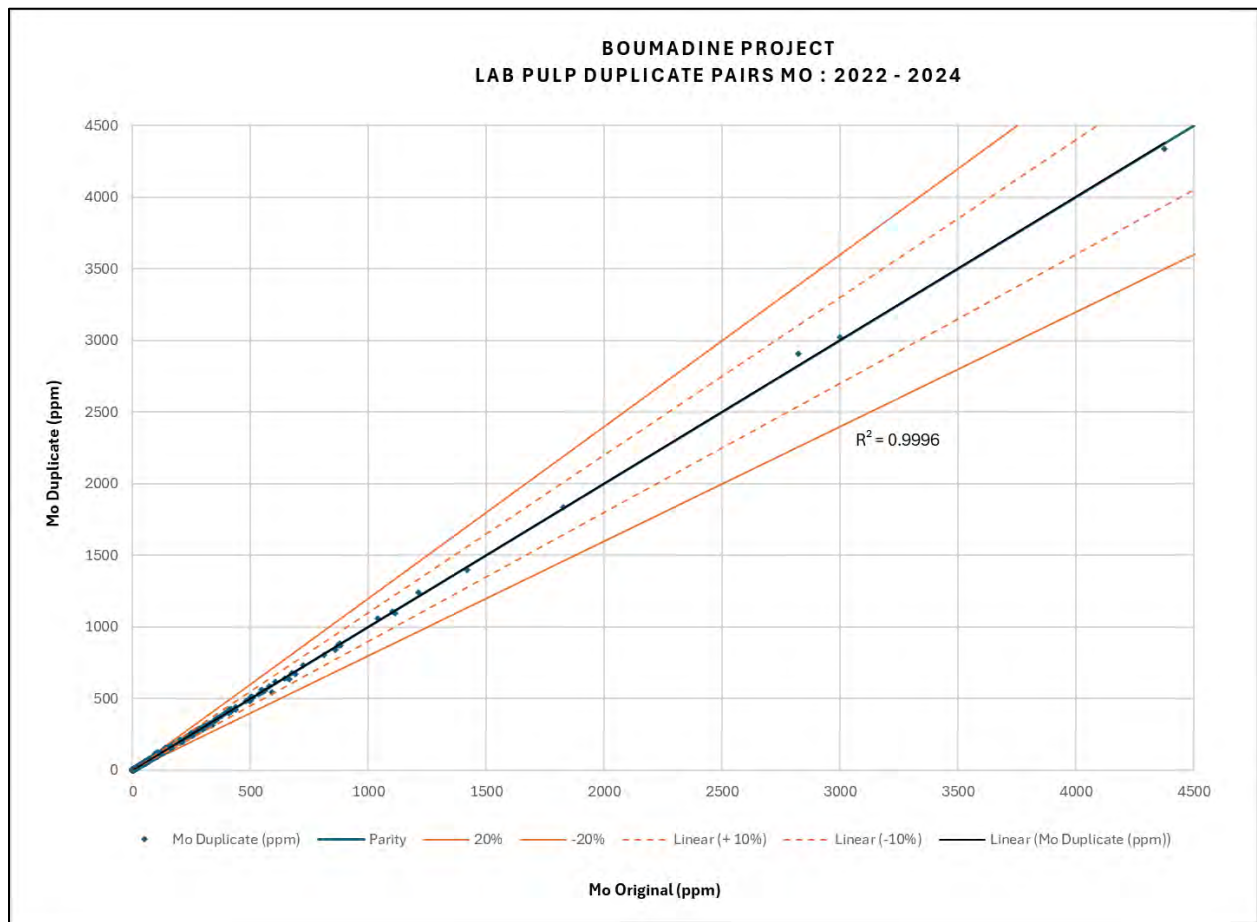
Source: This Study

FIGURE 11.31 PERFORMANCE OF LAB PULP DUPLICATES FOR ZN



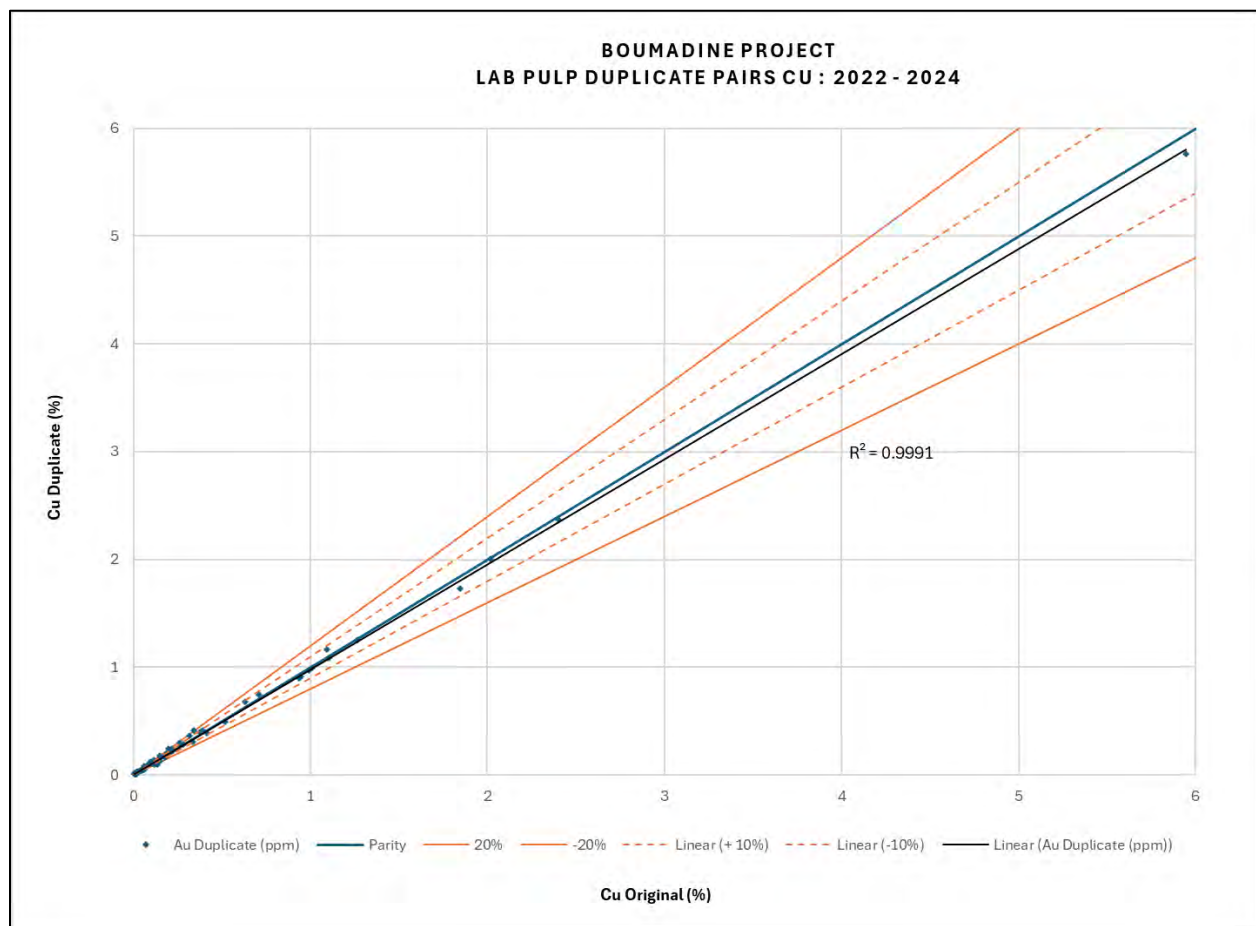
Source: This Study

FIGURE 11.32 PERFORMANCE OF LAB PULP DUPLICATES FOR MO



Source: This Study

FIGURE 11.33 PERFORMANCE OF LAB PULP DUPLICATES FOR CU



Source: This Study

11.2.1.4 Umpire Sampling

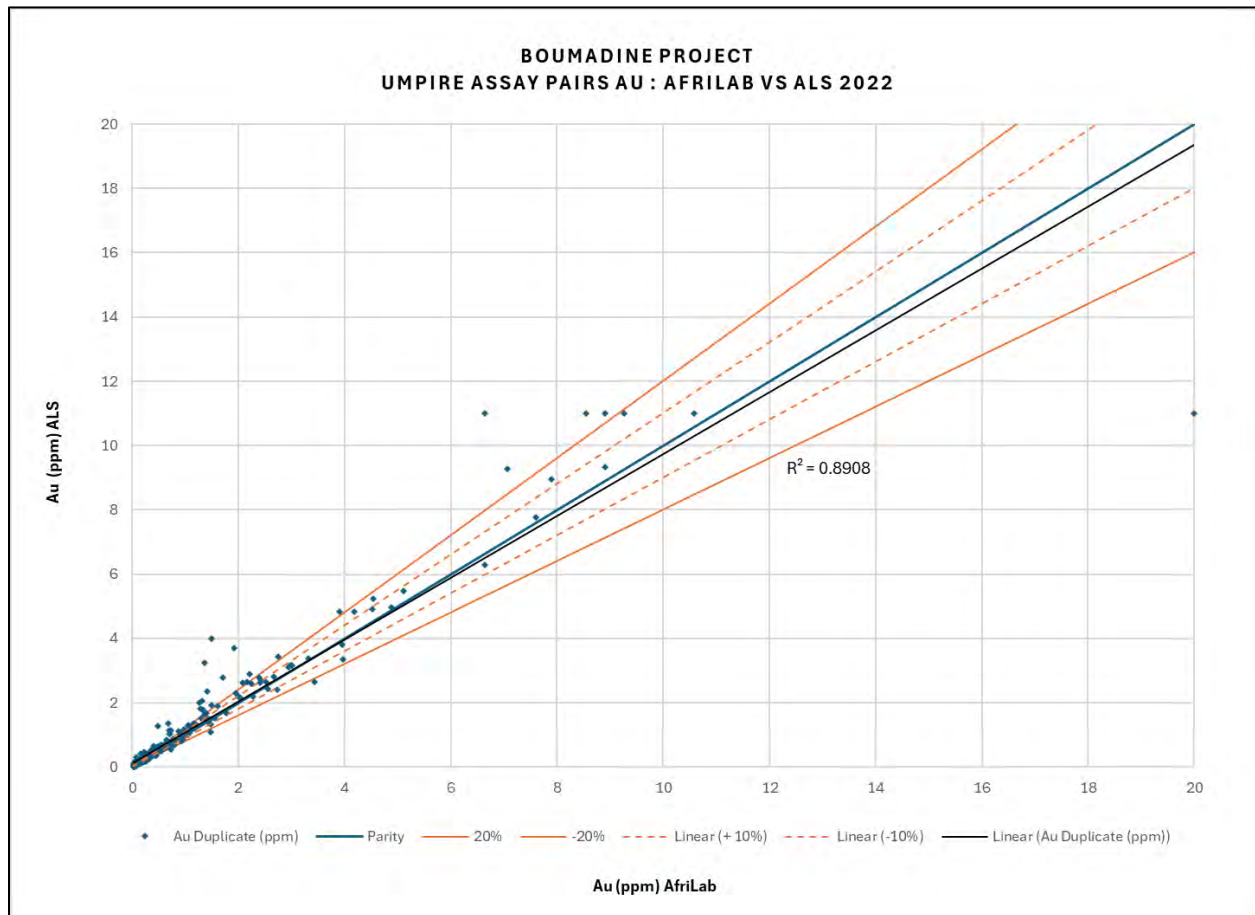
Aya carried out umpire-sampling to confirm the integrity of the analytical results undertaken by AfriLab, the primary laboratory, for geochemical testing at the Boumadine Project. Select pulverized pulp samples were submitted for check assaying at a secondary laboratory (umpire lab), to check original analyses undertaken at AfriLab. Check analyses were carried out on one in every 50 samples, representing around 2% of the samples sent for analysis, and were completed at ALS in Seville, Spain.

The Author of this Technical Report section reviewed the umpire assay results for gold, silver and molybdenum for the Q3 and Q4 drilling at Boumadine, and comparisons were made between the primary lab results and the umpire lab results with the aid of scatter plots (Figures 11.34 to 11.36). Comparison of the 422 samples from the late 2022 diamond drilling program, reveals some dispersion in the gold results below 2 ppm Au and ~8 ppm Au (Figure 11.34). A high bias is also noted in the reported umpire lab results and an R^2 value of 0.891. Increased dispersion below 80 ppm Ag, where expected closer to the lower detection limit, and good correlation above these lower grades are revealed in Figure 11.35. No significant bias is detected and an R^2 value of 0.964

is indicated. Excellent correlation is observed in the molybdenum scatter plot, with the majority of results plotting along the 1:1 line and an R^2 value of 0.998.

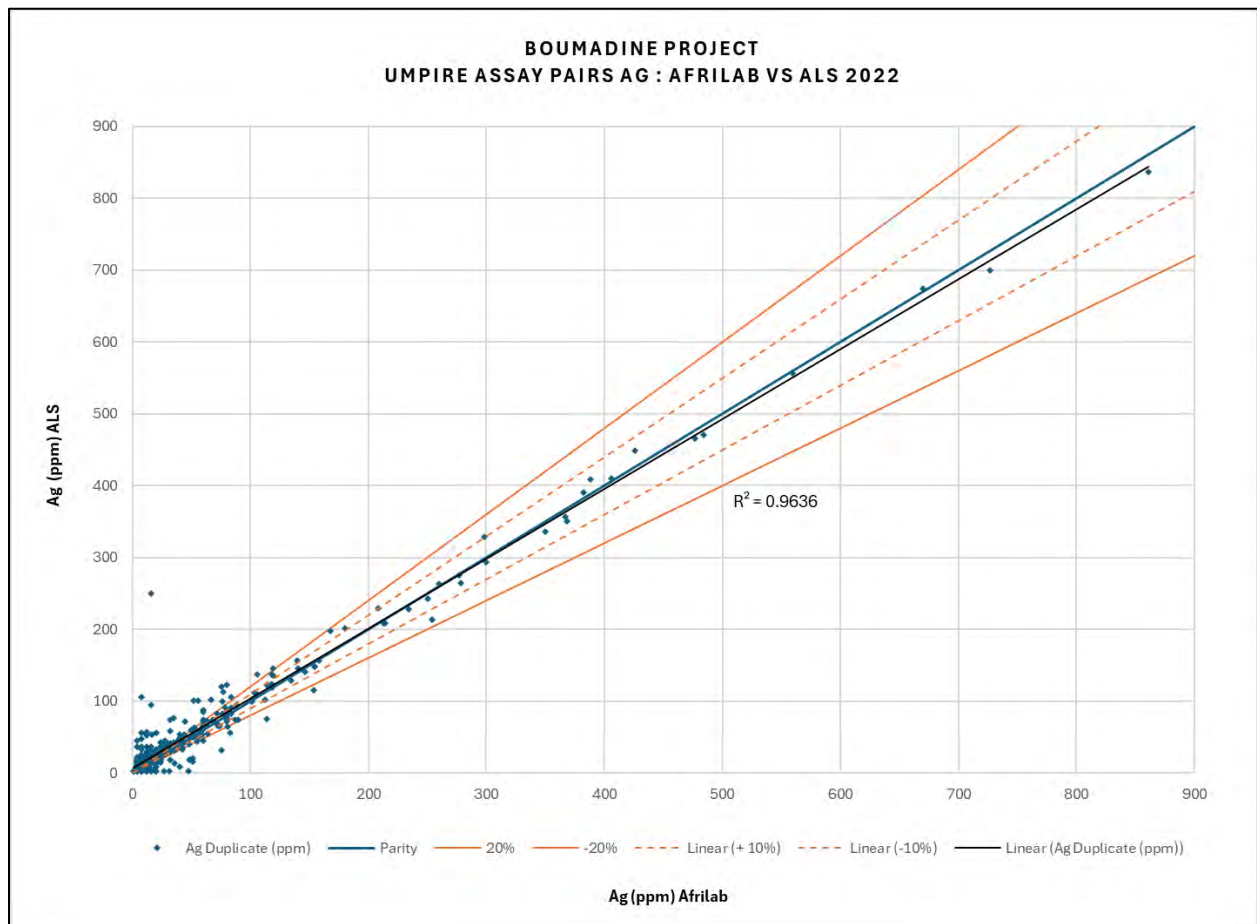
The Author of this Technical Report section does not consider the biases exhibited in the gold data to be of material impact to the current Mineral Resource Estimate, as the primary laboratory is potentially under-reporting these results. Overall, the Author considers the data to be acceptable for use in the current Mineral Resource Estimate.

FIGURE 11.34 UMPIRE ASSAY COMPARISON FOR AU: AFRILAB VERSUS ALS 2022



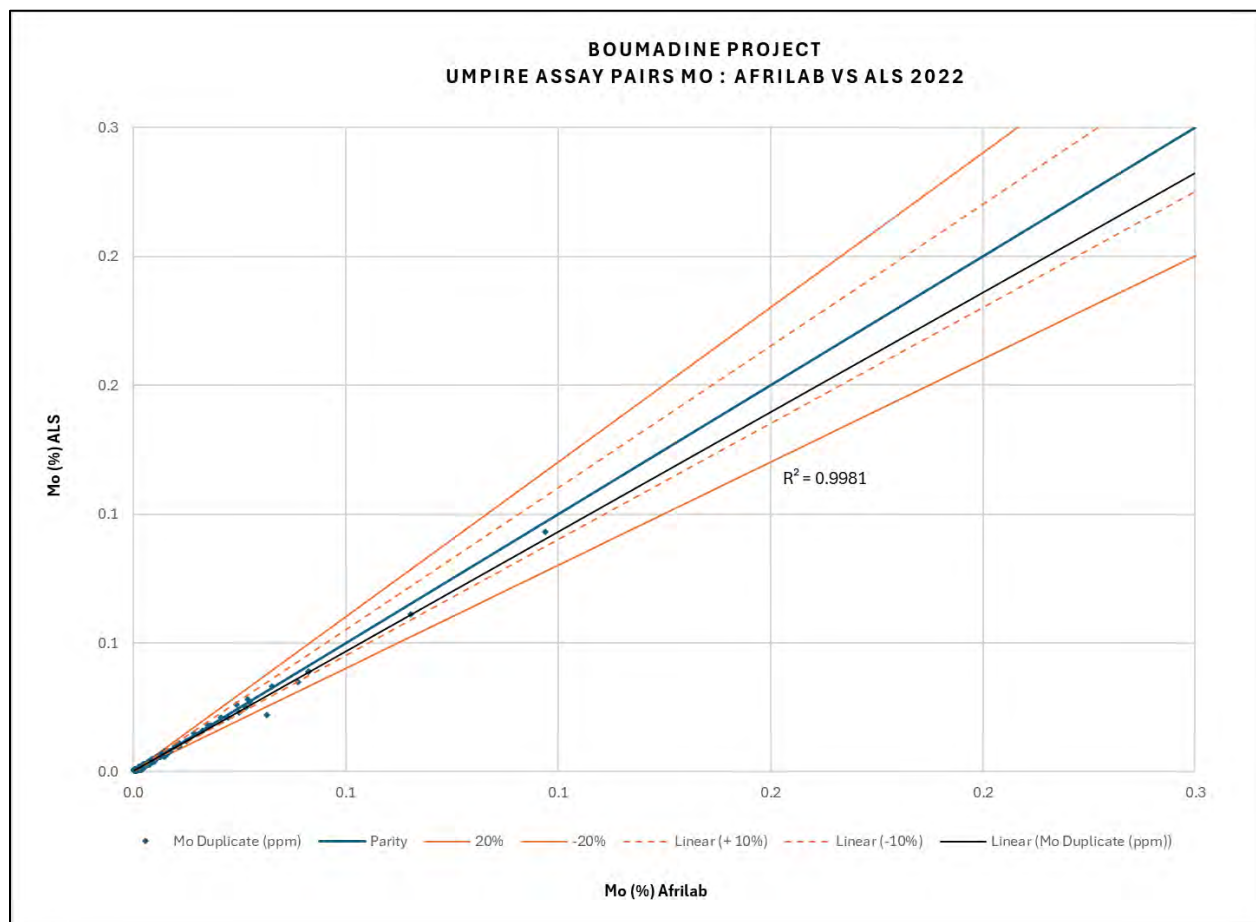
Source: This Study

FIGURE 11.35 UMPIRE ASSAY COMPARISON FOR AG: AFRILAB VERSUS ALS 2022



Source: This Study

FIGURE 11.36 UMPIRE ASSAY COMPARISON FOR MO: AFRILAB VERSUS ALS 2022



Source: This Study

11.3 CONCLUSION

Aya implemented and monitored a thorough QA/QC program for the drilling completed at the Boumadine Project during the 2018 to 2024 period and also completed umpire assaying to confirm sampling and analyses undertaken during the drilling undertaken. Examination of QA/QC results for all recent sampling indicates no material issues with accuracy, contamination or precision in the data, and the late-2022 check assaying reviewed by the Author generally confirms the original data. The Author of this Report section recommends that Aya continue with the current QC protocol and continue to monitor QC data on an ongoing basis.

It is the opinion of the Author of this Report section that sample preparation, security and analytical procedures for the Boumadine Project are adequate and that the data are of good quality and satisfactory for use in the current Mineral Resource Estimate.

12.0 DATA VERIFICATION

12.1 DRILL HOLE DATABASE VERIFICATION

12.1.1 March 2024 Assay Verification

The Authors of this Report section conducted verification of the Boumadine Deposit drill hole assay data for silver, gold, copper, lead, zinc, molybdenum and iron by comparison of the database entries with assay certificates, supplied directly to the Authors by AfriLab. Assay certificates were supplied in Excel (.xlsx) file format.

Assay data from 2018 to 2023 were verified for the Boumadine Project by the Authors. Approximately 15% of the overall data were verified for silver, gold, copper, lead, zinc, molybdenum and iron. Approximately 89% of the constrained data were verified for gold and molybdenum and ~16% for silver, copper, iron, lead and zinc. No errors were encountered in the data during the verification process.

The database verification undertaken by the Authors is summarized in Table 12.1.

TABLE 12.1				
BOUMADINE DATABASE VERIFICATION SUMMARY: MARCH 2024				
Element	All Recent Data (N=57,364)		Constrained Recent Data (N=1,591)	
	No. Verified	% Verified	No. Verified	% Verified
Au	8,758	15.3	1,415	88.9
Mo	8,760	15.3	1,409	88.6
Ag	8,566	14.9	259	16.3
Cu	8,566	14.9	259	16.3
Fe	8,566	14.9	259	16.3
Pb	8,566	14.9	259	16.3
Zn	8,566	14.9	259	16.3

Source: This Study

12.1.2 Drill Hole Data Validation

The Authors also validated the Mineral Resource database in GEMS™ by checking for inconsistencies in analytical units, duplicate entries, interval, length, or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate drill hole collar locations, survey and missing interval and coordinate fields. A few errors were identified and corrected in the database.

12.2 P&E SITE VISIT AND INDEPENDENT SAMPLING

Mr. Antoine Yassa, P.Geo., of P&E and an independent Qualified Person under the terms of NI 43-101, completed a site visit to the Boumadine Property from March 12 to 14, 2024. The site visit included the following activities:

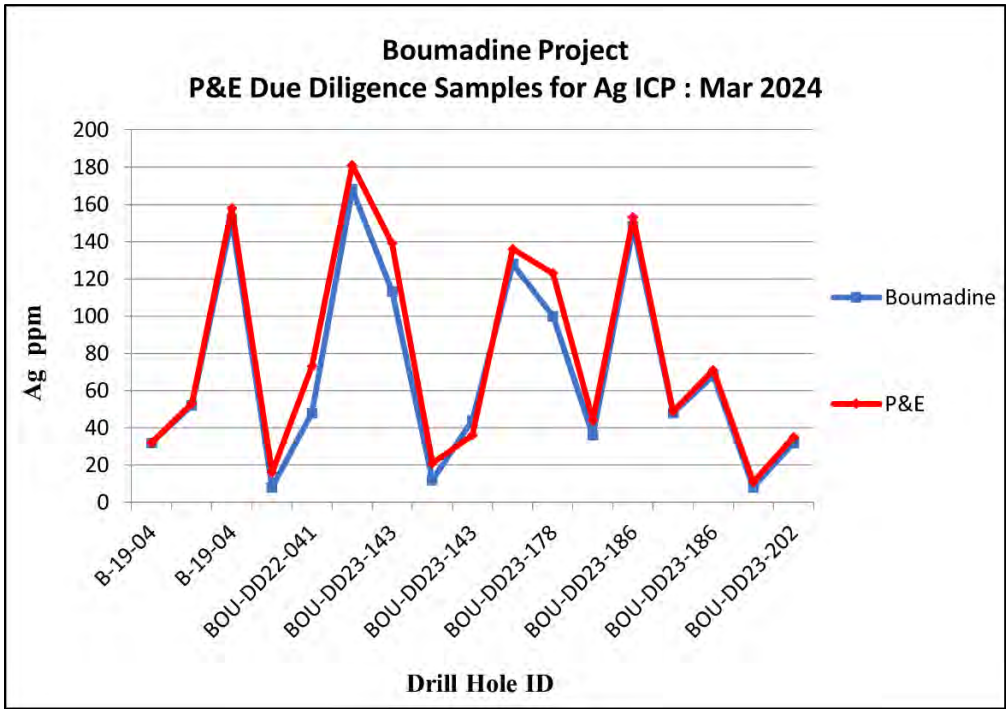
- Visiting various surface drilling sites;
- Inspection of onsite drill core logging and drill core storage facilities;
- GPS location verifications along the main mineralized trend from North to South
- Inspection of Afrilab in Marrakesh;
- Review of database, drill hole collar surveying, logging, sampling and QC procedures;
- Technical discussions and;
- Drill core verification sampling.

Mr. Yassa collected 21 verification drill core samples from seven diamond drill holes. Samples were selected from holes drilled in 2019, 2022 and 2023. A range of high, medium and low-grade samples were selected from the stored drill core. Samples were collected by taking a quarter drill core, with the other quarter drill core remaining in the drill core box. Individual samples were placed in plastic bags with a uniquely numbered tag, after which all samples were collectively placed in a larger bag. Mr. Yassa delivered the samples to AfriLab, a certified laboratory in Marrakesh, Morocco for sample preparation and pulp shipment directly to Actlabs Laboratories in Ancaster, Ontario for analysis. The pulp samples at Actlabs were analyzed for silver and gold by fire assay with gravimetric finish, and by 4-acid digest with ICP-OES finish for silver, copper, molybdenum, lead and zinc.

Actlabs is independent of Aya and P&E and runs a Quality System that is accredited to international quality standards through ISO/IEC 17025:2017 and ISO 9001:2015. The accreditation program includes ongoing audits, which verify the QA system and all applicable registered test methods.

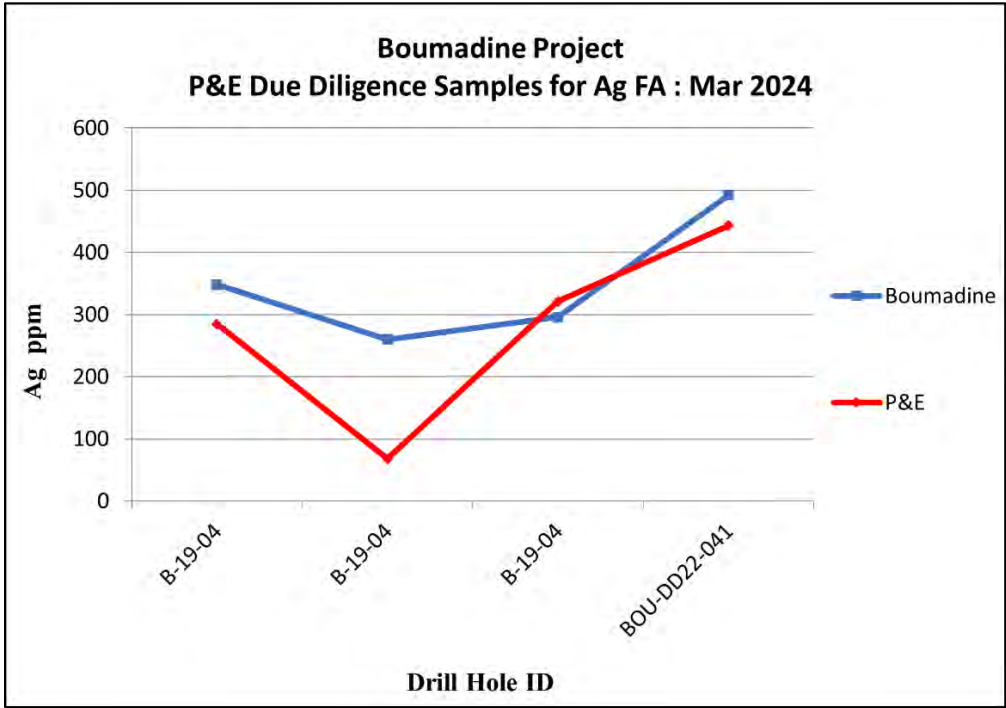
Results of the Boumadine site visit verification samples are presented in Figures 12.1 to 12.7.

FIGURE 12.1 RESULTS OF MARCH 2024 AG (ICP) VERIFICATION SAMPLING BY AUTHORS



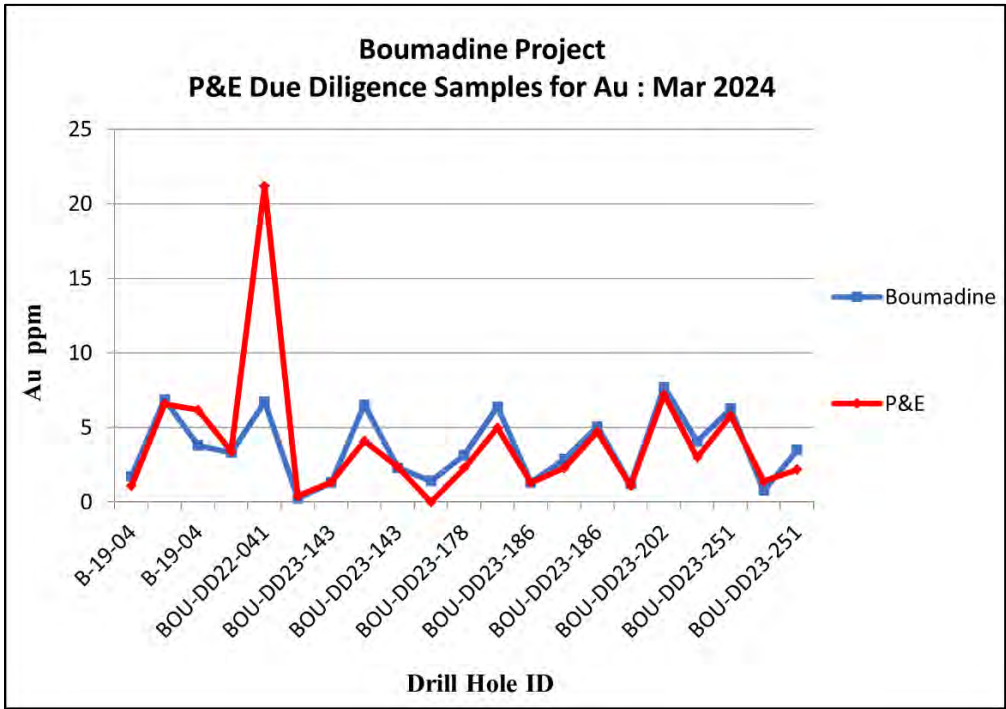
Source: This Study

FIGURE 12.2 RESULTS OF MARCH 2024 AG (FA) VERIFICATION SAMPLING BY AUTHORS



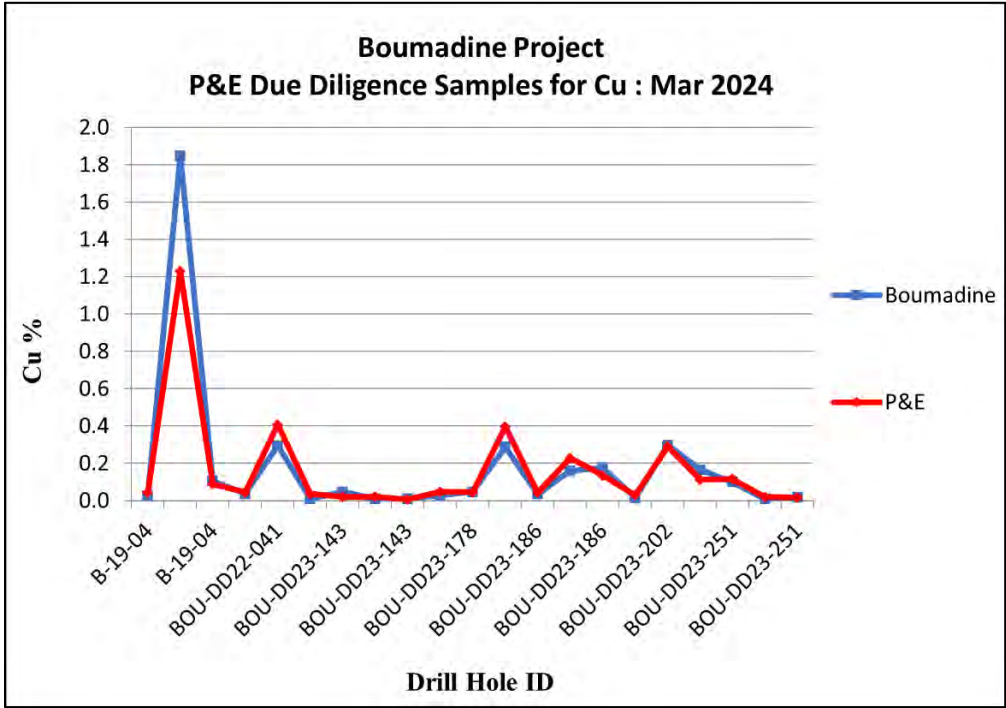
Source: This Study

FIGURE 12.3 RESULTS OF MARCH 2024 AU VERIFICATION SAMPLING BY AUTHORS



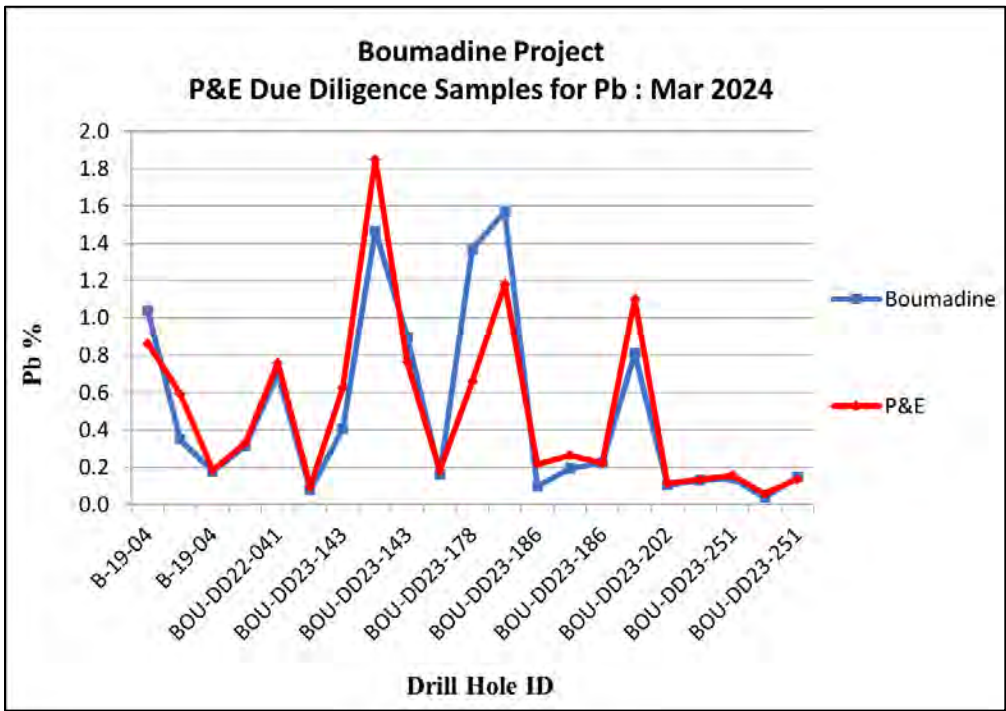
Source: This Study

FIGURE 12.4 RESULTS OF MARCH 2024 CU VERIFICATION SAMPLING BY AUTHORS



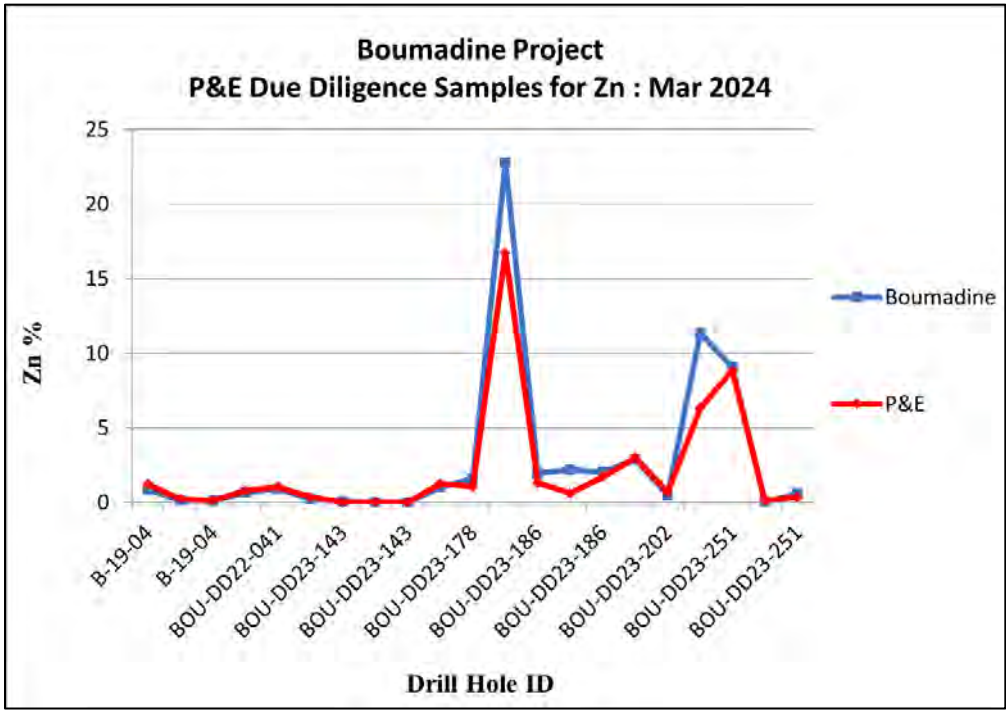
Source: This Study

FIGURE 12.5 RESULTS OF MARCH 2024 Pb VERIFICATION SAMPLING BY AUTHORS



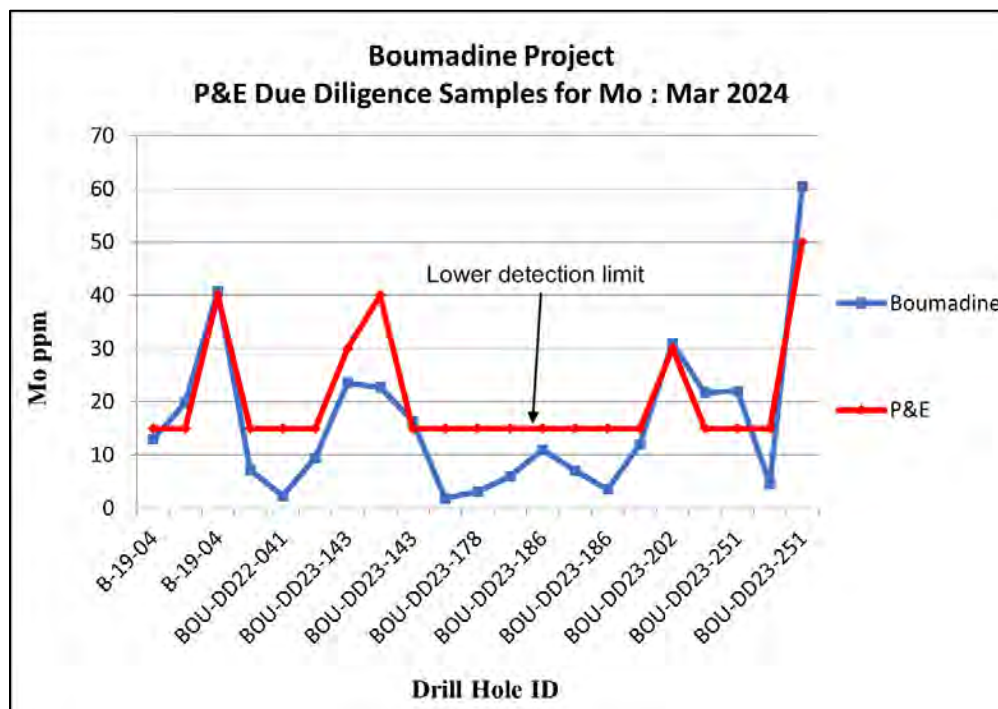
Source: This Study

FIGURE 12.6 RESULTS OF MARCH 2024 Zn VERIFICATION SAMPLING BY AUTHORS



Source: This Study

FIGURE 12.7 RESULTS OF MARCH 2024 MO VERIFICATION SAMPLING BY AUTHORS



Source: This Study

12.3 CONCLUSION

Verification of the Boumadine Project data, used for the current Mineral Resource Estimate, has been undertaken by the Authors, including a site visit, due diligence sampling, verification of drill hole assay data from electronic assay files, and assessment of the available QA/QC data. The Authors consider that there is good correlation between assay values in Aya's database and the independent verification samples collected and analyzed at Actlabs. The Authors consider that sufficient verification of the Project data has been undertaken and that the supplied data are of good quality and suitable for use in the current Mineral Resource Estimate.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 HISTORICAL METALLURGICAL TESTWORK (PRE-2018)

Several metallurgical testwork programs have been completed on the Boumadine mineralized material between 1980s and 2018.

From 1986 to 1992, testwork programs have been completed by companies like SODIM and BRPM SODECAT, including pilot plant testwork, with the aim of upgrading the recovery by a selective flotation process of the precious metals in the lead and zinc concentrates.

In 2011, MAYA Gold & Silver organized a testwork campaign with the URSTM laboratory, based in Rouyn-Noranda, Québec. The samples were collected from the historical tailings pond located at the Boumadine site. The goal of this test campaign was to assess the potential recovery of the precious metals contained in the historical tailings. The results from the URTSM tests (direct cyanidation tests) showed the following:

- The recovery obtained for gold was very low, at 27.8% after 44 hours of cyanidation. However, the recovery for silver was much higher at 70.1%. It was determined that the majority of leaching occurs within the first 2 hours; and
- The consumption of cyanide and hydrated lime was significant, ~2.2 kg NaCN/t and 8.9 kg Ca(OH)₂/t of mineralized material for 19 hours of cyanidation.

It appeared that the Boumadine sample was highly refractory to direct cyanidation, especially for gold, and to a lesser extent for silver.

In 2013, some metallurgical testwork was completed at the Nichromet Extraction Inc facility, located in Thetford Mines, in Québec.

Two samples collected from the bottom (BMF) and the top (BMS) of the main dry-stacked tailing located on the historical Boumadine Mine site were sent to the laboratory. The specimens weighed 5,156 g and 5,159 g, respectively, and were crushed to 80 µm (200 mesh) before being sent for geochemical analysis to the SGS Lakefield Laboratory. The samples are deemed to be representative of the entire tailings impoundment. Results of the assays are presented in the following Table 13.1.

TABLE 13.1 GEOCHEMICAL ANALYSIS OF BOUMADINE TAILING SAMPLES BMF AND BMS PERFORMED BY SGS LABORATORIES		
Elements	BMS*	BMF*
Si (wt%)	13.60	9.52
Fe (wt%)	19.40	26.00
Mg (wt%)	0.16	0.11
Ca (wt%)	0.19	0.15
K (wt%)	0.78	0.62
Mn (wt%)	0.01	0.01
Pb (wt%)	0.07	0.12
Zn (wt%)	1.115	2.36
Cu (wt%)	0.09	0.09
Ni (wt%)	0.01	0.01
Co (wt%)	0.01	0.01
As (wt%)	1.04	1.53
Au (g/t)	1.85	2.71
Ag (g/t)	133	180
S (wt%)	16.00	26.00

Notes: * bottom (BMF) and the top (BMS), wt% = weight percent

The first step of the hydro-metallurgical process at Nichromet was the oxidation of the mineralized material in an oven at 750°C, in order to remove the sulphides that make it resistant to the gold and silver recovery by the means of cyanidation or “chloration”.

The chloration was done in an aqueous solution comprising 2% NaOCl, 300 g NaCl/L and 30 g NaBr/L and the mixing and the contact time were 4 hours at 25°C. Results are given in Table 13.2.

TABLE 13.2 RATES OF AU AND AG EXTRACTION AFTER CHLORATION OF THE OXIDIZED RESIDUES OF SAMPLES BMF AND BMS		
Sample ID	Au Extraction (%)	Ag Extraction (%)
BMS*	31.94	11.48
BMF*	31.51	25.59

* bottom (BMF) and the top (BMS)

To improve the lixiviation treatment, 50 g of BMS and BMF samples were mixed in a 2 g HNO₃ (69%) and 10 g H₂SO₄ (98%) solution without adding water. Strong mixing produced a homogeneous mud which was heated to 160°C for 1½ hours. The results show a 49% extraction

for silver and an extraction of 69% of gold was achieved for sample BMS and only 18% for sample BMF (Table 13.3).

The duration of oxidation and addition of O₂ were also studied for the two tailings samples. The results demonstrate that an amount of 0.084% S⁻² is found in the BMF residue after a 2 hours period of oxidation. S⁻² amounts of 0.067% and 0.066% occur after 3 hours for samples BMF and BMS, respectively. Adding O₂ during the last hour of oxidation results in 0.057% and 0.066% S⁻² for samples BMF and BMS, respectively. These results show that a period of 2 hours leads to the removal of 99.9% of S⁻² from the residue.

The Nichromet testwork results showed that the best extraction method for gold and silver appears to be a lixiviation process using a blend of nitric and sulphuric acid solution. Doubling the amount of acid produces a respective extraction of 62% and 68% of gold for samples BMF and BMS after chloration. These are comparable to the former results using less acid. For silver, the respective extraction is 49% and 48% for samples BMF and BMS, which is a significant improvement from the earlier process.

TABLE 13.3 RATE OF EXTRACTION FOR AU AND AG FOR RE-CRUSHED SAMPLES BMF AND BMS		
Sample ID	Au Extraction (%)	Extraction (%)
BMS*	67.63	47.74
BMF*	61.98	48.76

Note: Lixiviation with 1N HNO₃/2.5N H₂SO₄ solution; chloration 300/30 - 2% NaOCl).

* bottom (BMF) and the top (BMS).

It appears that ~60 to 70% of the gold can be removed from samples BMF and BMS when a moderate period of oxidation is employed. A longer oxidation rate with injection of O₂ at higher temperature is counterproductive, leading to the formation of more refractory components. These results are presented in the following Table 13.4.

TABLE 13.4 AU AND AG EXTRACTION RATE FOR SAMPLES BMS AND BMF ACCORDING TO THE DURATION OF OXIDATION				
Process	BMF* Extraction (%)		BMS* Extraction (%)	
	Au	Ag	Au	Ag
Oxidation 2 hrs + Chloration 300/30	68	49	62	48
Oxidation 3 hrs + O ₂ + Leaching HNO ₃ /H ₂ SO ₄ + Chloration 300/30	32	25	32	12

Notes: bottom (BMF) and the top (BMS), hrs = hours

13.2 SGS LAKEFIELD METALLURGICAL TESTWORK – 2018

13.2.1 Grindability Testwork

The fresh mineralized material sample, Sample No. 1, was submitted for the Bond ball mill grindability test performed at 100 mesh of grind. The Bond ball mill work index (BWI) is compared to the SGS database. The BWI was 10.7 kWh/t, which lies in the moderately soft range in the SGS database.

13.2.2 Flotation Testwork

Open circuit batch rougher kinetic flotation tests were conducted on Samples No. 1 (fresh rock) and No. 2 (tailings).

A baseline lead-zinc-pyrite rougher kinetic flotation test was performed on Sample No. 1, the fresh mineralized material sample. A second test was performed at a finer primary grind and with increased dosages of depressants and collectors (sodium isopropyl xanthate (“SIPX”) and potassium amyl xanthate (“PAX”) to try to improve the lead concentrate grade and the lead and zinc recoveries.

The lead recovery in the second test was 69.7% at 3.4% mass pull and 7.79% grade. The zinc recovery was 81.9% at 3.3% mass pull and 36.8% Zn grade. The sulphur recovery to the pyrite concentrate was 92% with 68.6% mass pull and 50.7% S grade.

A flotation test was completed on the historical tailings Sample No. 2. It was discovered that the natural pH of the water was very low when this sample was pulped. The grinding mill discharge was pH 2.3 in the preliminary test after adding 1,250 g/t lime to the grinding mill. The lime consumption required to achieve a pH of 8.5 was extremely high. Bulk sulphide flotation on the washed tailings was performed, resulting in a pyrite concentrate grading 49.3% S and 6.1 g/t Au. The sulphur recovery was 99.6% and gold recovery 91.3%.

Open circuit batch cleaner flotation tests were performed on the fresh mineralized material Sample No. 1.

The first test, F5, attempted to produce lead, zinc, and pyrite concentrates. A lead 4th cleaner concentrate grading 33.1% Pb was produced at 56.7% Pb recovery. The zinc 3rd cleaner concentrate assayed 51% Zn with 78% recovery, whereas the pyrite rougher concentrate contained 49.8% S and 3.4 g/t Au, at 92.4% S recovery and 73% Au recovery. The pyrite rougher tail assayed 0.2 g/t Au. Most of the gold losses were in the lead circuit.

A second test was performed without lead flotation. A zinc concentrate was produced at 46.4% zinc, with only at 47.6% recovery. The pyrite rougher concentrate assayed 49.8% S and 5.28 g/t Au, with 97.5% S recovery and 87.5% Au recovery. The gold loss to the zinc circuit was 11%. The pyrite rougher tails assayed 0.22 g/t Au. The lead reporting to the pyrite concentrate was 85.2%.

A third test was performed to produce pyrite concentrate for downstream testing (roast/CIL). A lead rougher stage was included to reduce the amount of lead in the pyrite concentrate. A zinc concentrate grading 54.2% Zn at 79.5% recovery was produced. The pyrite concentrate graded 51% S and 5.18 g/t Au with sulphur recovery at 93.9% and gold recovery at 80.9%. The major gold loss was to the lead rougher concentrate at 15.5%. The pyrite concentrate was submitted for a roast/CIL test.

13.2.3 Cyanidation Testwork

Seven cyanidation tests were completed on the historical tailings samples and pyrite concentrates; five tests on tailings and two tests on pyrite concentrate samples after fine grinding to <10 µm.

The tailings samples were washed before leaching. Lime and NaCN consumptions were high and further weight losses occurred during the leaching period. The cyanidation extractions for gold ranged from 11 to 86% and normalized recoveries (based on residue and direct head grades) ranged from 25 to 69%.

The lime and NaCN consumptions for the pyrite concentrate samples were also high and recoveries were low at 19 and 32%.

13.2.4 Roast – CIL Testwork

Four roasting tests were completed on various samples (pyrite concentrate and historical tailings). The tests were conducted as two-stage roasts, in a static muffle furnace for a total of 4 hours (2 hours per stage). The sample was stirred every 15 minutes during the second stage. All sulphide sulphur was oxidized during roasting.

Each calcine was subsequently subjected to a standard cyanidation test as CIL, with 2 g/L NaCN, 10 g/L carbon for 24 hours. The RST-2 calcine (CN-9 feed) was ground in an attrition mill to <10 µm prior to cyanidation. The CIL results are listed in Table 13.5. Gold extraction from the calcines ranged from 45 to 85%, whereas silver recovery ranged from 5 to 72%. The poor recovery from the fully oxidized calcine may be due to the presence of 0.15 to 0.25% lead in the pyrite concentrates, which is known to cause problems in the roasting process.

Additional testwork would be required to optimize the roast-leach process, including examining lower temperatures for the second stage roast (600 to 650°C) and diagnostic work would be useful in determining the un-leached precious metal in the residues.

TABLE 13.5 ROASTING – CALCINE CIL RESULTS							
Test ID	Calcine CN Test ID	Reagent Addition (kg/t)		Reagent Consumption (kg/t)		CIL Recovery (%)	
		NaCN	CaO	NaCN	CaO	Au	Ag
RST-1	CN8	2.82	1.16	1.02	1.16	62.5	9.1

RST-2	CN9	4.17	4.29	3.91	4.27	84.8	72.5
RST-3	CN10	2.62	1.19	1.02	1.18	68.7	7.0
RST-5	CN11	3.39	1.54	1.54	1.52	44.8	4.7

13.2.5 POX – CIL Testwork

Seven pressure oxidation (POX) tests were completed on various samples. The POX tests were carried out in standard Parr 2 L titanium autoclaves. The pulp density in the POX tests was dictated by the sulphide sulphur grade in the POX feed and the need to create autothermal heating conditions. The POX feed was pre-acidulated to pH 1.5 for 30 minutes by addition of sulphuric acid. The Oxidized Tailings Comp was naturally acidic, and no acid was added to the POX feed for that sample. After POX, the pulp was filtered, and the solids washed. POX residues were sub-sampled for analysis and the remaining residue forwarded for CIL. POX4 through POX7 evaluated the effect of Hot Curing (HC) and Lime Boiling (LB) on subsequent lime consumption and silver recovery during CIL.

13.2.5.1 Hot Curing

POX4 through POX7 all incorporated a Hot Curing stage following POX. Hot Curing consists of holding the autoclave discharge slurry hot (~95°C), under atmospheric pressure, to allow basic iron sulphate (produced at high temperature) to re-dissolve to ferric sulphate in solution according to the following equation:



During the Hot Curing stage for POX4 and POX5, solution samples were taken after 1, 2 and 4 hours. Time zero iron in solution values are the POX liquor before starting the hot cure. In POX4, the iron in solution increased as expected based on the equation above; however, there was no change in iron in solution in POX5, because the oxidation was poor in that test (POX was overfilled, and some pulp was reported in the off-gas system). Under these conditions, very little basic iron sulphate was produced in the autoclave. In fact, the ~15 g/L iron in solution was almost all present as ferrous iron (versus ferric as basic iron sulphate). Hot curing has a significant impact on lime consumption during cyanidation/CIL.

13.2.5.2 Gold and Silver Extraction from POX Residues

Washed POX residues (direct POX residue, Hot Cure residue, or Lime Boil residue) were subjected to standard carbon-in-leach (CIL) tests to determine gold and silver recovery. Test conditions and results are summarized in Table 13.6.

Gold recovery from the flotation concentration after POX 1 pressure oxidation (POX CIL1) was high, at 97.4%. However, lime consumption was extremely high at 321 kg/t (POX feed basis). Silver recovery was low at 49%. Both of these results are related to the chemistry in the pressure oxidation process, with high sulphide feeds tending to produce significant amounts of basic iron sulphate and silver jarosite. The sulphate ion in basic iron sulphate does not react with limestone and can only be neutralized with lime. Therefore, copious amounts of lime were consumed during

neutralization of the POX residue prior to and during cyanidation. In addition, it is well known that silver jarosite is insoluble in cyanide solution. These are well known phenomena in processing of refractory gold sulphide concentrates by pressure oxidation. The consumption of lime by the POX 4 residue was reduced significantly to 16.8 kg/t in the POX CIL 4 test, by employing a Hot Cure (“HC”) stage after pressure oxidation. Silver recovery in this test, however, dropped from 49% in POX CIL 1 to just 1.2%, indicating that more silver jarosite formed during hot curing. In the final test on the flotation concentrate, POX CIL6, the autoclave slurry was first subjected to Hot Curing, followed by solid-liquid separation and washing of the residue. The washed solids were then subjected to a Lime Boil stage, which is designed to breakdown the silver jarosite complex. Excess lime is added to the slurry (generally 100 to 200% stoichiometric excess of the sulphate in the solids), which is then held near boiling temperature for several hours. The overall lime requirement was 60 kg/t, and recovery of both gold and silver were high after lime boiling, at ~98%. The POX=CIL results are presented in Table 13.6.

TABLE 13.6 POX – CIL RESULTS									
Test ID	Sample ID	Lime Boil CaO Addition		Reagents (kg/t of POX feed)				CIL Recovery (%)	
				Added		Consumed			
		kg/t lb Feed	kg/t POX Feed	NaCN	CaO	NaCN	CaO	Au	Ag
POX CIL 1	Pox 1 residue			7.24	320.8	3.55	320.8	97.4	49.2
POX CIL 2	Pox 2 residue			1.96	93.2	1.00	93.2	87.7	12.1
POX CIL 3	Pox 3 residue			2.21	73.7	0.61	73.6	95.4	3.5
POX CIL 4	Pox 4 HC residue			6.56	16.8	4.45	16.8	97.6	1.2
POX CIL 5	Pox 5 HC residue			1.49	2.4	0.37	2.2	43.7	65.7
POX CIL 6	Pox 6 HC-LB residue	263	59.2	2.11	0.6	0.90	0.6	98.2	97.6
POX CIL 7	Pox 7 HC-LB residue	40.1	23.8	1.39	0.4	0.25	0.3	71.6	81.4

13.3 SGS LAKEFIELD METALLURGICAL TESTWORKS - 2022

The 2022 test program consisted of X-ray diffraction (“XRD”) and Tescan Integrated Mineral Analyses (“TIMA-X”) mineralogical studies and the following processing and metallurgical tests:

- Comminution test.
- Gravity separation.
- Flotation – open circuit and locked cycle testing.
- Direct CIL cyanidation of pyrite flotation concentrate.
- BIOX/CIL of pyrite concentrate.
- Albion Leach TM CIL.
- Roast/CIL.

13.3.1 Mineralogy

Gold and silver deportment studies were completed on fresh drill core representing a Main Composite (from the Boumadine Main Deposit or Central Zone).

A portion of the composite was stage-crushed to an intended target P_{80} of 75 μm . The sample was screened into +53 μm and -53 μm fractions. Chemical analyses of the two fractions indicated a significant concentration of copper, lead and zinc in the finer fraction. The gold content was slightly higher in the coarse fraction (3.7 versus 3.0 g/t), whereas silver was slightly lower (71 versus 114 g/t).

The XRD results provided the overall mineral composition of the composite sample as summarized in Table 13.7.

TABLE 13.7	
COMPOSITE SAMPLE MINERALOGY	
Mineral	% Weight
Quartz	34.6
Pyrite	32.6
Muscovite	17.1
Chlorite	3.3
Sphalerite	3.2
Gypsum	2.9
Arsenopyrite	2.8
Biotite	1.7
Galena	0.9
Chalcopyrite	0.9
Total	100

Slightly more than 40% of the sample weight were sulphides with the most common being pyrite. The presence of chlorites and micas could affect froth flotation efficiencies, and that of arsenopyrite could influence metallurgical process selection.

The TIMA-X bulk mineralogy analyses were somewhat different with the following results. The sulphides in the composite sample were found to be consisting mainly of pyrite (55.5%), sphalerite (4.1%), arsenopyrite (3.2%), galena (1.4%), and trace amounts of chalcopyrite (0.4%), pyrrhotite (0.1%), and tetrahedrite (0.06%). The remainder of the sample was composed of quartz (21.7%), micas/chlorite/clays (10.6%), and trace amounts (<1% each) of other minerals.

The liberation and mineral association of the key minerals of interest are as follows:

1. Free and liberated pyrite was determined to be high (>94%) in both plus and minus 53 μm fractions;
2. The arsenopyrite is 77% free and liberated; and
3. The sphalerite is 78% free and liberated, galena less at 65%.

Grade-recovery associations in flotation were determined by SGS to be potentially:

- Galena – 58% to 100% pure mineral at 87% to 54% recovery; and
- Sphalerite – 63% to 99% pure mineral at 96% to 69% recovery.

Gold was determined by SGS to be present as native gold (70%) and electrum (30%). Silver was found to be widely distributed as native silver (20%), with gold (electrum – 20%), and six silver minerals.

Essentially, all of the gold was measured to be present in fine (<15 µm) grains with 23% in extremely fine (<3 µm) grains. As a result, half of the gold grains were identified as locked-in, mainly within pyrite grains. Practically no gold grains were identified as associated with or locked-in other sulphides. These phenomena suggest that high concentration gold by physical means would be unrealistic and that leaching extraction would need to follow a high degree of pyrite oxidation.

13.3.2 Comminution Testing

The Main Composite sample was submitted for the Bond ball mill grindability test performed at a P₈₀ 150 µm mesh grind. The Bond ball mill work index (“BWI”) is compared to the SGS database. The measured BWI was 15.4 kWh/t, which lies in the moderately hard range of the SGS database.

13.3.3 Gravity Separation

The test feed, 1.8 kg of the Main Composite sample, was ground in a laboratory rod mill to P₈₀ 78 µm. The mill discharge was passed through a Knelson MD-3 Concentrator collecting a concentrate and producing tailings. The Knelson concentrate was further upgraded on a Mozley mineral separator. The final concentrate represented 0.1% of the total mass and graded 312 g/t Au and 747 g/t Ag. The combined Knelson and Mozley tailings assayed 1.55 g/t Au and 117 g/t Ag. The recovery to the final Mozley concentrate was 19% Au and 0.7% Ag.

The results indicated that gravity may not add significant value if incorporated in the final flowsheet, based on the results with the Main Composite sample.

13.3.4 Flotation Testwork

13.3.4.1 Rougher Flotation Tests

Open circuit rougher and cleaner tests were completed on the Main Composite sample, attempting to produce a saleable lead/gold/silver concentrate and a pyrite concentrate with the maximum amount of gold and silver, along with a zinc concentrate that would be floated prior to pyrite flotation.

Locked cycle testing was also completed to determine the effect of recirculating middling products, to test the robustness of the conditions and to produce a pyrite concentrate for downstream testing.

The baseline lead-zinc-pyrite kinetic test (F3) was completed at a primary grind P_{80} of 58 μm . The reagents and grind size were varied in the subsequent tests. These test conditions produced a lead-gold-silver concentrate grading 9.39% Pb, 3.47% Zn, 1.60% As, 30.8% S, 12.4 g/t Au, and 678 g/t Ag in the baseline test. The concentrate recovered 87% of the lead, 32.8% of the gold, and 53.9% of the Ag. However, 14.8% of the Zn and 13% of the As also reported to the lead rougher concentrate.

Further tests were conducted with the objective of increasing the grade of the lead-gold-silver concentrate and a pyrite concentrate containing the remainder of the gold and silver. The tests investigated different reagent schemes and grind sizes. The main objective of these tests was to reduce the amount of zinc reporting to the lead concentrate. Various zinc/sulphide depressants, in addition to ZnSO_4 and NaCN, were tested, such as sodium sulphide, sodium sulphite, and sodium metabisulphite. None of these alternatives significantly reduced the level of zinc in the rougher concentrate. The zinc recovered to the lead concentrates ranged from 14 to 25%. The TIMA-X mineralogical investigation results indicated that only 3% of the galena was associated with sphalerite in the ground Main Composite sample. This suggests that there exists potential for improved rejection of zinc from a lead concentrate.

The combined lead + pyrite concentrates all achieved recoveries of >90% gold and >85 to 87% silver.

13.3.4.2 Cleaner Flotation Tests

Open circuit batch cleaner flotation tests were made on the Main Composite sample. The results showed that, although the gold and silver grades of the lead concentrates were high in Tests F6 and F11, and the lead recoveries were acceptable, the lead grades were all below the saleable target. The zinc grade in Test F11 was above the target grade; however, the recovery was low, with significant losses occurring in the cleaning stages.

13.3.4.3 Locked Cycle Flotation

A single 6-cycle locked cycle test was completed with the goals of assessing overall metallurgical performance when internal recycles are incorporated and producing concentrate for downstream testing. Products were recirculated in a typical counter-current manner. The lead and zinc first cleaner tailings were advanced to the next circuit roughing stage.

The conditions for the locked cycle test were based on the results from the batch tests, with minor adjustments in the reagent dosages. The test was completed over six cycles with 2 kg of feed per cycle. The primary grind P_{80} target was 58 μm , lead regrind D_{80} was 18 μm , and zinc regrind D_{80} was 17 μm . The test generally exhibited satisfactory stability with the exception of zinc, where the stability was lower than the other elements. This result suggests steady state may not have been achieved in the zinc circuit. The results of the locked cycle tests are presented in Table 13.8.

13.2.1 Pyrite Concentrate Testing

The pyrite concentrates from cycles A-F were combined and blended, then split into small charges for direct CIL, Albion, BIOX, and roasting testwork.

TABLE 13.8
LOCKED CYCLE TEST RESULTS SUMMARY

Product	Weight (%)	Assays							% Distribution						
		Cu (%)	Pb (%)	Zn (%)	As (%)	S (%)	Au (g/t)	Ag (g/t)	Cu	Pb	Zn	As	S	Au	Ag
Pb Conc	3.0	4.81	26.7	4.35	1.67	35.0	26.6	1,923	75.3	84.5	7.1	4.7	4.1	26.5	53.1
Zn Conc	2.3	0.37	0.48	58.1	0.27	32.9	1.22	166	4.3	1.2	72.0	0.6	2.9	0.9	3.5
Pyrite Conc	54.9	0.061	0.18	0.65	1.69	42.4	3.80	78.5	17.4	10.6	19.5	86.8	89.9	69	39.6
Pyrite Tails	39.9	0.015	0.089	0.063	0.21	2.02	0.27	10.5	3.0	3.7	1.4	7.9	3.1	3.6	3.8
Head Calc	100	0.19	0.95	1.83	1.07	25.9	3.02	109	100	100	100	100	100	100	100
Head Direct		0.19	1.00	2.25	0.083		3.33	113							

13.3.5.1 Direct CIL Testing

Two cyanidation tests were completed on the pyrite concentrate at two grind sizes; the “as received” grind size of P₈₀ 42 µm, and reground to D₈₀ 6.3 µm. At the end of the leaching stage, the carbon was screened from the pulp and the samples were filtered, collecting a barren leach solution and a residue. The residue was washed with three displacement washes of water and the wash discarded. The carbon, barren solution, and residue were submitted for gold and silver analysis.

As indicated in Table 13.9, the gold extractions were very low, even with fine grinding, although the gold extraction increased from 9.5 to 22.4%. Silver yielded better extractions, with extraction of 80% from the finely ground sample. The reagent consumptions were high and increased significantly with fine grinding.

TABLE 13.9 DIRECT CIL EXTRACTION			
Sample Type	P₈₀ (µm)	Au Extraction (%)	Ag Extraction (%)
Pyrite Conc	42	9.5	36.4
Pyrite Conc	6.3	22.4	80.2

13.3.5.2 Albion Testing

The Albion Process™, developed by Xstrata Pty Ltd. (Glencore Technology Pty Limited), Australia, is a combination of fine grinding and exothermic oxidative leaching without the need for pressure treatment or external heating.

The Albion leach parameters recommended by Glencore were in line with their standard neutral leach protocol, which was characterized, in this case, by the parameters listed here:

- Grind D₈₀ targets = 6.3 µm (Test NAL-1) and 10 µm (Test NAL-2) (P₈₀);
- pH controlled at 5.5;
- Pulp density = 10% (w/w);
- Leach at 95°C, and
- 96 hours retention time (Test NAL-1) and 78 hours retention time (Test NAL-2).

Sulphide oxidation was high (96.3%) for the test at the finer grind size P₈₀ of 6.3 µm and longer retention time, which dropped significantly to 74.7% when the grind was coarsened to 10 µm and the retention time decreased to 78 hours.

The limestone additions were very high for both tests; 1,650 kg/t of feed to Albion for Test NAL-1 and 1,260 kg/t for Test NAL-2. It should be noted that at the amenability level of testing these additions were not optimized.

The results for the cyanide leaches after Albion oxidation are provided in Table 13.10. Gold and silver extractions were greatly improved after the Albion pre-treatment. The test at 6.3 µm reported

94.4% gold and 94.8% silver extractions. The gold extraction decreased significantly with the NAL-2 residue (coarser grind and shorter retention time). Reagent consumptions were also reduced in comparison with the direct CIL tests.

TABLE 13.10 PYRITE CONCENTRATE ALBION TESTING RESULTS				
Sample	Sulphide Oxidation (%)	P₈₀ (µm)	Au Extraction (%)	Ag Extraction (%)
NAL-1 residue	96.3	6.3	94.4	94.8
NAL-2 residue	74.7	10	84.9	91.3

13.3.5.3 Bacterial Oxidation Testing

Bacterial leaching (or bio-oxidation of sulphides) is a biohydrometallurgical process developed for pre-cyanidation treatment of refractory gold feed or concentrates. The bacterial culture employed is a mixed culture of acidithiobacillus ferrooxidans, acidithiobacillus thiooxidans, and leptospirillum ferrooxidans. The bio-oxidation process consists of contacting refractory sulphide sample (typically flotation derived concentrate) with a strain of the bacterial culture for a suitable treatment period under an optimum operating environment. The bacteria oxidize the sulphide minerals, thus liberating the occluded gold for subsequent recovery via cyanidation.

The inoculum build up was performed in preparation of the bioleach tests. The standard operating procedure applied in all tests was as follows:

- 399 g of sample was pulped with 3,250 mL of 0 K solution in a 5 L reactor and heated to 40°C with heated lines placed in the reactor;
- The targeted pulp density was 10.5% solids (w/w);
- The slurry was agitated with a mechanical mixer and air was sparged through it using a stainless steel sparger;
- The pH of the sample was adjusted to 1.6 and maintained for 24 hours with concentrated sulphuric acid. After 18, 26 or 35 days, the pulps were filtered, and the filtrate was collected and measured. A filtrate sample was submitted for analysis and the remainder retained; and
- The filter cake was repulped with water, agitated using an overhead mixer, and re-filtered. The filter cake was then washed three times with one approximate displacement volume of water per wash stage. The pH of each wash solution was recorded and the wash water discarded. A representative sub-sample of the washed filter cake was submitted for chemical analysis. The remainder of the filter cake was forwarded to cyanidation.

The sulphide oxidations improved with increase in retention time, ranging from 60.6% for the 18-day test to 92.8% for the 35-day test. It should be noted that a 35-day residence time in a batch test translates to an ~5 day retention in a continuous process.

The BIOX residues were leached, and at the end of the leaching period, the carbon was screened from the pulp and the sample was filtered, collecting a barren leach solution and a residue. The residue was washed with three displacement washes of water and the wash was discarded. The samples were submitted for gold and silver assay.

The CIL gold extractions improved from 75 to 85%, with longer retention time; i.e., higher sulphide oxidation, however silver extractions decreased drastically (Table 13.11). This result is most likely due to the Jarosite Formation and may be overcome with the inclusion of a lime boil stage. The reagent consumptions were very elevated. High cyanide consumption in commercial bacterial leaching plants is generally associated with the formation of elemental sulphur as an intermediate sulphide oxidation product in the BIOX process, and reaction between cyanide and sulphur to produce thiocyanate ions in solution.

TABLE 13.11 BIOX TESTWORK RESULTS				
Sample	Days	Sulphide Oxidation (%)	Au Extraction (%)	Ag Extraction (%)
BAT-2 residue	18	60.6	75.2	75.5
BAT-3 residue	26	88.0	52.2	40.1
BAT-1 residue	35	92.8	85.1	37.0

13.3.5.4 Roast-CIL Testing

Roasting tests were completed on the LCT 1 pyrite concentrate. The tests were conducted as one, two, and three-stage roasts, in a static muffle furnace. Each stage was 2 hours. The sample was rabbled every 15 minutes.

Each calcine was then split in half. One-half was reground in a lab attrition mill to a D₈₀ of <10 µm and the other remained at the “as is” particle size. The calcines were then subjected to a standard cyanidation test as CIL, with a 4-hour, pre-conditioning stage with oxygen addition, the addition of lead nitrate and lime, and then a 72-hour leach with 2 g/L NaCN and 4 g/L carbon.

As shown in Table 13.12, gold extraction from the calcines was poor, ranging from 55.6 to 71.1%, whereas silver extraction ranged from 19.9 to 60.3%.

SGS stated that they were uncertain why gold and silver extractions were so poor, even after near complete oxidation of the sulphides. The formation of an impervious molten phase during the roasting process was suggested as a possibility.

TABLE 13.12 ROAST-CIL TESTWORK RESULTS				
Sample ID	P₈₀ (µm)	Sulphide Oxidation (%)	Au Extraction (%)	Ag Extraction (%)
RST1	46.0	99.9	61.1	19.9
	7.4	99.9	71.1	44.9
RST2	41.5	97.6	55.6	51.3
	6.7	97.6	65.9	60.3
RST3	44.3	99.8	59.3	32.5
	7.5	99.8	66.7	51.6
RST6	51.3	89.3	52.5	51.8
	8.1	89.3	63.9	61.8
RST7	36.5	95.1	56.4	29.6
	5.9	95.1	66.7	50.4

14.0 MINERAL RESOURCE ESTIMATES

The Mineral Resource Estimate presented herein for the Boumadine Project has been prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1, and in conformity with generally accepted "CIM Estimation of Mineral Resources and Mineral Reserves Best Practices" guidelines. Mineral Resources have been classified in accordance with the "CIM Standards on Mineral Resources and Reserves: Definition (2014) and Best Practices (2019)" as adopted by CIM Council.

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply, but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the Mineral Resource will be converted into a Mineral Reserve. Confidence in the estimate of Inferred Mineral Resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. The Authors are not aware of any known permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource Estimate.

The Authors consider the block model Mineral Resource Estimates and Mineral Resource classification that was developed by Aya represents a reasonable estimation of the Mineral Resources for the Boumadine Project with regard to compliance with generally accepted industry standards and guidelines, the methodology used for grade estimation, the classification criteria used and the actual implementation of the methodology in terms of Mineral Resource estimation and reporting. The Mineral Resources have been estimated in conformity with the requirements of the CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines as required by the Canadian Securities Administrators’ National Instrument 43-101. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.

Wireframe modelling was developed by Aya using Seequent Leapfrog Geo™ software. Mineral Resource estimation and variography was completed by Aya using Isatis™ software. Open-pit optimization was developed by the Authors using the NPV Scheduler™ software. A draft copy of this Technical Report has been reviewed by Aya for factual errors.

14.1 DATA SUPPLIED

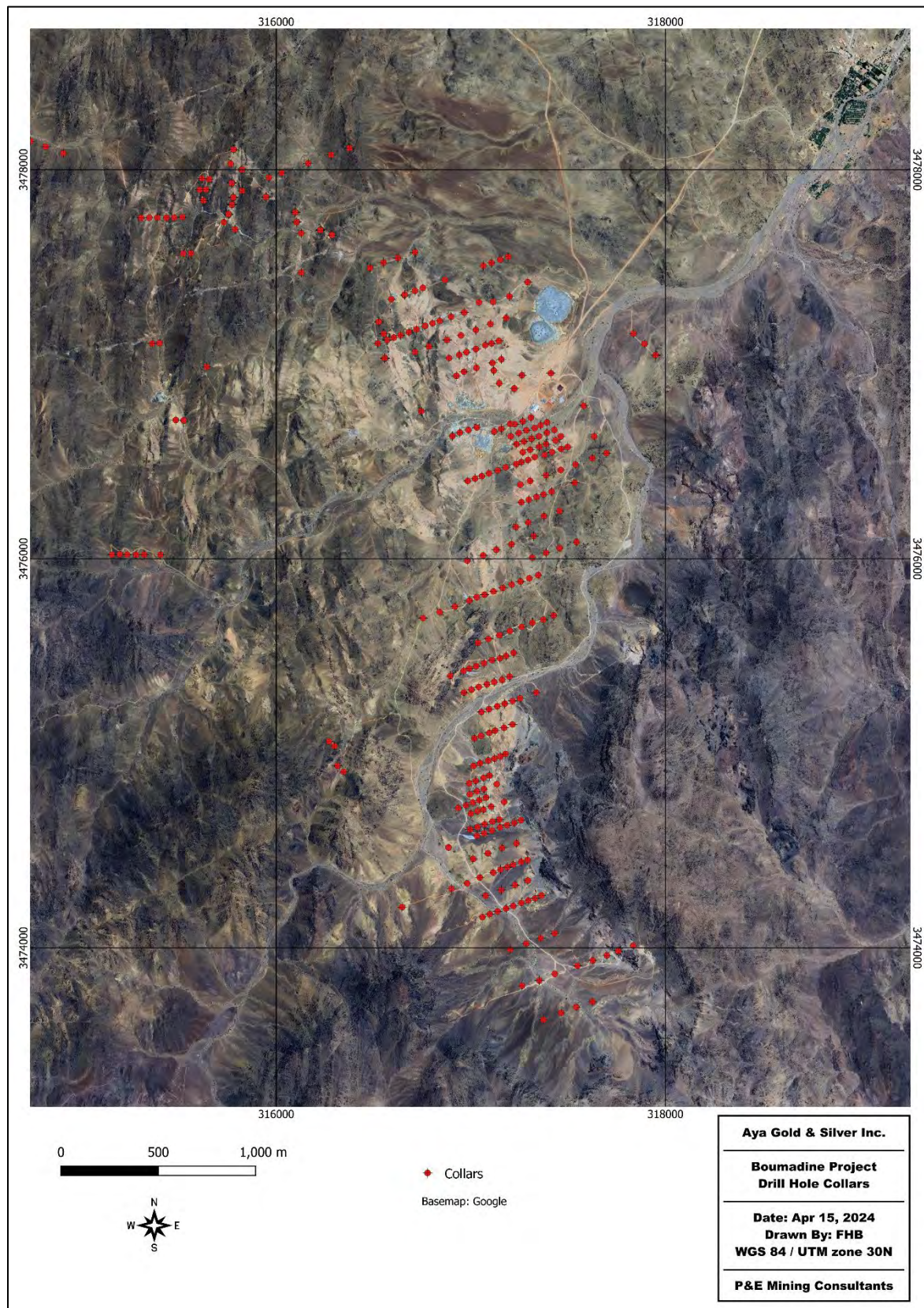
Aya supplied drill hole data as .csv format tables. The supplied drill hole tables included collar, survey, assay, lithology and bulk density data. Assay data included Au g/t, Ag g/t, Cu%, Pb% and Zn% grades. A total of 367 drill holes were available for Mineral Resource modelling, with a total length of 107,675.65 m. The drilling extends ~5 km along strike (Figure 14.1 and Appendix A).

The coordinate system used is WGS 84 UTM Zone 30N (EPSG 32630). Aya supplied a Digital Terrain Model for the Project. Aya geologists also developed interpreted wireframes of the identified mineralized structures at Boumadine.

Industry standard validation checks were carried out on the supplied databases, and minor corrections made where necessary. The Authors typically validate a Mineral Resource database by checking for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, and missing interval and coordinate fields.

No significant errors were noted with the supplied databases. The Authors consider the drill hole database is suitable for Mineral Resource estimation.

FIGURE 14.1 DRILL HOLE PLAN VIEW



Source: This Study

14.2 ECONOMIC CONSIDERATIONS

For the Mineral Resource model, Aya selected the economic parameters listed in Table 14.1.

TABLE 14.1 ECONOMIC PARAMETERS					
NSR ASSESSMENT - BOUMADINE PROJECT Mar 27/24					
Zn Concentrate	Metal Price	Concentrate	Smelter	Refining Chg.	Average Ore Grade
Element	\$US/lb or oz	Recovery	Payable	\$US/lb or oz	% or g/t
Pb	\$1.00	2.17%	0%	\$0.00	1.00%
Zn	\$1.20	72.00%	85%	\$0.00	1.00%
Au	\$1,900	1.73%	0%	\$4.00	1.00
Ag	\$21.00	5.54%	0%	\$4.00	1.00
Concentration Ratio		31.04	3.22%		
Trucking/Storage/Ship Loading US \$/t per WMT		\$50			
Ocean Freight /Unloading US\$/t per WMT		\$0			
Smelter Treatment Charge US \$/t per DMT incl \$6 Penalty		\$156			
Humidity Factor		8.0%			
NSR					
Element	US\$/tonne				
Pb	\$0.00				
Zn	\$16.19				
Au	\$0.00				
Ag	\$0.00				
Subtotal	\$16.19				
Less Smelter Charges US \$/t	\$5.03				
Less Shipping & Handling Charges US \$/t	\$1.74				
Subtotal NSR US \$/tonne of ore from Zn Concentrate	\$9.43				
Pb Concentrate	Metal Price	Concentrate	Smelter	Refining Chg.	Average Ore Grade
Element	\$US/lb or oz	Recovery	Payable	\$US/lb or oz	% or g/t
Pb	\$1.00	84.50%	95%	\$0.00	1.00%
Cu	\$4.00	75.30%	95%	\$0.00	1.00%
Zn	\$1.20	3.93%	0%	\$0.00	1.00%
Au	\$1,900	26.50%	95%	\$30.00	1.00
Ag	\$21.00	53.10%	95%	\$1.50	1.00
Concentration Ratio		32.91	3.04%		
Trucking/Storage/Ship Loading US \$/t per WMT		\$50			
Ocean Freight /Unloading US\$/t per WMT		\$0			
Smelter Treatment Charge US \$/t per DMT incl \$45 Penalty		\$175			
Humidity Factor		8.0%			
NSR					
Element	US\$/tonne				
Pb	\$17.70				
Cu	\$63.08				
Zn	\$0.00				
Au	\$15.14				
Ag	\$0.32				
Subtotal	\$96.23				
Less Smelter Charges US \$/t	\$5.32				
Less Shipping & Handling Charges US \$/t	\$1.64				
Subtotal NSR US \$/tonne of ore from Pb Concentrate	\$89.27				
Pyrite Concentrate	Metal Price	Concentrate	Smelter	Refining Chg.	Average Ore Grade
Element	\$US/lb or oz	Department	Payable	\$US/lb or oz	% or g/t
Au	\$1,900	69.00%	85%	\$4.00	1.00
Ag	\$21.00	39.60%	91%	\$0.20	1.00
NSR					
Element	US\$/tonne				
Au	\$35.75				
Ag	\$0.24				
Subtotal	\$35.99				
Subtotal NSR US \$/tonne of ore from Pb Concentrate	\$35.99				
Per Tonne of Ore	NSR	Value Contribution	TC/Fr for each concentrate	Net NSR	
Element	US \$ / tonne			\$%/g/tonne	
Pb	\$17.70	11.9%	\$6.96	\$10.74	
Cu	\$63.08	42.5%		\$63.08	
Zn	\$16.19	10.9%	\$6.77	\$9.43	1.44 Mass Pull Factor
Au	\$50.89	34.3%		\$50.89	
Ag	\$0.56	0.4%		\$0.56	
Subtotal	\$148.42	100.0%	\$13.72	\$134.69	

NSR values were calculated as follows:

- $\text{NSR } \$/\text{t} = (\text{Pb}\% \times \$10.74) + (\text{Zn}\% \times \$9.43 \times 1.44) + (\text{Au g/t} \times \$50.89) + (\text{Ag g/t} \times \$0.56) + (\text{Cu}\% \times 63.08)$

AgEq values incorporated commodity prices and recoveries, and were calculated as follows:

- $\text{AuEq g/t} = \text{Au g/t} + \text{Ag g/t} \times 0.012 + \text{Cu \%} \times 1.277 + \text{Pb \%} \times 0.358 + \text{Zn \%} \times 0.366$

AuEq values incorporated commodity prices and recoveries, and were calculated as follows:

- $\text{AgEq g/t} = \text{Au g/t} \times 30.954 + \text{Ag g/t} + \text{Cu \%} \times 110.337 + \text{Pb \%} \times 30.954 + \text{Zn \%} \times 31.650$

14.3 MINERALIZED DOMAINS

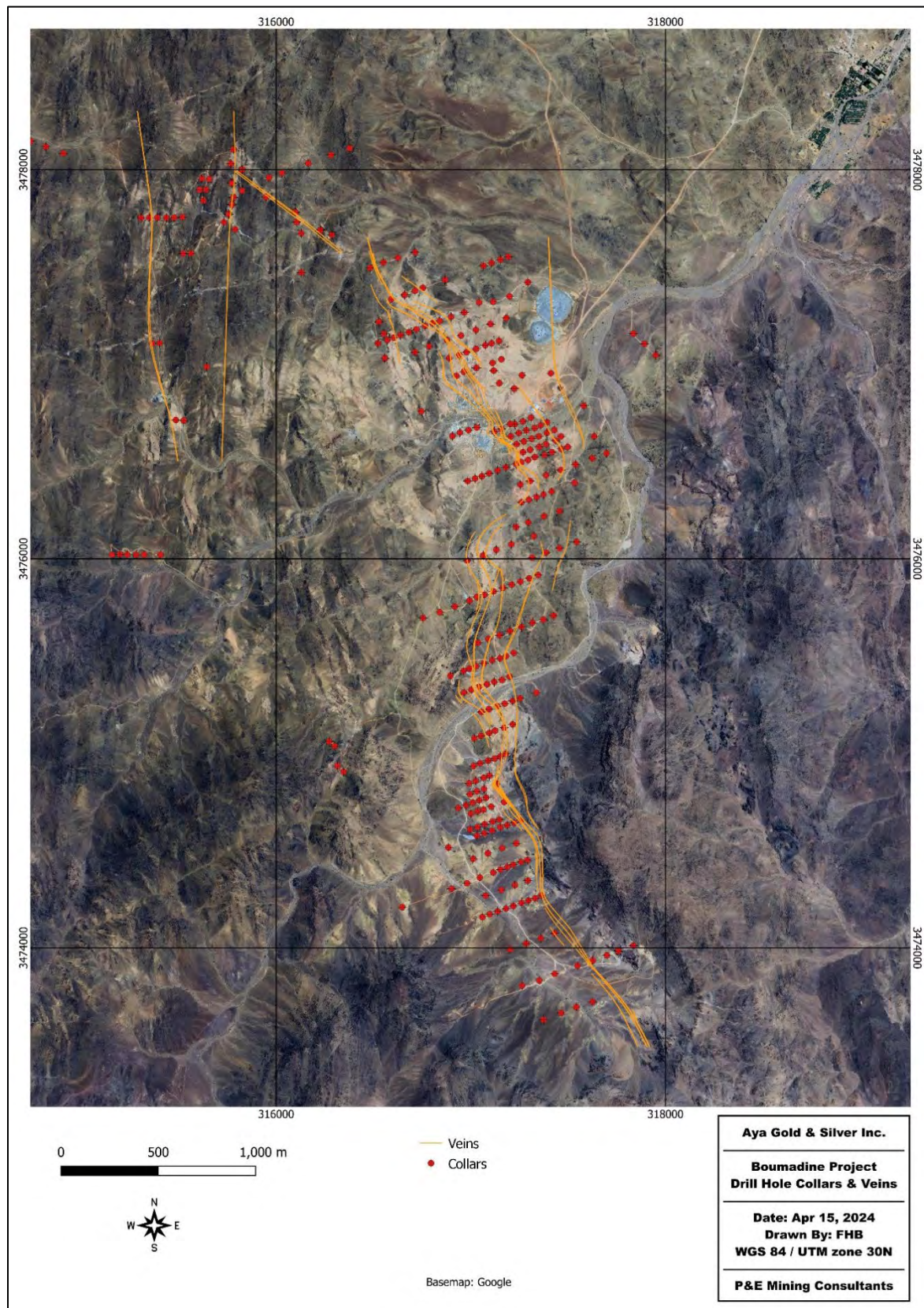
Interpreted mineralized wireframes (domains) were developed by Aya geologists based on logged drill holes, lithology and assay grades. Aya identified continuous zones of mineralization with a massive sulphide percentage of 70% or greater, and zones where the assay grades were ≥ 100 g/t AgEq and the massive sulphide percentage was $\geq 30\%$. The selected intervals include lower-grade mineralization where necessary to maintain continuity between drill holes. Three-dimensional wireframes linking drill hole cross-sections were constructed by Aya using the Leapfrog™ Radial Basis Function, with hanging wall and footwall surfaces snapped directly to the selected drill hole intercepts.

A total of 15 individual mineralized veins were wireframed (Figure 14.2 and Appendix B). The mineralized vein wireframes were used to back-tag the assay, bulk density and composite tables with unique rock codes (Table 14.2).

TABLE 14.2 MINERALIZED VEINS		
Vein	Rock Code	Strike Length (m)
East0	100	4,340
East1	150	4,350
East2	200	4,360
FarEast	250	4,290
FarFarEast	300	3,490
FarWest	350	300
Imarirren	400	1,780
Main	450	4,400
Nord	500	700
Nord2	550	740

TABLE 14.2 MINERALIZED VEINS		
Vein	Rock Code	Strike Length (m)
Tizi	600	1,800
West1	650	4,400
West2	700	4,020
West3	750	4,140
West4	800	2,700

FIGURE 14.2 MINERALIZED VEINS



Source: This Study

14.4 EXPLORATORY DATA ANALYSIS

The average nearest neighbor drill hole collar distance for the Aya drilling is 48 m. The average length of the drill holes is 293.4 m. Summary statistics for the drill hole assay data constrained by the modelled domains are listed in Table 14.3.

TABLE 14.3 CONSTRAINED ASSAYS SUMMARY STATISTICS						
Assay	Count	Average	St Dev	CoV	Minimum	Maximum
Ag (g/t)	3,554	54.69	115.51	2.11	1.00	3,200
Au (g/t)	3,554	1.53	3.20	2.09	0.02	74.48
Cu (%)	3,554	0.07	0.16	2.45	0.001	2.52
Pb (%)	3,554	0.67	1.35	2.02	0.01	24.40
Zn (%)	3,553	1.96	3.58	1.83	0.01	39.71

Note: St Dev = standard deviation, CoV = coefficient of variation.

Bulk density measurements were determined by Aya using the water immersion method on drill core samples. The average bulk density for the constrained sulphide material is 3.70 t/m³.

For the Mineral Resource Estimate a bulk density of 2.61 t/m³ was assigned to oxide and transitional blocks. For sulphide blocks the median sulphide bulk density was assigned for each modelled domain (Table 14.4). The Authors noted that 0.16% of the estimated blocks were assigned a zero Bulk Density.

TABLE 14.4 SUMMARY OF BULK DENSITY STATISTICS			
Domain	Count	Average Bulk Density (t/m³)	Median Bulk Density (t/m³)
East0	274	3.64	3.71
East1	761	3.69	3.73
East2	284	3.72	3.85
East3	490	3.41	3.41
FarFarEast	60	3.66	3.86
FarWest	72	3.74	3.66
Imarirren	159	3.90	4.11
Main	1,562	3.87	3.99
Nord	66	3.30	3.13
Nord 2	58	3.87	3.87
Tizi	88	3.89	4.21
West1	630	3.65	3.67
West2	464	3.58	3.49
West3	225	3.65	3.72

TABLE 14.4 SUMMARY OF BULK DENSITY STATISTICS			
Domain	Count	Average Bulk Density (t/m³)	Median Bulk Density (t/m³)
West4	64	3.62	3.74
Total	5,257	3.71	3.77

14.5 COMPOSITING

Constrained assay sample lengths within the defined mineralized domains range from 0.40 to 1.30 m, with an average sample length of 0.85 m and a mode of 1.00 m. A total of 31% of the constrained assay sample lengths equal 1.00 m.

Based on the distribution of assay sample lengths, Aya choose to composite all constrained assay samples to 1.00 m in order to ensure equal length sample support. Length-weighted composites were calculated within the defined mineralized veins. A small number of un-sampled intervals in the data were treated as null intervals.

The compositing process started at the first point of intersection between the drill hole and the mineralized vein intersected and was halted on exit from the mineralization. Downhole residual composites that were less than half the compositing length were merged with the preceding interval. The wireframes that represent the mineralized veins were used to back-tag a rock code attribute into the composite workspace.

The composite data were visually validated against the mineralized wireframes, and extracted for analysis and grade estimation. Summary composite statistics are listed in Table 14.5.

TABLE 14.5 COMPOSITE SUMMARY STATISTICS						
Assay	Count	Average	St Dev	CoV	Minimum	Maximum
Ag (g/t)	2,611	51.15	97.20	1.90	1.00	1,265.53
Au (g/t)	2,611	1.40	2.82	2.02	0.05	59.83
Cu (%)	2,611	0.06	0.14	2.30	0.01	1.99
Pb (%)	2,611	0.61	1.20	1.96	0.01	21.74
Zn (%)	2,611	1.82	3.24	1.79	0.01	35.55

Note: St Dev = standard deviation, CoV = coefficient of variation.

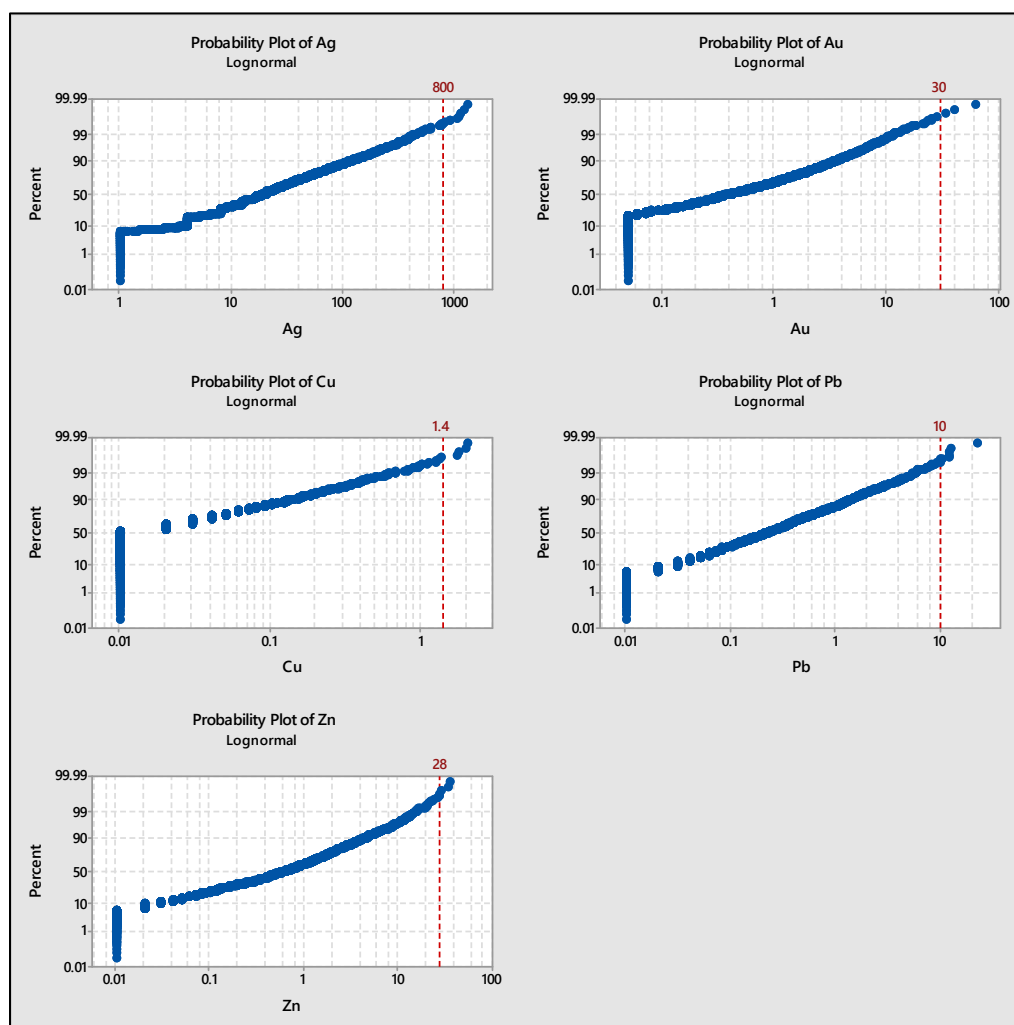
14.6 TREATMENT OF EXTREME VALUES

Aya selected capping thresholds based on the low Coefficient of Variation of the constrained composite grades and analysis of individual composite log-probability distributions for the

composite sample populations (Figure 14.3). Composites were capped to the defined threshold prior to grade estimation (Table 14.6).

TABLE 14.6 COMPOSITE CAPPING THRESHOLDS					
Veins	Capping Threshold (g/t)	Average Uncapped Value	Number Capped	Capping Percentile	Average Capped Value
Ag (g/t)	800	51.15	7	99.7	50.47
Au (g/t)	30.0	1.40	3	99.9	1.38
Cu (%)	1.40	0.06	4	99.8	0.06
Pb (%)	10.00	0.61	6	99.8	0.30
Zn (%)	28.00	1.82	3	99.9	1.81

FIGURE 14.3 LOG-PROBABILITY GRAPHS FOR COMPOSITES



Source: This Study

14.7 CONTINUITY ANALYSIS

Three-dimensional continuity analyses (variography) were conducted by Aya on the domain-coded uncapped composite data. In general, an acceptable semi-variogram could only be developed for the Main domain. The downhole variogram was viewed at a 1.0 m lag spacing (equivalent to the composite length) to assess the nugget variance contribution. Standardized spherical models were used to model the experimental semi-variograms (Figure 14.4).

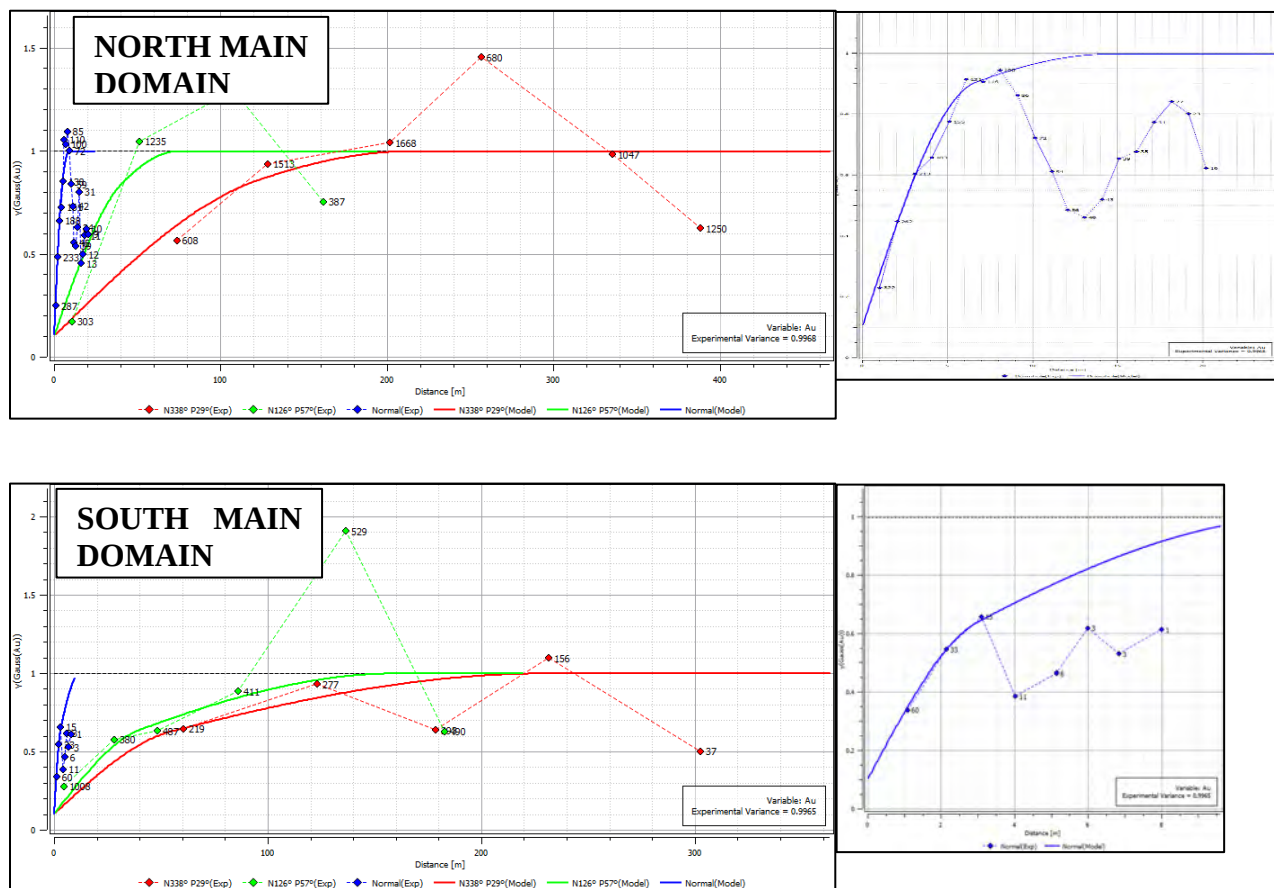
The experimental semi-variogram for the northern Main is listed in Table 14.7.

TABLE 14.7 NORTH MAIN ZONE SEMI-VARIOGRAM RESULTS							
North Main	Dip (°)	Dip Azimuth	Pitch	Ranges UVW (m)			Sill
Nugget							0.1
Spherical	75°	60°	30°	120	40	5	0.3032
Spherical	75°	60°	30°	215	75	9	0.5941

The experimental semi-variogram for the southern Main is listed in Table 14.8.

TABLE 14.8 SOUTH MAIN ZONE SEMI-VARIOGRAM RESULTS							
South Main	Dip (°)	Dip Azimuth	Pitch	Ranges UVW (m)			Sill
Nugget							0.1
Spherical	75°	60°	30°	55	40	3	0.3282
Spherical	75°	60°	30°	230	160	12	0.5702

FIGURE 14.4 MAIN ZONE SEMI-VARIOGRAMS



Source: This Study

14.8 BLOCK MODEL

Aya developed a rotated block model with the block model limits selected, in order to cover the extent of the mineralized structures, the potential open pit dimensions, and to reflect the general nature of the mineralized zones (Table 14.9). The block model consists of estimated Ag, Au, Cu, Pb and Zn grades, bulk density, block volume inclusion percentage and classification criteria. NSR, Au and Ag equivalent block values were subsequently calculated from the estimated grades of Au, Ag, Cu, Pb and Zn.

**TABLE 14.9
BLOCK MODEL SETUP**

Direction	Origin	Number of Blocks	Block Size (m)
Minimum X	316,600	950	2.5
Minimum Y	3,472,900	1,125	5.0
Minimum Z	540.5	193	5.0
Rotation	20° counter-clockwise		

14.9 GRADE ESTIMATION AND MINERAL RESOURCE CLASSIFICATION

Mineral Resource grade estimation and variography was undertaken by Aya using Isatis™ software, and reviewed by the Authors.

Aya assigned bulk density values for each domain based on the average bulk density values by domain. A bulk density of 2.61 t/m³ was assigned to oxide and transition blocks.

Block grades were estimated from capped composites with two passes. The orientation of the search ellipsoid was defined by the orientation of the modelled domains and observed grade trends. Composite samples were selected within an oriented 200 m x 130 m x 60 m ellipsoid for the first pass and a 400 m x 260 m x 120 m ellipsoid for the second pass. Search and grade estimation were constrained by the individual mineralized veins, which define hard boundaries for grade estimation.

For the Main domain, Ordinary Kriging (“OK”) was used for Au, with a minimum of four composites and a maximum of twenty composites on the first pass and a minimum of four composites and a maximum of eight composites on the second pass. For the remaining domains, Inverse Distance Squared (“ID²”) estimation was used, with a minimum of four composites and a maximum of twelve composites on the first pass and a minimum of four composites and a maximum of eight composites on the second pass. Approximately 40% of the modelled domains was estimated for grade.

Block grades were estimated separately for each domain and subsequently combined in one model space using the domain block inclusion percentages (see Appendices C, D, E and F).

The parameters used to define the classification limits included spatial analysis, drill hole spacing, and the observed continuity of the mineralization. Mineral Resources were classified algorithmically based on the local drill hole spacing within each individual mineralized domain. Grade blocks estimated in the first pass that used a minimum of two drill holes and an average distance between composites of <50 m were classified as Indicated, and all additional estimated blocks were classified as Inferred. Classification block model cross-sections and plans are presented in Appendix G.

14.10 MINERAL RESOURCE ESTIMATE

Open-pit Mineral Resources reported herein have been constrained within an optimized pit shell. The results from the optimized pit shell are used solely for the purpose of reporting Mineral Resources and include Indicated and Inferred Mineral Resources. Historical mining is minimal and poorly defined, and has not been depleted from the Mineral Resource Estimate.

The constraining pit optimization parameters were 50° pit slopes, US\$3/t for mineralized material mining, US\$2/t for waste mining, US\$89/t for processing, and US\$6/t for G&A, totalling US\$95/t for the NSR cut-off value (Figure 14.5). The optimized pit shell is shown in Appendix H.

The out-of-pit parameters used a US\$30/t mining cost, US\$89/t processing cost, and US\$6/t G&A totalling US\$125/t. The out-of-pit Mineral Resource grade blocks were quantified above the

US\$125/t NSR cut-off value, below the constraining pit shell, and within the constraining mineralized wireframes. Out-of-pit Mineral Resources have been reported that exhibit historical continuity and reasonable potential for extraction by the longhole mining method.

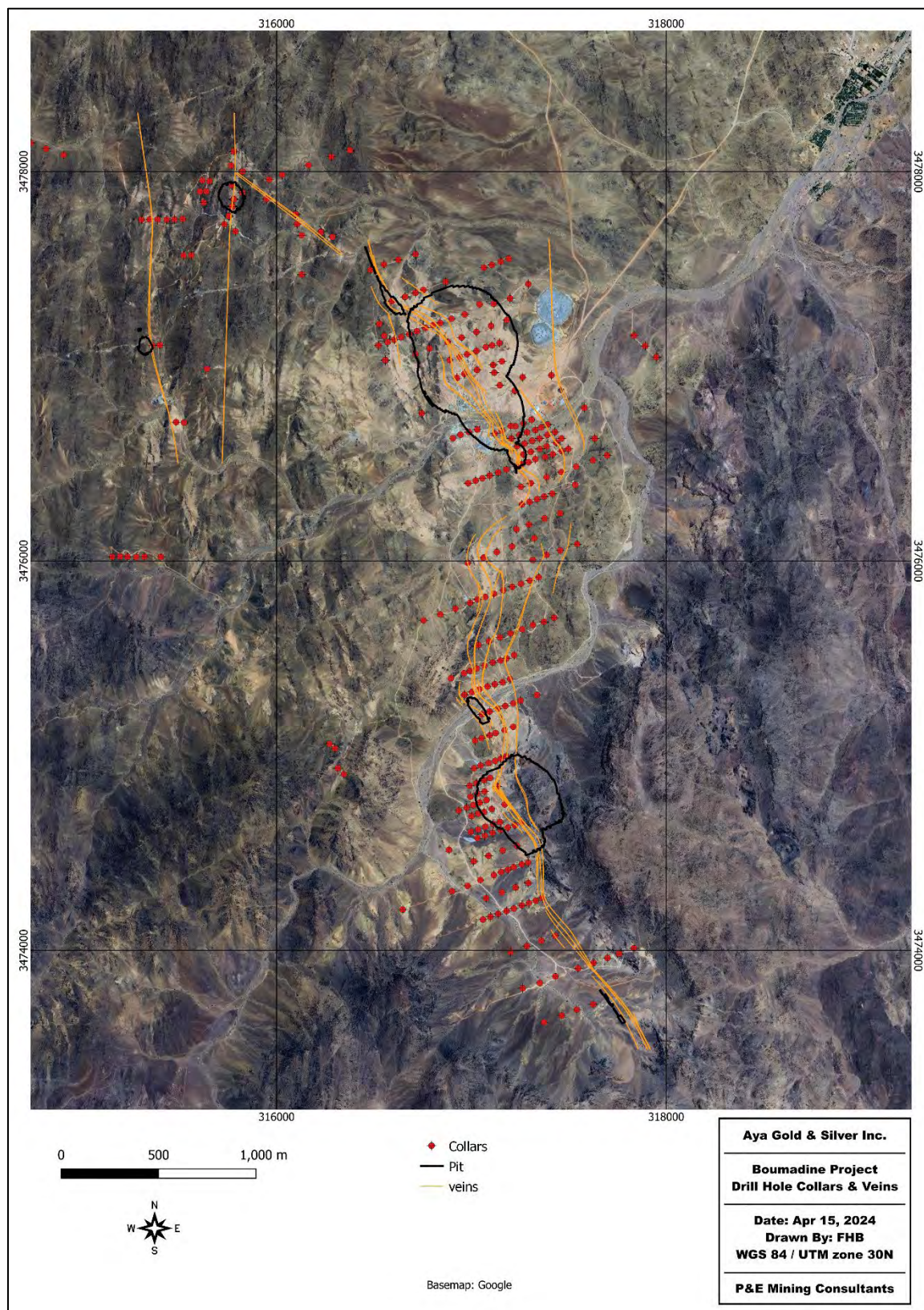
Highlights of the Boumadine Mineral Resource Estimate include:

- The Mineral Resource is amenable to conventional open-pit and underground mining methods;
- An Indicated Mineral Resource of 2.0 Mt grading 113 g/t Ag, 2.51 g/t Au, 4.32% Zn and 1.07% Pb containing an estimated 7.4 Moz of Ag, 165 koz of Au, 88 kt of Zn and 22 kt of Pb;
- An Inferred Mineral Resource of 23.6 Mt grading 85 g/t Ag, 2.62 g/t Au, 2.32% Zn and 0.84% Pb containing an estimated 64.7 Moz of Ag, 1.98 Moz of Au, 546 kt of Zn and 198 kt of Pb; and
- 41% of the Inferred Mineral Resource is pit-constrained above a US\$95/t NSR cut-off value, with the remaining 59% suitable for underground development and reported above an NSR cut-off value of US\$125/t.

The Mineral Resource has an effective date of February 23, 2024 (Table 14.10).

The sensitivity of the Mineral Resource to changes in cut-off grade was also calculated across a range of potentially economic NSR cut-offs (Table 14.11).

FIGURE 14.5 BOUMADINE PIT SHELL PLAN VIEW



Source: This Study

TABLE 14.10
MINERAL RESOURCE ESTIMATE ⁽¹⁻⁴⁾

Class	Cut-off (NSR US\$)	Tonnes (kt)	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)	Ag (koz)	Au (koz)	Cu (kt)	Pb (kt)	Zn (kt)	AgEq (g/t)	AuEq (g/t)	AgEq (koz)	AuEq (koz)
Pit-Constrained																
Indicated	95	995	145	2.71	0.17	1.58	5.92	4,647	87	2	16	59	634	7.40	20,299	237
Inferred	95	8,474	103	2.97	0.10	0.79	2.54	28,087	808	8	67	215	475	5.54	129,478	1,510
Out-of-Pit																
Indicated	125	1,046	82	2.33	0.11	0.58	2.79	2,751	78	1	6	29	402	4.69	13,533	158
Inferred	125	15,096	76	2.42	0.07	0.87	2.19	36,653	1,175	11	131	330	389	4.53	188,663	2,198
Total																
Indicated	95/125	2,042	113	2.51	0.14	1.07	4.32	7,398	165	3	22	88	515	6.01	33,832	395
inferred	95 /125	23,569	85	2.62	0.08	0.84	2.32	64,740	1,983	19	198	546	420	4.89	318,141	3,708

Notes:

1. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. There is no certainty that Mineral Resources will be converted to Mineral Reserves. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
3. Mineral Resources were estimated in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (the "CIM") Standards on Mineral Resources and Mineral Reserves Definitions (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council
4. Individual calculations in tables and totals may not sum due to rounding of original numbers.

TABLE 14.11
MINERAL RESOURCE ESTIMATE SENSITIVITY

Value (US\$)	Tonnes (kt)	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)	Ag (koz)	Au (koz)	AgEq (g/t)	AuEq (g/t)	AgEq (koz)	AuEq (koz)
Pit-Constrained Indicated Mineral Resources												
\$150.00	889	157	2.9	0.19	1.69	6.33	4,495	83	681	7.94	19,471	227
\$145.00	904	155	2.87	0.19	1.67	6.28	4,517	84	675	7.87	19,601	229
\$140.00	916	154	2.85	0.18	1.65	6.22	4,536	84	669	7.81	19,714	230
\$135.00	924	153	2.84	0.18	1.65	6.19	4,549	84	666	7.77	19,776	231
\$130.00	932	152	2.83	0.18	1.64	6.16	4,563	85	662	7.73	19,844	232
\$125.00	940	151	2.81	0.18	1.63	6.13	4,575	85	659	7.68	19,911	232
\$120.00	948	151	2.8	0.18	1.62	6.1	4,587	85	655	7.65	19,968	233
\$115.00	957	150	2.78	0.18	1.61	6.06	4,600	86	651	7.6	20,034	234
\$110.00	975	148	2.74	0.18	1.6	6.01	4,627	86	643	7.51	20,170	235
\$105.00	982	147	2.73	0.18	1.59	5.98	4,636	86	640	7.47	20,221	236
\$100.00	989	146	2.72	0.17	1.59	5.94	4,641	86	637	7.43	20,265	236
\$95.00	995	145	2.71	0.17	1.58	5.92	4,647	87	634	7.4	20,299	237
\$90.00	1,000	145	2.7	0.17	1.58	5.9	4,652	87	632	7.37	20,330	237
Pit-Constrained Inferred Mineral Resources												
\$150.00	5,982	124	3.87	0.13	0.77	2.47	23,882	745	575	6.7	110,554	1,289
\$145.00	6,111	123	3.82	0.12	0.77	2.47	24,165	750	569	6.63	111,727	1,303
\$140.00	6,247	122	3.76	0.12	0.77	2.46	24,447	756	562	6.56	112,920	1,317
\$135.00	6,387	121	3.71	0.12	0.77	2.46	24,747	761	556	6.48	114,116	1,331
\$130.00	6,545	119	3.64	0.12	0.77	2.46	25,075	766	549	6.4	115,431	1,346
\$125.00	6,729	118	3.57	0.12	0.77	2.46	25,433	772	540	6.3	116,919	1,364
\$120.00	6,952	116	3.48	0.12	0.77	2.47	25,827	778	531	6.19	118,680	1,384
\$115.00	7,259	113	3.37	0.11	0.78	2.48	26,331	786	519	6.05	121,011	1,411
\$110.00	7,564	110	3.26	0.11	0.79	2.49	26,833	792	507	5.91	123,269	1,438

TABLE 14.11
MINERAL RESOURCE ESTIMATE SENSITIVITY

Value (US\$)	Tonnes (kt)	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)	Ag (koz)	Au (koz)	AgEq (g/t)	AuEq (g/t)	AgEq (koz)	AuEq (koz)
\$105.00	7,878	108	3.15	0.11	0.79	2.51	27,301	798	496	5.78	125,505	1,464
\$100.00	8,201	105	3.05	0.1	0.79	2.53	27,736	803	484	5.65	127,722	1,490
\$95.00	8,474	103	2.97	0.1	0.79	2.54	28,087	808	475	5.54	129,478	1,510
\$90.00	8,711	101	2.9	0.1	0.78	2.55	28,383	812	467	5.45	130,929	1,527
Out-of-Pit Indicated Mineral Resources												
\$150.00	860	89	2.51	0.12	0.6	3.02	2,468	70	434	5.06	11,997	140
\$145.00	895	88	2.48	0.12	0.59	2.98	2,529	71	428	4.99	12,307	144
\$140.00	930	86	2.44	0.12	0.59	2.94	2,585	73	422	4.92	12,609	147
\$135.00	962	85	2.41	0.12	0.59	2.9	2,636	75	416	4.85	12,872	150
\$130.00	997	84	2.37	0.12	0.59	2.86	2,690	76	410	4.78	13,153	153
\$125.00	1,046	82	2.33	0.11	0.58	2.79	2,751	78	402	4.69	13,533	158
\$120.00	1,110	79	2.28	0.11	0.58	2.72	2,815	81	392	4.57	13,999	163
\$115.00	1,202	75	2.22	0.11	0.58	2.62	2,888	86	379	4.42	14,649	171
\$110.00	1,250	73	2.18	0.1	0.58	2.58	2,944	88	373	4.34	14,983	175
\$105.00	1,288	72	2.15	0.1	0.58	2.56	2,988	89	368	4.29	15,236	178
\$100.00	1,322	71	2.12	0.1	0.58	2.54	3,030	90	364	4.24	15,452	180
\$95.00	1,352	71	2.09	0.1	0.58	2.52	3,067	91	360	4.19	15,637	182
\$90.00	1,352	71	2.09	0.1	0.58	2.52	3,067	91	360	4.19	15,637	182
Out-of-Pit Inferred Mineral Resources												
\$150.00	10,846	84	2.85	0.08	0.91	2.25	29,359	995	439	5.11	153,068	1,783
\$145.00	11,525	82	2.78	0.08	0.9	2.22	30,503	1031	429	5	159,110	1,854
\$140.00	12,169	81	2.71	0.08	0.89	2.21	31,662	1060	421	4.91	164,749	1,920
\$135.00	12,960	79	2.62	0.08	0.89	2.2	33,068	1093	412	4.8	171,489	1,998
\$130.00	13,867	78	2.53	0.07	0.88	2.2	34,627	1129	401	4.68	178,959	2,085
\$125.00	15,096	76	2.42	0.07	0.87	2.19	36,653	1175	389	4.53	188,663	2,198

TABLE 14.11
MINERAL RESOURCE ESTIMATE SENSITIVITY

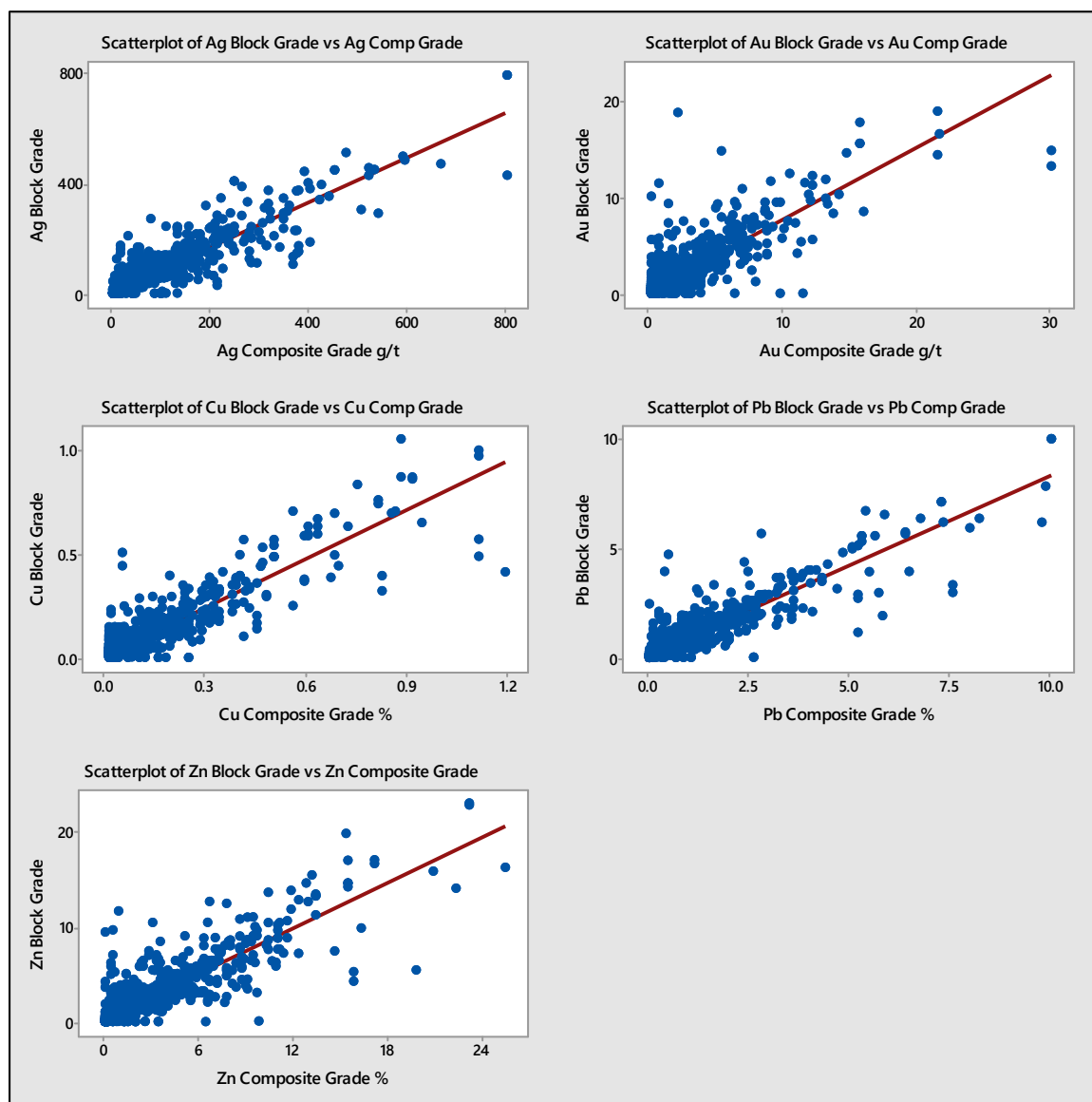
Value (US\$)	Tonnes (kt)	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)	Ag (koz)	Au (koz)	AgEq (g/t)	AuEq (g/t)	AgEq (koz)	AuEq (koz)
\$120.00	16,295	74	2.33	0.07	0.85	2.17	38,554	1220	377	4.4	197,736	2,304
\$115.00	17,362	72	2.26	0.07	0.83	2.13	40,051	1263	368	4.29	205,358	2,393
\$110.00	18,602	70	2.19	0.07	0.82	2.09	41,635	1310	358	4.17	213,877	2,492
\$105.00	20,004	67	2.12	0.06	0.79	2.03	43,277	1366	347	4.04	222,949	2,598
\$100.00	21,322	66	2.05	0.06	0.78	1.99	45,076	1408	337	3.93	231,202	2,694
\$95.00	22,339	65	2	0.06	0.77	1.96	46,343	1439	330	3.85	237,283	2,765
\$90.00	23,954	63	1.92	0.06	0.75	1.93	48,656	1479	320	3.73	246,547	2,873

14.11 VALIDATION

The block model was validated visually by the inspection of successive cross-section lines, in order to confirm that the block models correctly reflect the distribution of high-grade and low-grade values (see Appendices).

An additional validation check was completed by comparing the correlation of the average grade of the composites within a block to the corresponding estimated block grade (Figure 14.6).

FIGURE 14.6 COMPOSITE GRADE VERSUS BLOCK GRADE SCATTERPLOTS



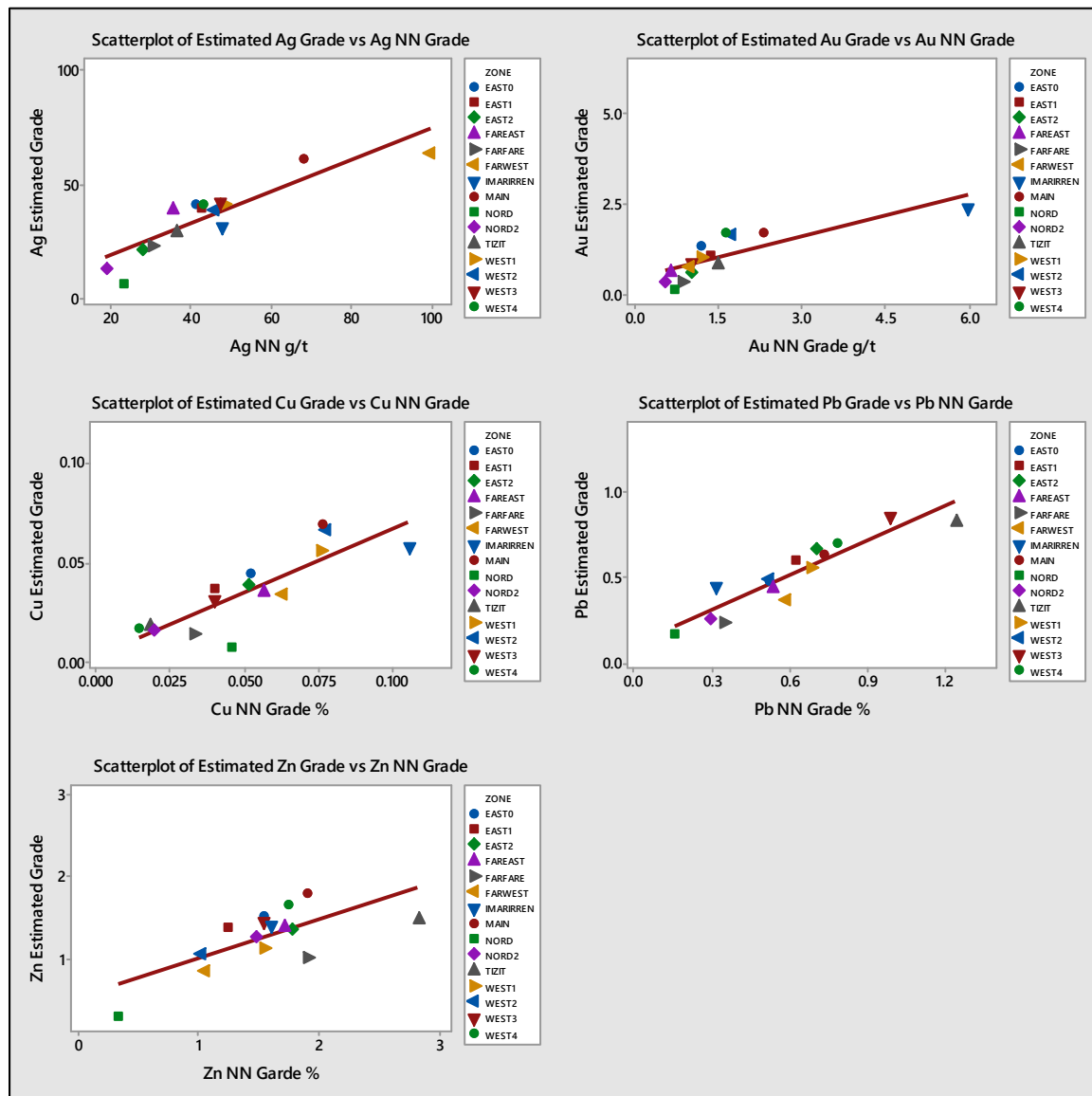
Source: This Study

As a further check on the model the average estimated block grades was compared to a Nearest Neighbour block model grade generated by the Authors, and to the average capped composite grade and declustered composite grade (Table 14.12 and Figure 14.7).

TABLE 14.12 GRADE BLOCK MODEL CHECK				
Grade Element	Composite Average	Declustered Composite Average	Block Average	NN Block Average
Ag (g/t)	51.15	50.38	50.67	55.02
Au (g/t)	1.40	1.38	1.40	1.75
Cu (%)	0.06	0.06	0.06	0.07
Pb (%)	0.61	0.66	0.61	0.68
Zn (%)	1.82	1.78	1.65	1.82

Note: NN = Nearest Neighbour

FIGURE 14.7 NEAREST NEIGHBOUR GRADE VERSUS BLOCK GRADE SCATTERPLOTS



Source: This Study

The Authors consider the validation results to be acceptable for linear estimation.

15.0 MINERAL RESERVE ESTIMATES

This section is not applicable to this Report.

16.0 MINING METHODS

This section is not applicable to this Report.

17.0 RECOVERY METHODS

This section is not applicable to this Report.

18.0 PROJECT INFRASTRUCTURE

This section is not applicable to this Report.

19.0 MARKET STUDIES AND CONTRACTS

This section is not applicable to this Report.

20.0 ENVIRONMENTAL STUDIES, PERMITS, AND SOCIAL OR COMMUNITY IMPACTS

20.1 ANALYSIS OF THE LEGISLATIVE AND REGULATORY FRAMEWORK

20.1.1 Environmental and Social Impact Assessment

The Boumadine Project may require several permits from the Moroccan Government, and the requirement to carry out an Environmental and Social Impact Assessment (“ESIA”) by the Moroccan Law No. 12-03 on Environmental Impact Assessments. The ESIA will establish the comprehensive regulatory framework for the Project.

The ESIA in Morocco includes:

- An overall description of the initial state of the site likely to be affected by the Project, including its biological, physical, and human components;
- A description of the Project's main components, characteristics and implementation stages, including manufacturing processes, the nature and quantities of raw materials and energy resources used, liquid, gaseous and solid discharges, and waste generated by the Project's implementation or operation;
- An assessment of the positive, negative and harmful impacts of the Project on the biological, physical and human environment that may be affected during the implementation, operation or development phases, based on the terms of reference and guidelines provided for this purpose; the measures envisaged by the petitioner to eliminate, reduce or compensate for the harmful consequences of the Project on the environment, as well as measures to enhance and improve the positive impacts of the Project;
- An environmental monitoring and follow-up program for the Project, together with the training, communication and management measures envisaged to ensure implementation, operation, and development in accordance with the technical specifications and environmental requirements adopted by the study;
- A concise presentation of the legal and institutional framework for the Project and the building in which it will be implemented and operated, and the projected costs of the Project;
- A brief note summarizing the content and conclusions of the environmental impact study; and
- A simplified summary for the public of the information and main data contained in the study.

An environmental acceptability decision must be made before any project in Morocco that is subject to an environmental impact assessment can be approved. This decision constitutes one of

the documents in the environmental acceptability application submitted with a view to obtaining authorization for the Project. Acceptability is given by the Comité Régional d'Investissement ("CRI"), a regional committee, or the Comité National, a national committee, depending on the size of the investment.

A public enquiry is held for every project that is subject to an environmental impact assessment. The purpose of this enquiry is to enable the population concerned to find out about the possible impact of the project on the environment and to gather their comments and proposals. These comments and proposals are taken into consideration when the environmental impact study is examined.

Aya intends to start baseline data collection and studies in 2024. A tendering process will be organized in Q1 2024, and the selection of the bidder and start of works is planned for Q2 2024.

The assessment of impacts will only be possible when all the various infrastructures and processes have been identified for the Project, which is likely to happen at a later stage in its life cycle. Impact assessment is typically done in parallel to the Feasibility Study stage.

20.1.2 Land Title

The Boumadine Project is a joint-venture between the ONHYM (15%) and Aya (85%). The ONHYM was in charge of the Property until the acquisition in 2013; however, since then no further development have been made. It is understood that the land is held under the collective land status.

In Morocco, collective lands are estimated at 15,620,000 ha. These lands are mainly used for grazing, but also includes arable land, forests, quarries forests, quarries and land in urban and peri-urban areas. The number of traditional communities range from 4,500 to 5,500 ethnic groupings, comprising almost 2.5 million collectives. The legal status of collective lands is set out in a dahir dating from 1919 (Zirari-Devif, 2011).

A national program was started in 2021 to identify land rights with the specific intent to formalize land ownership in collective lands. These rights are managed by the Direction des Affaires Rurales (DAR), part of the Ministry of the Interior.

Aya will establish communication with the relevant authorities at the governorate at the Province of Errachidia, in order to commence the process of establishing land agreements between Aya and the landowners.

20.2 CORPORATE POLICIES

20.2.1 Health and Safety, Environment and Community Policy

Aya's Health and Safety, Environment and Community ("HSEC") Policy sets out clear parameters for governance during project development. Amongst other elements, the policy requires:

- To comply with all laws and regulations in force in the countries where Aya operates;
- To implement an environmental and social management system (“ESMS”) to identify, reduce or mitigate to the extent desired, risks in terms of sustainable development. This ESMS will include objectives, review and corrective actions allowing continuous improvement; and
- Where economic or physical displacement cannot be avoided, adhere to IFC Performance Standard 5, including formal consultation throughout the process and seeking to improve the situation of households and communities.

20.2.2 Tailings Policy

Aya has developed a Tailings Policy, which commits to design, govern, and manage TSFs in line with best industry practice, following relevant guidelines such as those provided by the International Commission on Large Dams (“ICOLD”), Australian National Committee on Large Dams (“ANCOLD”), and Canadian Dam Association (“CDA”). Aya will work towards aligning its practices with the GISTM, which represents industry best practices.

20.2.3 Mine Closure

Asset closure management is an integral part of the life of mine (“LoM”). As per Aya’s HSEC Policy, Aya commits to developing a Mine Closure Management Plan for each of its projects, from the earliest stage of Feasibility Studies and updating the Plan regularly during the LoM to ensure that it is adapted and contextualized. In collaboration with its stakeholders, reclamation planning entails an extensive analysis of land use options, environmental factors, community development concerns and objectives, and measurable performance targets.

Aya will progressively carry out reclamation as part of its commitment to restore its sites to a healthy environment. Aya begins restoring disturbed land as soon as it is no longer needed, using best available techniques and developing context-specific measures. During the LoM, Aya strives to develop local capacity and collaborate on economic diversification through our community investment programs. Stakeholder engagement will include closure-specific topics in the run-up to closure, and Aya will complement their social baseline with a social closure impact assessment.

20.2.4 Sustainability Framework

Aya’s drive for sustainability involves adopting a precautionary approach and implementing and working on the continuous improvement of its Environmental and Social Management System (“ESMS”).

The precautionary approach is the process for investigating, addressing and mitigating how the Corporation’s actions could impact the environment and host communities.

The ESMS is a set of policies, plans, programs, procedures and tools based on best practice from the International Finance Corporation (“IFC”) Performance Standards and the European Bank for Reconstruction and Development (“EBRD”) that will help the Corporation monitor its status and

progress in upholding its many legal, social and environmental responsibilities. The ESMS incorporates a 'Plan, Do, Check, Act' process, thereby encouraging continuous improvement in sustainability management, and is based on the ISO 14001 environmental standard and on the ISO 45001 occupational H&S standard. Aya's key HSEC policies are posted on its website (www.ayagoldsilver.com).

21.0 CAPITAL AND OPERATING COSTS

This section is not applicable to this Report.

22.0 ECONOMIC ANALYSIS

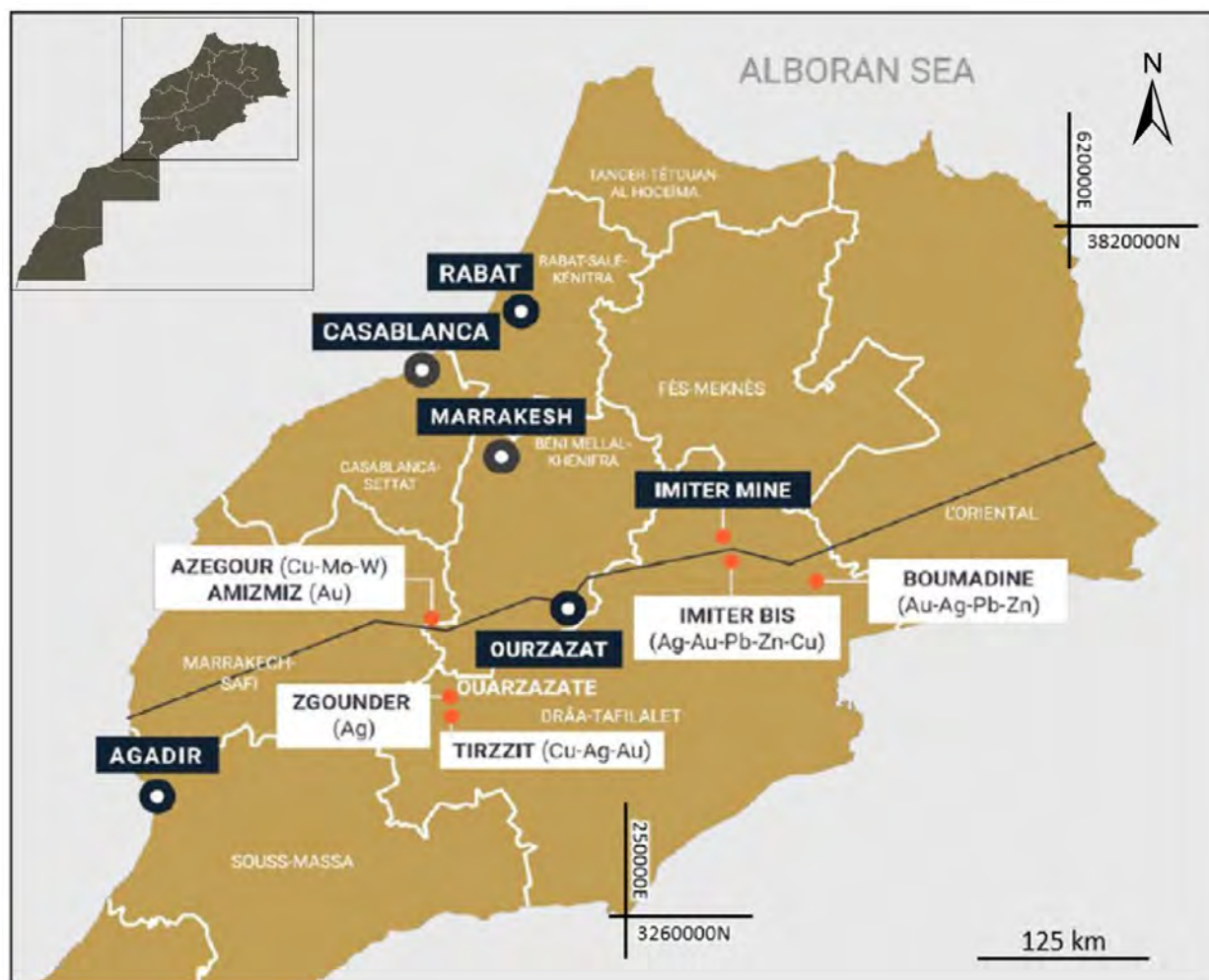
This section is not applicable to this Report.

23.0 ADJACENT PROPERTIES

Several vein occurrences of Ba, Pb, Cu, and Zn that vary in size and thickness are recognized regionally. Some of these veins are subject of artisanal exploitation by small Moroccan companies.

Boumadine is regionally surrounded by several mineral deposits that have been recently exploited, are currently active, or are under development. The largest deposit is at the Imiter Silver Mine. Imiter is a major silver deposit that is owned by the Moroccan mining company Managem. The Imiter Mine is located on the north side of the Saghro Massif, ~80 km west of the Boumadine Property (Figure 23.1).

FIGURE 23.1 LOCATION OF THE IMITER MINE



Source: Aya corporate presentation dated April 2024

The Author has not independently verified this information and this information is not necessarily indicative of the mineralization on the Boumadine Property that is the subject of this Report.

24.0 OTHER RELEVANT DATA AND INFORMATION

To the best of the Authors' knowledge there are no other relevant data, additional information or explanation necessary to make the Technical Report understandable and not misleading.

25.0 INTERPRETATION AND CONCLUSIONS

The Boumadine Property is located in the Province of Errachidia, in the eastern part of the Kingdom of Morocco. Aya's Property in the Boumadine area consists of four mining permits and ten exploration permits totalling 141 km² in size. All of the mining permits and exploration permits are in good standing as of the effective date of this Report. Mining Permit LE-383661 (31.7 km²) covers the historical Boumadine Mine and the updated Mineral Resources.

Aya (Maya Gold & Silver at the time of the Acquisition Agreement) and ONHYM signed an agreement on October 9, 2012, for the acquisition of the Boumadine polymetallic deposit. Under the terms of Agreement, Aya acquired 85% of the Boumadine Project (permit LE-383661) for total cash payments of (MAD 28,000,000, ~US\$2,800,000). A new Moroccan company, Boumadine Global Mining ("BGM"), was created with Aya (85%) and ONHYM (15%) as shareholders. The mining title of the Boumadine Property was transferred to BGM by ONHYM.

Aya and ONHYM signed an agreement for the development and exploitation of the Boumadine polymetallic deposit. The participation of ONHYM is subject to dilution if they fail to invest 15% in the budget after Aya matches all the previous investment from ONHYM. ONHYM will receive a 3% royalty on BGM sales revenue from the first year of operation. Aya will receive a management fee equal to 2.75% of the revenue from BGM.

The Boumadine Property is located in the Anti-Atlas Mountains. The Property is accessible via the National Highway 10 (N10), ~220 km east-northeast from Ouarzazate City or ~70 km southwest from Errachidia City. The nearest town is Tinejdad, ~16 km north. The Property is accessible from Tinejdad by all-terrain vehicle on a paved and gravel road. The Property has a Saharan desert climate. Nevertheless, field work at Boumadine can be completed year-round. The nearest power line to the Property is 3.8 km away.

On the Property, there are many dirt roads and paths that lead to former shafts and other remnants of the historical mining infrastructure. The facilities on-site include three generators for power, an office, drill core shack, the Afrilabs sample preparation laboratory, drill contractor workshop, and drill contractor camp. Water is currently sourced from an historical, underground workings and from wells. The topography of the area is marked by ridges and hills mostly, with altitude ranging between 980 and 1,300 m asl. The site and its surroundings exhibit characteristics typical of a desert landscape, with vast expanses of arid and rocky terrain. Vegetation in the Boumadine area consists mainly of desert plants.

The Boumadine site is in close proximity to the Ziz River, which flows through Tinejdad. The Ziz River Valley contributes to the oasis environment with palm groves, particularly date palms. Nomads pass by the Boumadine Property with their livestock of camels or goats. Historical artisanal mining activities have been recognized at several places on the Boumadine Property. Historical extraction work focused on barite and lead veins.

Mine workers and other personnel are available from Tinejdad. Errachidia has an international airport with access to Casablanca and it is also accessible by road from Marrakech, ~420 km away. Food and limited accommodation are available at Tinejdad; Errachidia offers greater diversity in supplies. Special items must be purchased from Ouarzazate or Marrakech.

The historical Boumadine Mine is one of the oldest known mines in the Kingdom of Morocco. It was probably exploited by the Portuguese in the 15th and 16th centuries. Between 1956 and 1998, exploration and mining activities in the Boumadine area were completed by the BRPM, with and without partners. These activities included mineral prospecting, geophysical surveys, drilling, mineralogical studies, mineral resource estimations, metallurgical testwork, engineering and economic studies, shaft excavation, and underground development and mining. Underground mining from 1986 to 1992 produced 261,485 t of mineralized material from four levels for mineral processing on-site.

In 2013, Maya Gold and Silver Inc acquired the Project through a Joint Venture with the ONHYM. Between 2013 and 2016, Maya completed surface work that included grab sampling and surface mapping of the historically known mineralized structures. In 2017, Maya completed a drilling program to confirm the historical mineral resources. Fourteen drill holes were completed totalling 3,158 m on the Central, South and Tizi Zones. In 2018, a sampling campaign was completed over two historical tailings deposits. Between 2018 and 2020, Maya completed 9,503 m of diamond drilling over South, Central, North, Imariren and Tizi Zones. In addition, Maya completed a drone survey over part of the Boumadine Property. Maya announced its name change to Aya in a Company press release dated July 31, 2020.

The Boumadine Property is located at the eastern end of the Anti-Atlas Mountain Range, which extends east-northeast to west-southwest, over >600 km, from the Atlantic Ocean in the west to the interior of the African plate in the east. The Boumadine polymetallic deposit (Ag, Au, Pb, Cu, Zn) is located on the northwest side of the Ougnat Massif (or Boutonnière). The geology of the Massif consists of a Neoproterozoic metasedimentary basement overlain unconformably by a Late Neoproterozoic volcano-sedimentary rock sequence and by Paleozoic lacustrine sedimentary and minor volcanic rocks. The basement consists of sandstone, pelites and greywackes that is intruded locally by granite, granodiorite, and diorite bodies. The volcano-sedimentary sequence consists of felsic and mafic volcanic rock units separated by volcano-sedimentary units.

The Tamerzaga-Timrachine Formation (TTF), which consists of ignimbrites, rhyodacite and andesite tuffs and volcanoclastics, hosts the mineralization at Boumadine. The felsic tuffs consist of angular to rounded cm-size felsic fragments, quartz eyes, plagioclase grains, and locally mafic fragments, and sits unconformably on mafic tuffs. Mafic tuffs consist of amphibole and fragments/clasts of sedimentary rocks. Mafic tuffs are interpreted as underwater-deposited volcanoclastic eruptives. The TTF is intruded by dolerite, microdiorite and andesite dykes. The Ougnat Massif area was subjected to Neoproterozoic shearing that generated regional-scale faults trending N30° and associated secondary fractures. The area has also been affected by a late-stage series of north-south extensional fractures that were subsequently reactivated by a compressive Hercynian tectonic event.

Two hydrothermal alteration events are recognized on the Property. The first alteration event affected the felsic tuff sequence as phyllic alteration (quartz-sericite-pyrite). Proximal to massive sulphide veins (1 to 5 m thick), there is an advanced clay alteration composed of kaolinite, pyrophyllite and vuggy silica. The second sequence of alteration affects mainly the underlying mafic tuffs and consists of propylitic alteration (epidote and chlorite). Near the veins, the alteration minerals are black chlorite, pyrophyllite and pyrite. The transition between these two alteration events is relatively sharp and consistent with the change in tuff composition.

Due to the extensive weathering to clay minerals, the Boumadine Deposit has a very light colour that contrasts with the surrounding landscape. The mantos, “chapeau de fer” or “iron cap” alteration extends from 20 to 50 m depth. The mantos consists principally of goethite and jarosite with sparse hematite and no lepidochrosite. This mineralogical assemblage indicates that the oxidation fluids were strongly acidic. In this case, Mn, Zn, Cd, Ni, Co, Pb are highly mobile in the acid and sulphur-rich fluids and are commonly leached at surface. However, Ag, Au, Ba, Sr and Pb are immobile and form stable sulphosalts. The hydroxyde-rich “mantos” has been nearly completely mined by artisanal workers for ochre and precious metals.

The Boumadine Deposit has been traced on surface and in drilling for ~5,200 m along strike. Strike direction varies from mainly northwest to northerly and dips vary from steeply northeast to steeply southwest. The Deposit consists of 15 mineralized domains that have been grouped into five separate zones. The South and Central Zones consist of seven stacked mineralized vein domains. From the south end of the South Zone to the north end of the Central Zone, these domains extend for 4,600 m along strike, up to 300 to 400 m across strike and as much as 1,000 m down-dip. The South Zone appears to be offset dextrally along a northeast-trending fault from the Central Zone. The north end of the Central Zone appears to be offset sinistrally along a northeast-trending fault from the North Zone. The North Zone consists of two closely-spaced mineralized vein domains. This Zone is 650 m long, 5 to 10 m in thickness and 500 m down-dip. It strikes northwest and dips steeply southwest. The North Zone appears truncated by the Imarinen Zone. The Imarinen Zone and the Tizi Zone are two sub-parallel, single mineralized vein domains that are 200 m apart in the south and 500 m apart in the north, strike northerly, and dip vertically. Each of these two zones has been traced for 1,000 m along strike and up to 600 m down-dip.

The Boumadine mineralized zones consist of 1 to 4 m-wide massive sulphide lenses/veins oriented N20°W and dipping 70° east. The massive sulphide veins (>70% sulphide) consist of pyrite, sphalerite, galena, arsenopyrite and chalcopyrite, with subordinate amounts of cassiterite, silver-rich sulphosalts, stannite, enargite, bismuthinite, native copper and bismuth. The main mineralization zone is surrounded by a 1 to 10 m thick halo of 10 to 30% disseminated pyrite and two types of veinlets: 1) quartz-carbonate-galena-sphalerite veinlets; and 2) massive pyrite veinlets. Geochemically, there is a strong positive correlation of gold with silver and copper and a weaker correlation of zinc with lead and molybdenum. The Boumadine Deposit is interpreted to have formed as an epithermal polymetallic deposit in a shallow submarine setting.

Exploration activities completed by Aya on the Boumadine Property since 2020 include surface trenching, satellite-based hyperspectral surveys, airborne geophysics, mineral prospecting, geological mapping, and grab sampling and assaying. These programs were successful in finding and confirming presence of mineralization on surface. Since May 2022, Aya completed 266 diamond drill holes totalling 89,475 m. The drilling programs focused on extending the mineralization of the North, Central, and South Zones and to test continuity among them. In addition, all historical drill holes from 2018 to 2021 were re-logged and resampled in 2023 for a total of 77 drill holes and 9,510 m of drill core.

Aya implemented and monitored a thorough QA/QC program for the drilling completed at the Boumadine from 2018 to 2024. Examination of QA/QC results for all recent sampling indicates no material issues with accuracy, contamination or precision in the data. It is the Author’s opinion that sample preparation, security and analytical procedures are adequate and that the data are of good quality and satisfactory for use in the current Mineral Resource Estimate. Verification of the

Boumadine Project data, used for the current Mineral Resource Estimate, has been undertaken by the Authors, including a site visit, due diligence sampling, verification of drill hole assay data from electronic assay files, and assessment of the available QA/QC data. The Authors consider that sufficient verification of the Project data has been undertaken and that the supplied data are of good quality and suitable for use in the current Mineral Resource Estimate.

For metal recoveries, Aya envisions a two-phase process based on recent metallurgical testwork completed by SGS Canada Inc. in 2023. Phase 1 is a flotation stage for recovery of Pb and Zn and partial recovery of Au and Ag. Phase 2 is an oxidation and leaching stage for recovery of Au and Ag. Oxidation using the Albion Process followed by cyanide leaching produced the highest precious metal recoveries. Total recoveries were 89% Ag, 85% Au, 85% Pb and 72% Zn. Next steps include continued refinement of the metallurgy testwork, particularly methods for oxidation of the pyrite concentrate, and evaluation of key reagents and input parameters.

The updated MRE of the Boumadine Deposit is amenable to conventional open-pit and to underground mining methods. The updated MRE for Boumadine contains an Indicated Mineral Resource of 2.0 Mt grading 113 g/t Ag, 2.51 g/t Au, 4.32% Zn and 1.07% Pb containing an estimated 7.4 Moz of Ag, 165 koz of Au, 88 kt of Zn and 22 kt of Pb, and an Inferred Mineral Resource of 23.6 Mt grading 85 g/t Ag, 2.62 g/t Au, 2.32% Zn, and 0.84% Pb containing an estimated 64.7 Moz of Ag, 1.98 Moz of Au, 546 kt of Zn and 198 kt of Pb. Pit-constrained Mineral Resources have been estimated within an optimized pit shell for the purpose of reporting Mineral Resources and includes Indicated and Inferred Mineral Resources. The pit-constrained Mineral Resources are reported using a NSR cut-off value of US\$95/t. Out-of-pit Mineral Resources are reported beneath the pit shell that exhibit historical continuity and reasonable potential for extraction by longhole mining methods. Out-of-pit Mineral Resources are reported using an NSR cut-off of US\$125/t. The Mineral Resource has an effective date of February 23, 2024. The sensitivity of the Mineral Resource to changes in cut-off grade was also calculated across a range of potentially economic NSR cut-offs.

The Mineral Resource Estimates have been classified with respect to CIM Standards as Indicated Mineral Resources and Inferred Mineral Resources, according to the geological confidence and sample spacing that currently define the Deposits, with Indicated Mineral Resources requiring <50 m spaced drill hole centres. All additional estimated grade blocks were classified as Inferred. The Authors are of the opinion that the current Mineral Resource Estimate meets the reasonable prospect of eventual economic extraction. The Authors have experience with other similar projects and are of the opinion that the cut-off grade and cost assumptions are reasonable.

The Boumadine Project may require several permits from the Moroccan Government, and the requirement to complete an Environmental and Social Impact Assessment (“ESIA”) by the Moroccan Law No. 12-03 on Environmental Impact Assessments. The ESIA will establish the comprehensive regulatory framework for the Project.

The Boumadine Property land is understood to be held under the collective land status. In Morocco, collective lands are used for grazing, farming, forests, quarries, and land in urban and peri-urban areas. The number of traditional communities ranges from 4,500 to 5,500 ethnic groupings, comprising almost 2.5 million collectives. The legal status of collective lands is set out in a dahir dating from 1919. A national program started in 2021 to identify land rights with the intent to formalize land ownership in collective lands. These rights are managed by the

Direction des affaires rurales, part of the Ministry of the Interior. Aya will establish communication with the relevant authorities at the governorate in the Province of Errachidia, in order to commence the process of establishing land agreements with the landowners.

Aya's Health and Safety, Environment and Community ("HSEC") Policy sets out clear parameters for governance during project development. The Policy requires: compliance with all laws and regulations in force in the countries where Aya operates; implementation of an environmental and social management system to identify, reduce or mitigate risks to sustainable development; and, where economic or physical displacement cannot be avoided, adherence to International Finance Corporation ("IFC") Performance Standard 5, including formal consultation throughout the process and seeking to improve the situation of households and communities.

Aya has developed a Tailings Policy that commits to design, govern, and manage tailings in-line with industry best practice, following guidelines such as those provided by the International Commission on Large Dams, Australian National Committee on Large Dams, and Canadian Dam Association. Aya will work towards aligning its practices with industry best practices.

As per its HSEC Policy, Aya commits to developing a Mine Closure Management Plan for each of its projects. In collaboration with its stakeholders, reclamation planning entails an extensive analysis of land use options, environmental factors, community development concerns and objectives, and measurable performance targets. Aya will progressively complete reclamation as part of its commitment to restore mine sites to a healthy environment. Aya begins restoring disturbed land as soon as it is no longer needed, using best available techniques and developing location-specific measures. During the life of mine ("LoM"), Aya strives to develop local capacity and collaborate on economic diversification through community investment programs. Stakeholder engagement will include specific topics in the lead-up to closure, and Aya will complement their social baseline with a social closure impact assessment.

Aya's drive for sustainability involves adopting a precautionary approach and implementing and working on the continuous improvement of its Environmental and Social Management System ("ESMS"). The precautionary approach is the process for investigating, addressing and mitigating how the Corporation's actions could impact the environment and host communities. The ESMS is based on best practice from the IFC Performance Standards and the European Bank for Reconstruction and Development that will help the Corporation monitor status and progress in upholding its legal, social and environmental responsibilities. The ESMS incorporates a 'Plan, Do, Check, Act' process, thereby encouraging continuous improvement in sustainability management, and is based on the ISO 14001 environmental standard and the ISO 45001 occupational H&S standard.

The Authors are not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that may materially affect the Mineral Resource Estimate. A material decrease in metal prices below those utilized for the current Mineral Resource Estimates or a significant increase in operating costs could materially affect the cut-off and average grades, and potentially result in a revised lower Mineral Resource Estimate tonnage.

26.0 RECOMMENDATIONS

Aya owns or controls 14 mining and exploration claims in the Boumadine Property area (141 km²) in the eastern part of the Kingdom of Morocco. Structurally-controlled mainly silver-gold polymetallic sulphide mineralization is currently defined in five separate zones along a 5.2 km strike length that together make-up the Boumadine Deposit. Additional mineralized zones and mineral occurrences are known in the area.

Additional expenditures are recommended by the Authors for the following activities:

- Drilling to advance Inferred to Indicated Mineral Resources;
- Drilling down-dip in order to develop additional Mineral Resources at depth;
- Airborne geophysical surveys to generate priority targets for future drill testing;
- Follow-up geological mapping, mineral prospecting, and assays;
- Development of a comprehensive bulk density model;
- Investigate grade capping thresholds by individual mineralized domain;
- Review grade anisotropy by individual mineralized domain; and
- Complete a Preliminary Economic Assessment of the Boumadine Project.

The Authors also recommend that Aya continue with the current QC protocol and monitor QC data on an ongoing basis, and continue refining the metallurgical work for improved recoveries.

The estimated cost of the recommended work program is US\$52.1M, which includes 10% contingency (without applicable taxes) (Table 26.1). Phase 1 of the recommended work program should be completed in 2024 and Phase 2 in 2025. Phase 2 is contingent on a successful Phase 1.

TABLE 26.1 RECOMMENDED PHASE 1 AND PHASE 2 PROGRAMS AND BUDGETS FOR 2024-2025				
Year	Item	Activity	Unit (m)	Cost Estimate (US\$)
Phase 1				
2024	Pre-Development	Preliminary Economic Assessment		2,000,000
	Exploration	Drilling (all-in costs)	120,000	19,137,000
		Airborne Geophysics (MobileMT Survey)		1,303,200
		Geological Mapping, Mineral Prospecting, Assays		206,920
		Administration and Management		2,594,000
	Sub-Total			25,240,000
	Contingency (10%)			2,524,000
	Total - Phase 1			27,764,000
Phase 2				
2025		Drilling (all-in costs)	120,000	19,137,000
		Administration and Management		3,000,000

TABLE 26.1
RECOMMENDED PHASE1 AND PHASE 2 PROGRAMS AND BUDGETS FOR 2024-2025

Year	Item	Activity	Unit (m)	Cost Estimate (US\$)
	Sub-Total			22,140,000
	Contingency (10%)			2,214,000
	Total - Phase 2			24,354,000

27.0 REFERENCES

- Abia, E.H., Nachit, H., Ibhi, A. and Baroudi, Z. 1999. Les Minéralisations Filoniennes à Pb, Zn et Cu de la Boutonnière de l'Ougnat. Relations avec les Déformations et Essai de Calage Chronologique. *Chronique Recherche Minière* 536, p. 83-95.
- Abia, E.H., Nachit, H., Christian Marignac, C., Abderrahmane, I. and Saadi, S.A. 2003. The Polymetallic Au–Ag-Bearing Veins of Bou Madine (Jbel Ougnat, eastern Anti-Atlas, Morocco): Tectonic Control and Evolution of a Neoproterozoic Epithermal Deposit. *Journal of African Earth Sciences* 36, 251-271.
- Ait Saadi. 1992. Contribution à l'étude de l'environnement paléovolcanique du Protérozoïque Supérieur (PIII) et du mode de genèse des concentrations polymétalliques (Zn, Pb, Cu, Ag, Au) de Bou Madine (Ougnat, Anti-Atlas oriental, Maroc). Unpublished Thesis, University of INPL, Nancy, p. 218.
- Alansari A. and Sagon JP. 1997. Le gisement de Tiout (Jebel Saghro, Anti-Atlas, Maroc): un système mésothermal polyphasé à sulfures-or et hématite-or dans une granodiorite potassique d'âge Protérozoïque. *Chron Recherche Minière* 527, 3-25.
- Alfieris, D. Voudouris, P. and Spry, P.G. 2013. Shallow submarine epithermal Pb-Zn-Cu-Au-Ag-Te mineralization on western Milos Island, Aegean Volcanic Arc, Greece: Mineralogical, geological and geochemical constraints. *Ore Geology Reviews* 53, 159-180.
- Boily, M. 2014. The Boumadine Polymetallic (Au, Ag, Zn, Pb, Cu) Deposit Errachidia Province, Kingdom of Morocco. Prepared for Maya Gold and Silver Inc. by Michel Boily, Ph.D., P.Geo. of Geon Ltee, dated April 2, 2014. 217 pages.
- Bouabdellah, M., Chekroun, F., Alansari, A. and Margoum, D. 2016. The Granitoid-Related Tiout Gold Deposit, Saghro Inlier, Eastern Anti-Atlas (Morocco): Neoproterozoic Mineralization by a polyphase Late-Magmatic to Hydrothermal System. In M. Bouabdellah and J.F. Slack (eds), *Mineral Deposits of North Africa*.
- Bouabdellah, M. and Levresse, G. 2016. The Boumâadine Polymetallic Ore Deposit, Eastern Anti-Atlas, Morocco: Evolution from massive Fe-As-Sn to epithermal Au-Ag-Zn±Cu mineralization in a Neoproterozoic resurgent Caldera environment. In *Mineral Deposits of North Africa*: Cham, Switzerland, Springer International Publishing, 133–142.
- BRPM. 1998. Gisement Polymétallique de Boumadine. *Géologie et États des Réserves*. BRPM, 30 p.
- Broothaers, L. 1977. Etude métallogénique du minerai de fer oolithique ordovicien de Imi N'Tourza (Sud Marocain). *Notes Mem. Serv. Geol. Maroc*, 263, 114 p.
- Chaker, M. 1997. *Géochimie et Métallogénie de la mine d'or de Tiout, Anti-Atlas oriental, Sud du Maroc*. Thèse doctorat de 3^{ème} cycle, Université de Québec à Chicoutimi, 276 p.

- Cheilletz, A., Levresse, G., Gasquet, D., Azizi Samir, M.R., Zyadi, R. and Archibald, D. 2002. The Imiter epithermal silver deposit: a giant Neoproterozoic epithermal mineralization in the Anti-Atlas, Morocco. *Mineralium Deposita* 37, 772–781.
- Choubert G. 1947. GEOLOGIE-L'ACCIDENT MAJEUR DE L'ANTI-ATLAS. C R Hebd Seances Acad Sci 224, 1172–1173.
- Choubert G. 1963. Histoire géologique du Précambrien de l'Anti-Atlas. Notes et Mémoires du Service Géologique. Rabat, Morocco.
- CINF Engineering Co. Ltd. 2017. Morocco Au Leaching Test Report
- Corbett, G. 2009. Anatomy of Porphyry-related Au-Cu-Ag-Mo Mineralised Systems: Some Exploration Implications: Australian Institute of Geoscientists North Queensland Exploration Conference, dated June 2009.
- El Hadi H, Simancas JF, Martínez-Poyatos D et al. 2010. Structural and geochronological constraints on the evolution of the Bou Azzer Neoproterozoic ophiolite (Anti-Atlas, Morocco). *Precambrian Res* 182: p. 1–14. Doi:10.1016/j.precamres.2010.06.011.
- Freton, R. 1988. Contribution à l'Étude Métallogénique ou District de Bou-Madine Anti-Atlas, Maroc, Environnement Tectonique et Concentrations Épithermales B.P.G.C à Ag et Au. Thèse de Doctorat, Institut National Polytechnique de Lorraine de Géologie Appliquée et de Prospection Minière, 63 pages.
- Hannington, M.D., De Ronde, C.E.J. and Petersen, S. 2005. Seafloor Tectonics and Submarine Hydrothermal Systems. *Economic Geology* 100th Anniversary Volume, 111-142.
- Hefferan K, Soulaïmani A, Samson SD *et al.* 2014. A reconsideration of Pan African orogenic cycle in the Anti-Atlas Mountains, Morocco. *Journal of African Earth Sciences* 98, 34–46. Doi:10.1016/j.jafrearsci.2014.03.007 Paile Y., Paris XI , Orsay, France, (1983) 290.
- Leistel, J.M. and Qadrouci, A. 1991. Le gisement argentifère d'Imiter (Protérozoïque supérieur de l'Anti-Atlas, Maroc). Contrôles des minéralisations, hypothèse génétique et perspectives pour l'exploration. *Chron Rech Min* 502, 5–22.
- Lelièvre, J. 2011. Essais minéralurgiques sur les résidus miniers du site Boumadine, Maroc – URSTM Rapport PU-2011-02-586.
- Levresse, G. 2001. Contribution à l'établissement d'un modèle génétique des gisements d'Imiter (Ag–Hg), Bou Madine (Pb –Zn –Cu –Ag–Au) et Bou Azzer (Co –Ni –As–Au –Ag) dans l'Anti-Atlas marocain. Unpubl. Ph.D. thesis, INPL, Nancy, France.
- Levresse, G., Cheilletz, A., Gasquet, D., Reisberg, L., Deloule, E., Marty, B. and Kyser, K. 2004. Osmium, sulphur, and helium isotopic results from the giant Neoproterozoic epithermal Imiter silver deposit, Morocco: evidence for a mantle source. *Chemical Geology* 207, 59-79.

Maya – Boumadine – 500 TPD Polymetallic Ore Flotation Processing Flow – PDF File Shandong Xinhai Mining Machinery, No date.

Mouttaqi, A., Rjimati, E.C. ., Maacha, L., Michard, A., Soulaïmani, A. and Ibouh, A. 2001. LES PRINCIPALES MINES DU MAROC/Main Mines of Morocco, NOTES ET MÉMOIRES DU SERVICE GÉOLOGIQUE N° 564 Volume 9.

Ouguir, H., Macaudière J., Dagallier G., Qadrouci A. and Leistel J.M. 1994. Cadre structural du gîte Ag-Hg d'Imiter (Anti-Atlas, Maroc); Implication métallogénique. Bull. Soc. Géol. Fr. 165, 233–248.

Paile, Y. 1983. Etude des séries volcaniques du Précambrien III de l'Ougnat (Anti-Atlas oriental, Maroc) et de ses minéralisations plombo-zincifères complexes associées (Gîte de Bou Madine), Thèse 3^{ème} cycle, Université Paris, Orsay. 290 pages.

Popov, A. and Belkasmi, A. 1983. Gisement de cuivre d'Oumjrane-Boukerzia. Rapport interne BRPM, 7 p. in Mouttaqi et al., 2001.

Rapport sur les essais en laboratoire sur les échantillons du résidu de la mine Boumadine au Maroc. Nichromet Extraction Inc. 31 mai 2013.

SGS. 2018a. Memo Report, June 20, 2018.

SGS. 2018b. An Investigation into the recovery of gold and silver from Boumâadine. Prepared for Maya Gold & Silver Inc - Project 16525-001A and 16525-02 – Final Report – December 18, 2018.

SGS. 2022. An investigation into Metallurgical Testing of a Main Composite from the Boumadine Deposit. Prepared for Aya Gold & Silver Inc – Project 18098-01 – Final Report – Revision 1. Dated July 14, 2022. 233 pages.

Sillitoe, R.H. 2010. Porphyry copper systems. *Economic Geology* 105, 3-41.

Soulaïmani A, Michard A, Ouanaimi H et al. 2014. Late Ediacaran–Cambrian structures and their reactivation during the Variscan and Alpine cycles in the Anti-Atlas (Morocco). *Journal of African Earth Sciences* 98, 94–112. Doi :10.1016/j.jafrearsci.2014.04.025.

28.0 CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON

WILLIAM STONE, PH.D., P.GEO.

I, William Stone, Ph.D., P.Geo, residing at 4361 Latimer Crescent, Burlington, Ontario, do hereby certify that:

1. I am an independent geological consultant working for P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Technical Report and Updated Mineral Resource Estimate of the Boumadine Polymetallic Project, Kingdom of Morocco”, (The “Technical Report”) with an effective date of May 8, 2024.
3. I am a graduate of Dalhousie University with a Bachelor of Science (Honours) degree in Geology (1983). In addition, I have a Master of Science in Geology (1985) and a Ph.D. in Geology (1988) from the University of Western Ontario. I have worked as a geologist for a total of 35 years since obtaining my M.Sc. degree. I am a geological consultant currently licensed by the Professional Geoscientists Ontario (License No 1569).

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- | | |
|--|--------------|
| • Contract Senior Geologist, LAC Minerals Exploration Ltd. | 1985-1988 |
| • Post-Doctoral Fellow, McMaster University | 1988-1992 |
| • Contract Senior Geologist, Outokumpu Mines and Metals Ltd. | 1993-1996 |
| • Senior Research Geologist, WMC Resources Ltd. | 1996-2001 |
| • Senior Lecturer, University of Western Australia | 2001-2003 |
| • Principal Geologist, Geoinformatics Exploration Ltd. | 2003-2004 |
| • Vice President Exploration, Nevada Star Resources Inc. | 2005-2006 |
| • Vice President Exploration, Goldbrook Ventures Inc. | 2006-2008 |
| • Vice President Exploration, North American Palladium Ltd. | 2008-2009 |
| • Vice President Exploration, Magma Metals Ltd. | 2010-2011 |
| • President & COO, Pacific North West Capital Corp. | 2011-2014 |
| • Consulting Geologist | 2013-2017 |
| • Senior Project Geologist, Anglo American | 2017-2019 |
| • Consulting Geoscientist | 2020-Present |

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 2 to 9 and 15 to 24, and co-authoring Sections 1, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Property that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 8, 2024

Signed Date: May 31, 2024

{SIGNED AND SEALED}

[William Stone]

William E. Stone, Ph.D., P.Geo.

CERTIFICATE OF QUALIFIED PERSON

FRED H. BROWN, P.GEO.

I, Fred H. Brown, of PO Box 332, Lynden, WA, USA, do hereby certify that:

1. I am an independent geological consultant and have worked as a geologist continuously since my graduation from university in 1987, specialising in gold, silver, base metals, PGEs, diamonds, industrial minerals and other commodities.
2. This certificate applies to the Technical Report titled “Technical Report and Updated Mineral Resource Estimate of the Boumadine Polymetallic Project, Kingdom of Morocco”, (The “Technical Report”) with an effective date of May 8, 2024.
3. I graduated with a Bachelor of Science degree in Geology from New Mexico State University in 1987. I obtained a Diploma in Datametrics in 1993 from the University of South Africa, a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand, and a Master of Science in Engineering (Civil) from the University of the Witwatersrand in 2005. In 2015 I obtained a Citation in Applied Geostatistics from the University of Alberta, and a Geographic Information Systems Certificate from the University of California San Diego in 2016. I am registered with the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Geoscientist (171602) and the Society for Mining, Metallurgy and Exploration as a Registered Member (4152172).

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- | | |
|---|--------------------------|
| • Mineral Resource Manager, AngloGold Corporation, South Africa | 1988-1997 |
| • Chief Geologist, De Beers Consolidated Mines, South Africa | 1997-2004 |
| • Consulting Geologist | 2004-2015 & 2016-Present |
| • Senior Geostatistician, Twin Creeks & Phoenix Mines, Nevada | 2015-2016 |
| • P&E Mining Consultants Inc. – Sr. Associate Geologist | 2008-Present |

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for co-authoring Sections 1, 14, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Property that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 8, 2024

Signed Date: May 31, 2024

{SIGNED AND SEALED}

[Fred H. Brown]

Fred H. Brown, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

JARITA BARRY, P.GEO.

I, Jarita Barry, P.Geo., residing at 9052 Mortlake-Ararat Road, Ararat, Victoria, Australia, 3377, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Technical Report and Updated Mineral Resource Estimate of the Boumadine Polymetallic Project, Kingdom of Morocco”, (The “Technical Report”) with an effective date of May 8, 2024.
3. I am a graduate of RMIT University of Melbourne, Victoria, Australia, with a B.Sc. in Applied Geology. I have worked as a geologist for over 17 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by Engineers and Geoscientists British Columbia (License No. 40875) and Professional Engineers and Geoscientists Newfoundland & Labrador (License No. 08399). I am also a member of the Australasian Institute of Mining and Metallurgy of Australia (Member No. 305397);

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- Geologist, Foran Mining Corp. 2004
- Geologist, Aurelian Resources Inc. 2004
- Geologist, Linear Gold Corp. 2005-2006
- Geologist, Búscore Consulting 2006-2007
- Consulting Geologist (AusIMM) 2008-2014
- Consulting Geologist, P.Geo. (EGBC/AusIMM) 2014-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Section 11, and co-authoring Sections 1, 12, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 8, 2024

Signed Date: May 31, 2024

{SIGNED AND SEALED}

[Jarita Barry]

Jarita Barry, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

D. GRANT FEASBY, P. ENG.

I, D. Grant Feasby, P. Eng., residing at 12,209 Hwy 38, Tichborne, Ontario, K0H 2V0, do hereby certify that:

1. I am currently the Owner and President of:
FEAS - Feasby Environmental Advantage Services
38 Gwynne Ave, Ottawa, K1Y1W9
2. This certificate applies to the Technical Report titled “Technical Report and Updated Mineral Resource Estimate of the Boumadine Polymetallic Project, Kingdom of Morocco”, (The “Technical Report”) with an effective date of May 8, 2024.
3. I graduated from Queens University in Kingston Ontario, in 1964 with a Bachelor of Applied Science in Metallurgical Engineering, and a Master of Applied Science in Metallurgical Engineering in 1966. I am a Professional Engineer registered with Professional Engineers Ontario. I have worked as a metallurgical engineer for over 50 years since my graduation from university.

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report has been acquired by the following activities:

- Metallurgist, Base Metal Processing Plant.
 - Research Engineer and Lab Manager, Industrial Minerals Laboratories in USA and Canada.
 - Research Engineer, Metallurgist and Plant Manager in the Canadian Uranium Industry.
 - Manager of Canadian National Programs on Uranium and Acid Generating Mine Tailings.
 - Director, Environment, Canadian Mineral Research Laboratory.
 - Senior Technical Manager, for large gold and bauxite mining operations in South America.
 - Expert Independent Consultant associated with several companies, including P&E Mining Consultants, on mineral processing, environmental management, and mineral-based radiation assessment.
4. I have not visited the Property that is the subject of this Technical Report.
 5. I am responsible for authoring Sections 13 and 20, and co-authoring Sections 1, 25, 26 and 27 of this Technical Report.
 6. I am independent of the issuer applying the test in Section 1.5 of NI 43-101.
 7. I have had no prior involvement with the Project that is the subject of this Technical Report.
 8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
 9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 8, 2024

Signed Date: May 31, 2024

{SIGNED AND SEALED}

[D. Grant Feasby]

D. Grant Feasby, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

ANTOINE R. YASSA, P.GEO.

I, Antoine R. Yassa, P.Geo. residing at 3602 Rang des Cavaliers, Rouyn-Noranda, Quebec, J0Z 1Y2, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Technical Report and Updated Mineral Resource Estimate of the Boumadine Polymetallic Project, Kingdom of Morocco”, (The “Technical Report”) with an effective date of May 8, 2024.
3. I am a graduate of Ottawa University at Ottawa, Ontario with a B. Sc (HONS) in Geological Sciences (1977) with continuous experience as a geologist since 1979. I am a geological consultant currently licensed by the Order of Geologists of Québec (License No 224) and by Professional Geoscientists Ontario (License No 1890);

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- | | |
|---|--------------|
| • Minex Geologist (Val d’Or), 3-D Modeling (Timmins), Placer Dome | 1993-1995 |
| • Database Manager, Senior Geologist, West Africa, PDX, | 1996-1998 |
| • Senior Geologist, Database Manager, McWatters Mine | 1998-2000 |
| • Database Manager, Gemcom modeling and Resources Evaluation (Kiena Mine) | 2001-2003 |
| • Database Manager and Resources Evaluation at Julietta Mine, Bema Gold Corp. | 2003-2006 |
| • Consulting Geologist | 2006-present |

4. I have visited the Property that is the subject of this Technical Report on March 12 to 14, 2024.
5. I am responsible for authoring Section 10, and co-authoring Sections 1, 12, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had no prior involvement with the Project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 8, 2024

Signed Date: May 31, 2024

{SIGNED AND SEALED}

[Antoine R. Yassa]

Antoine R. Yassa, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

EUGENE PURITCH, P. ENG., FEC, CET

I, Eugene J. Puritch, P. Eng., FEC, CET, residing at 44 Turtlecreek Blvd., Brampton, Ontario, L6W 3X7, do hereby certify that:

1. I am an independent mining consultant and President of P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Technical Report and Updated Mineral Resource Estimate of the Boumadine Polymetallic Project, Kingdom of Morocco”, (The “Technical Report”) with an effective date of May 8, 2024.
3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining, as well as obtaining an additional year of undergraduate education in Mine Engineering at Queen’s University. In addition, I have also met the Professional Engineers of Ontario Academic Requirement Committee’s Examination requirement for a Bachelor’s degree in Engineering Equivalency. I am a mining consultant currently licensed by the: Professional Engineers and Geoscientists New Brunswick (License No. 4778); Professional Engineers, Geoscientists Newfoundland and Labrador (License No. 5998); Association of Professional Engineers and Geoscientists Saskatchewan (License No. 16216); Ontario Association of Certified Engineering Technicians and Technologists (License No. 45252); Professional Engineers of Ontario (License No. 100014010); Association of Professional Engineers and Geoscientists of British Columbia (License No. 42912); and Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (No. L3877). I am also a member of the National Canadian Institute of Mining and Metallurgy.

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

I have practiced my profession continuously since 1978. My summarized career experience is as follows:

- Mining Technologist - H.B.M. & S. and Inco Ltd., 1978-1980
- Open Pit Mine Engineer – Cassiar Asbestos/Brinco Ltd., 1981-1983
- Pit Engineer/Drill & Blast Supervisor – Detour Lake Mine, 1984-1986
- Self-Employed Mining Consultant – Timmins Area, 1987-1988
- Mine Designer/Resource Estimator – Dynatec/CMD/Bharti, 1989-1995
- Self-Employed Mining Consultant/Resource-Reserve Estimator, 1995-2004
- President – P&E Mining Consultants Inc, 2004-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for co-authoring Sections 1, 14, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the Project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: May 8, 2024

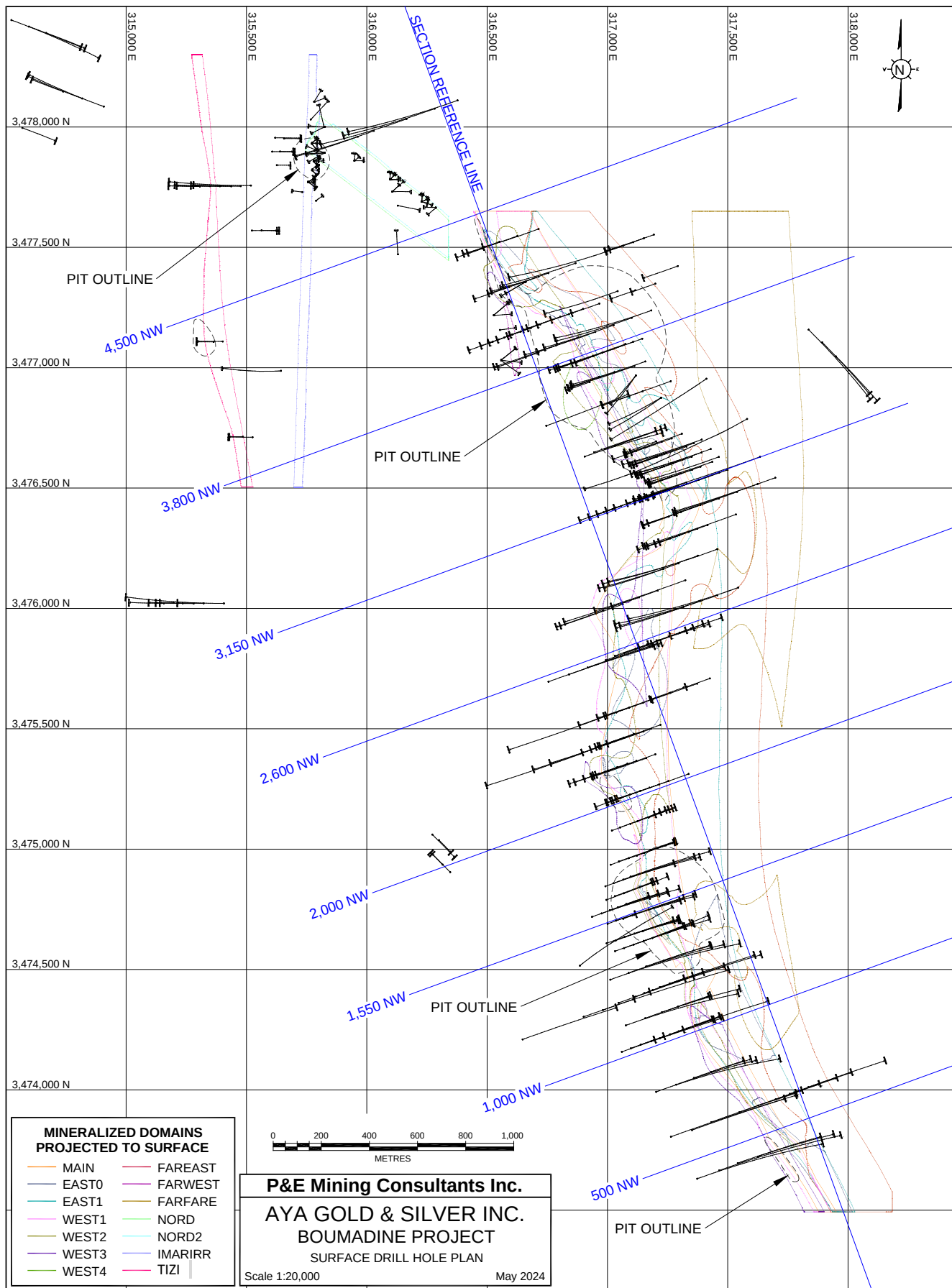
Signed Date: May 31, 2024

{SIGNED AND SEALED}

[Eugene Puritch]

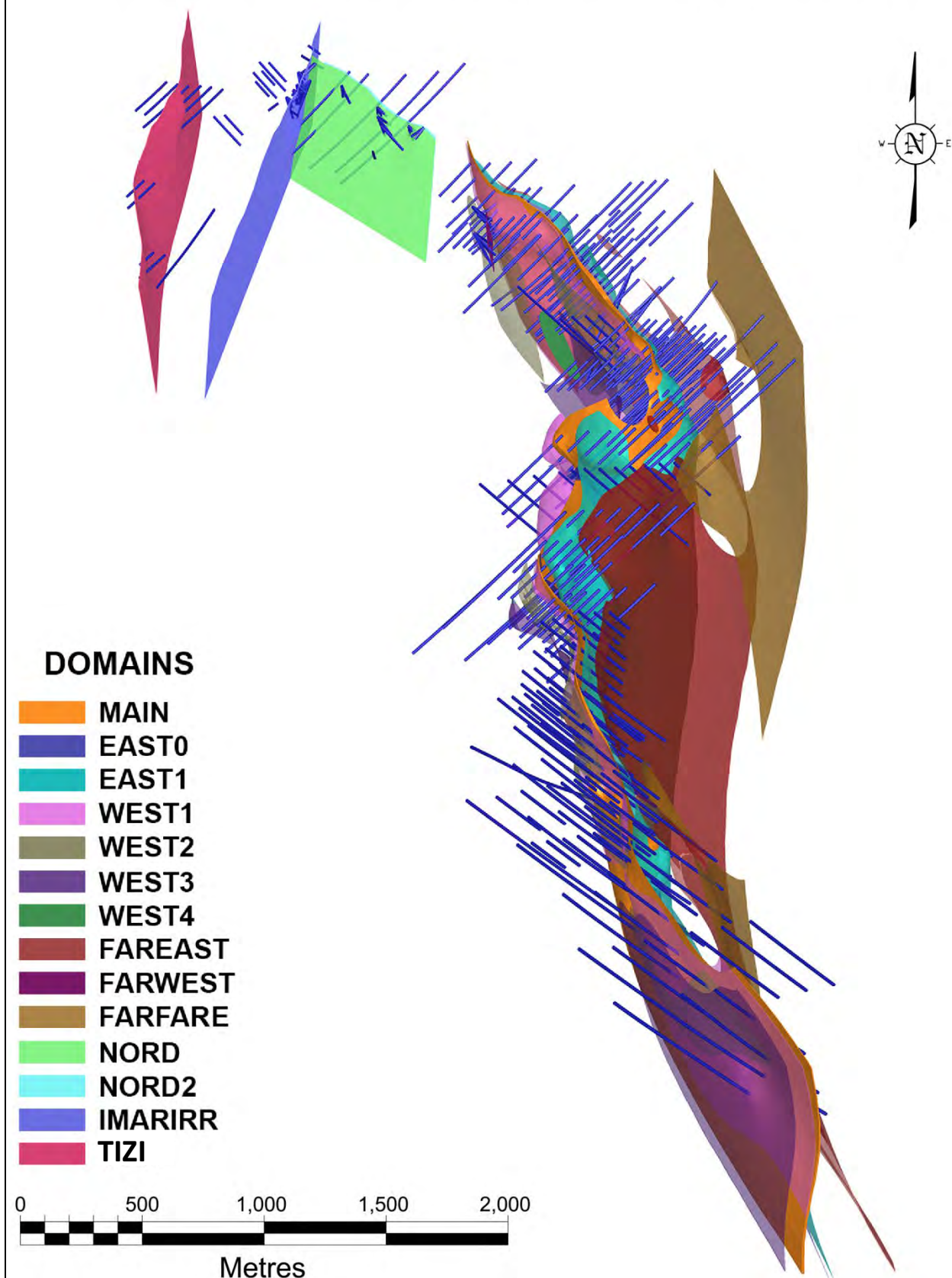
Eugene Puritch, P.Eng., FEC, CET

APPENDIX A DRILL HOLE PLAN

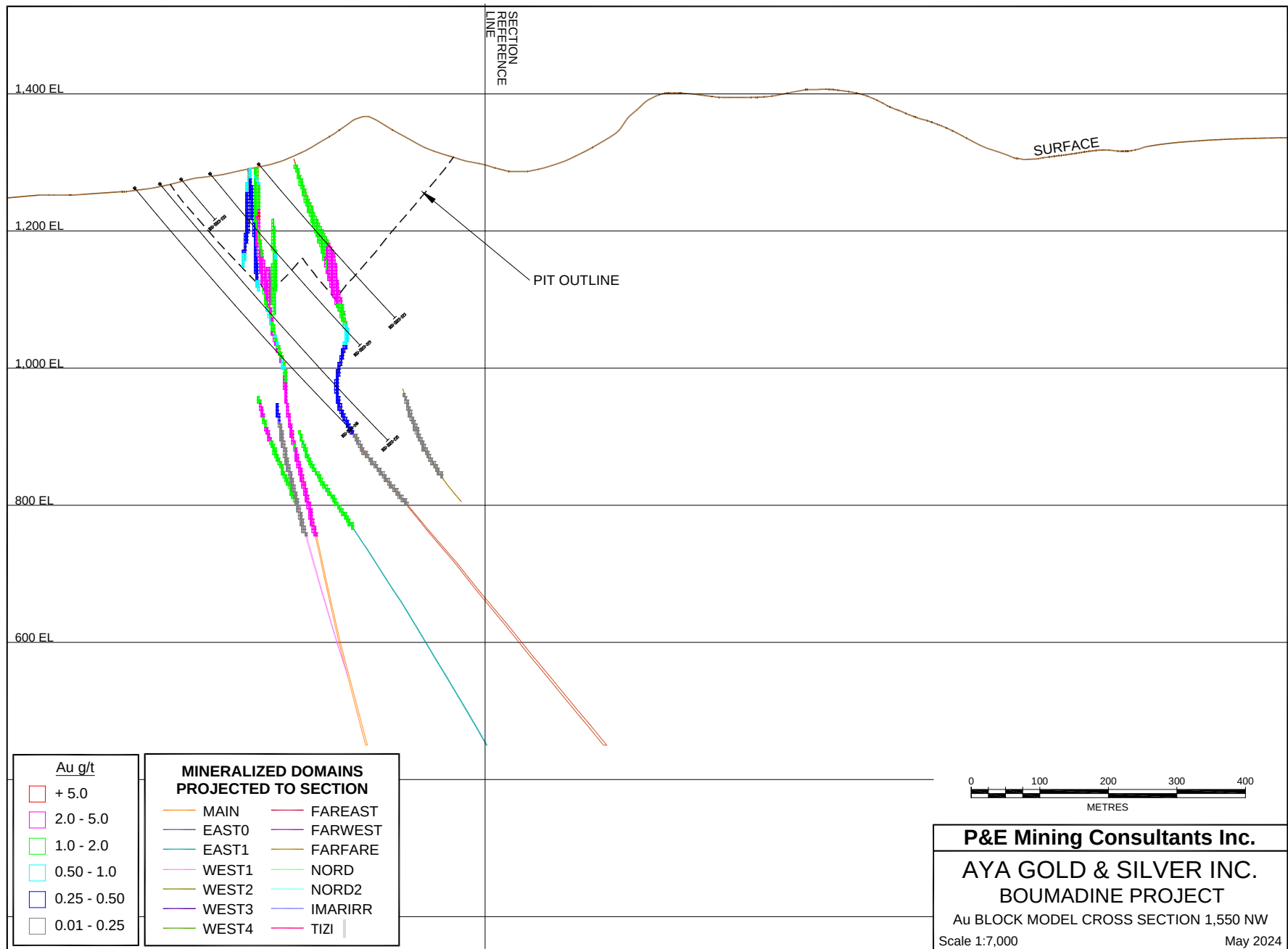


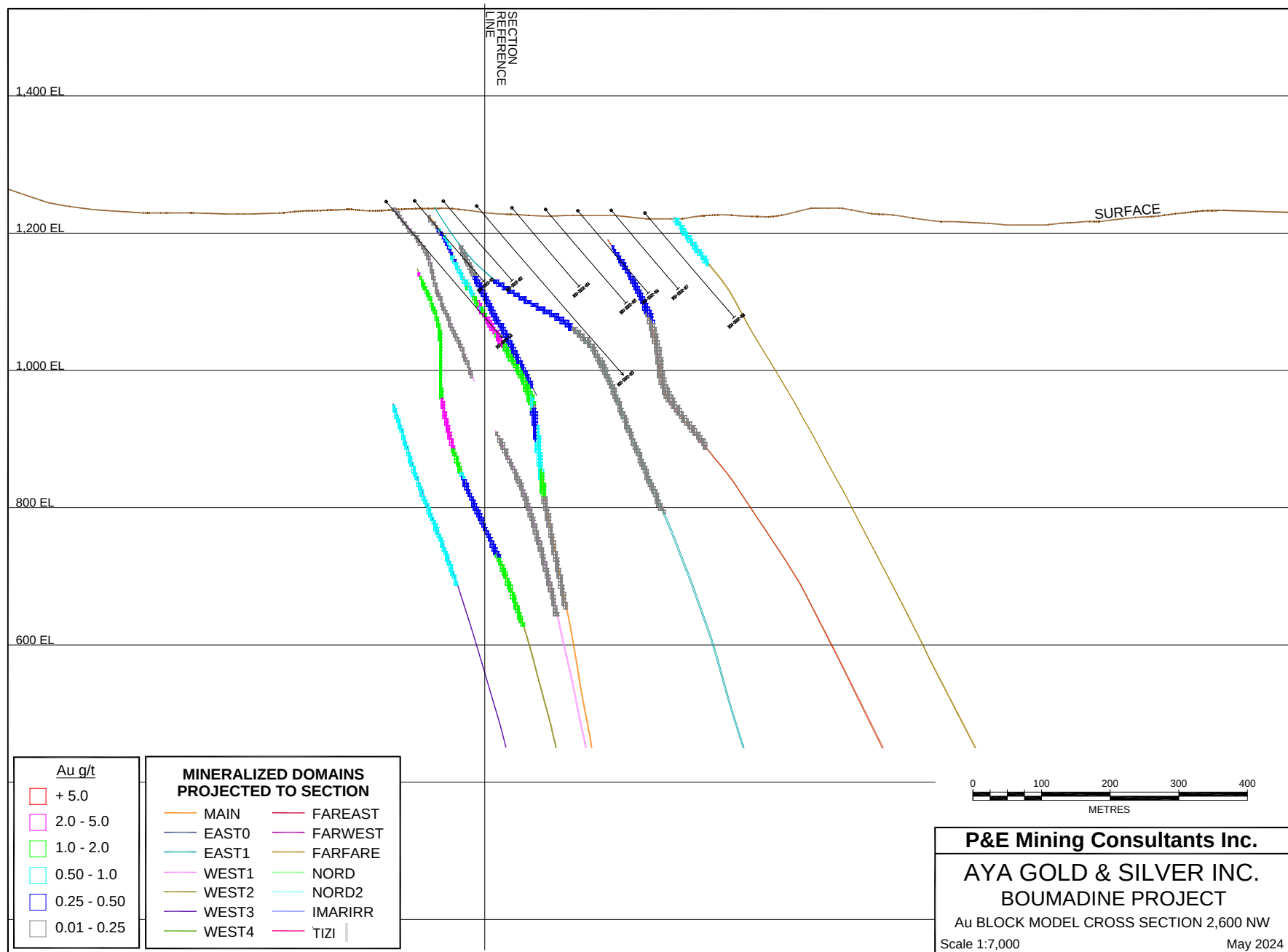
APPENDIX B 3-D DOMAINS

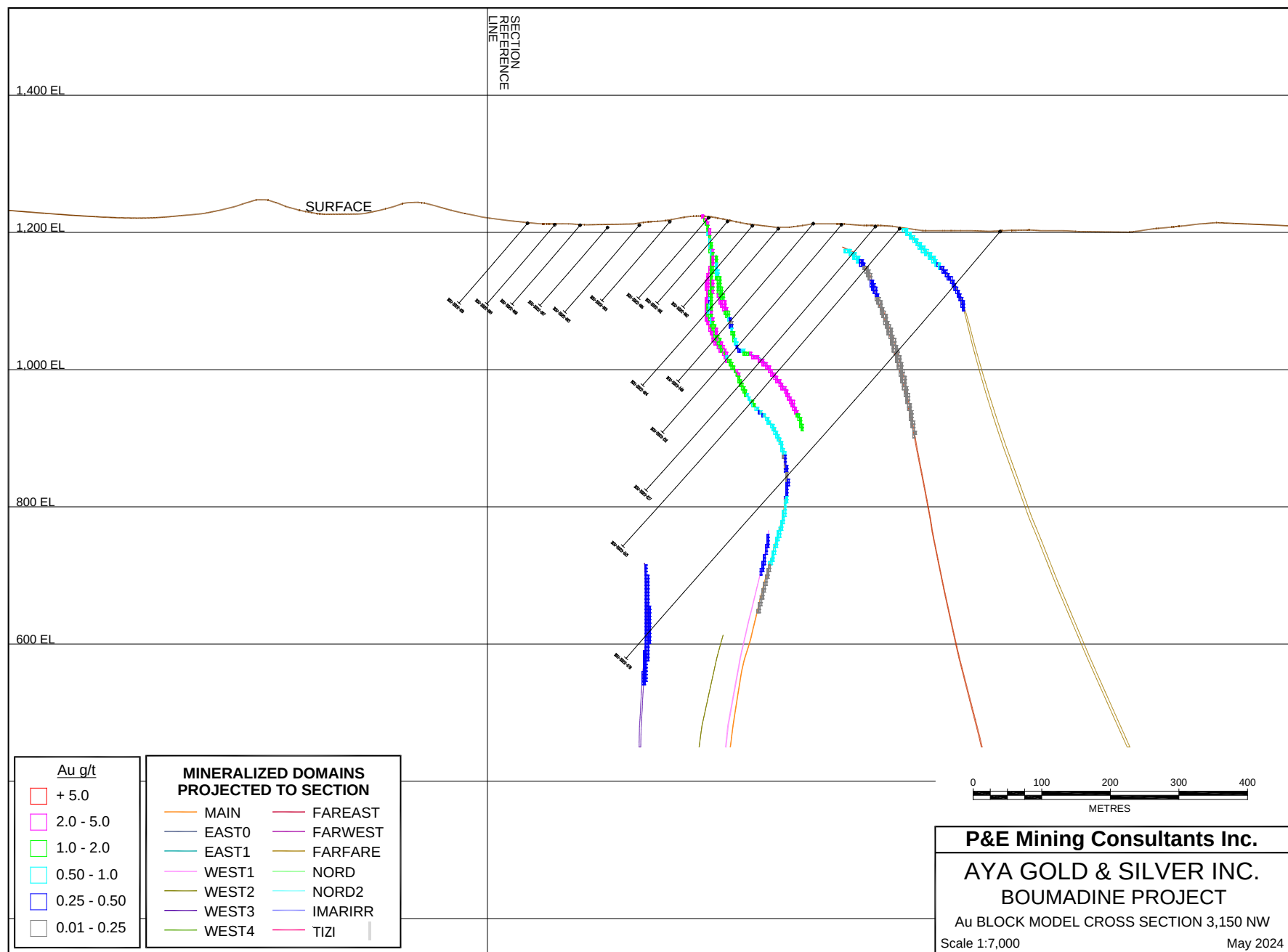
BOUMADINE PROJECT - 3D DOMAINS

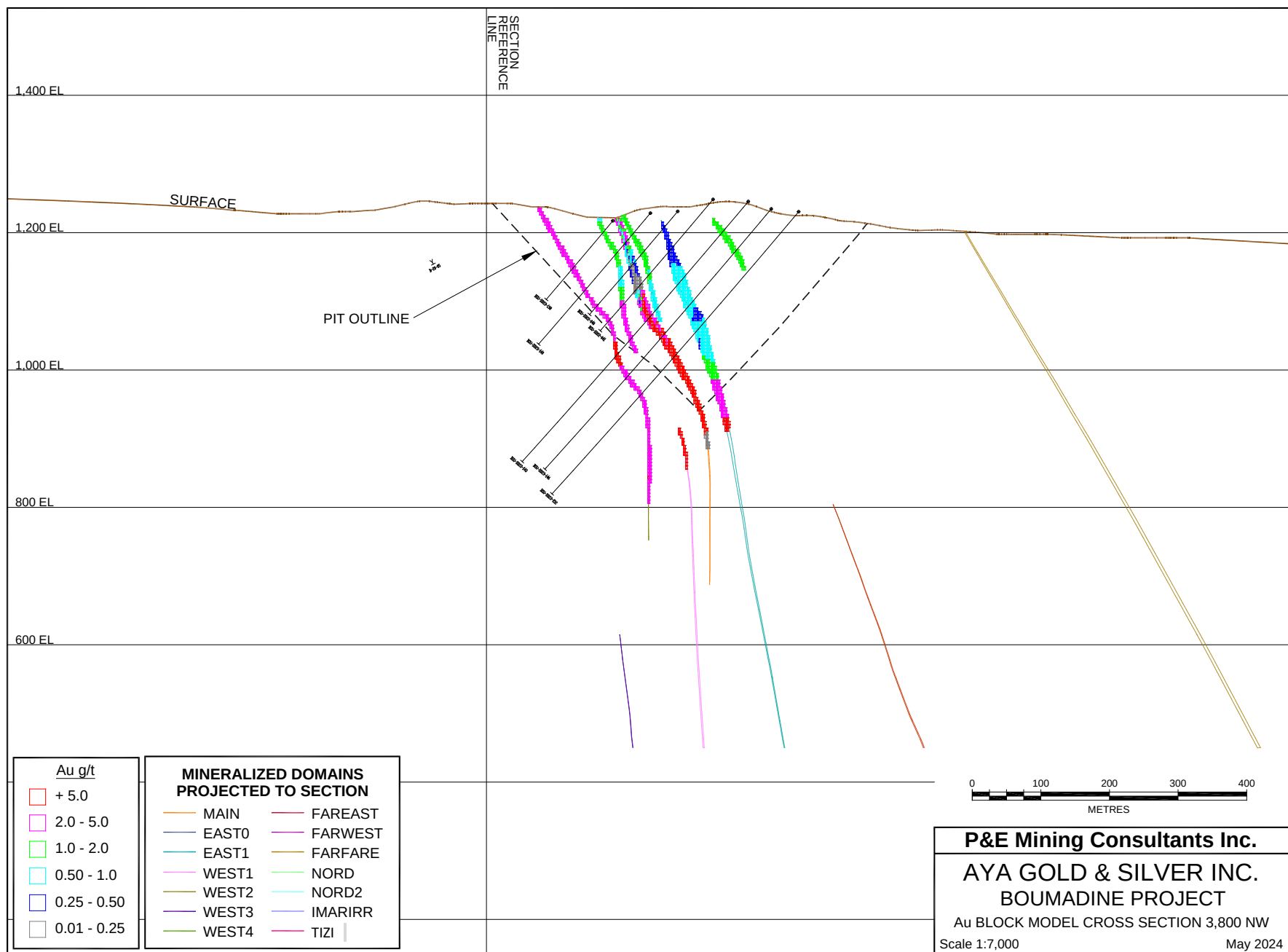


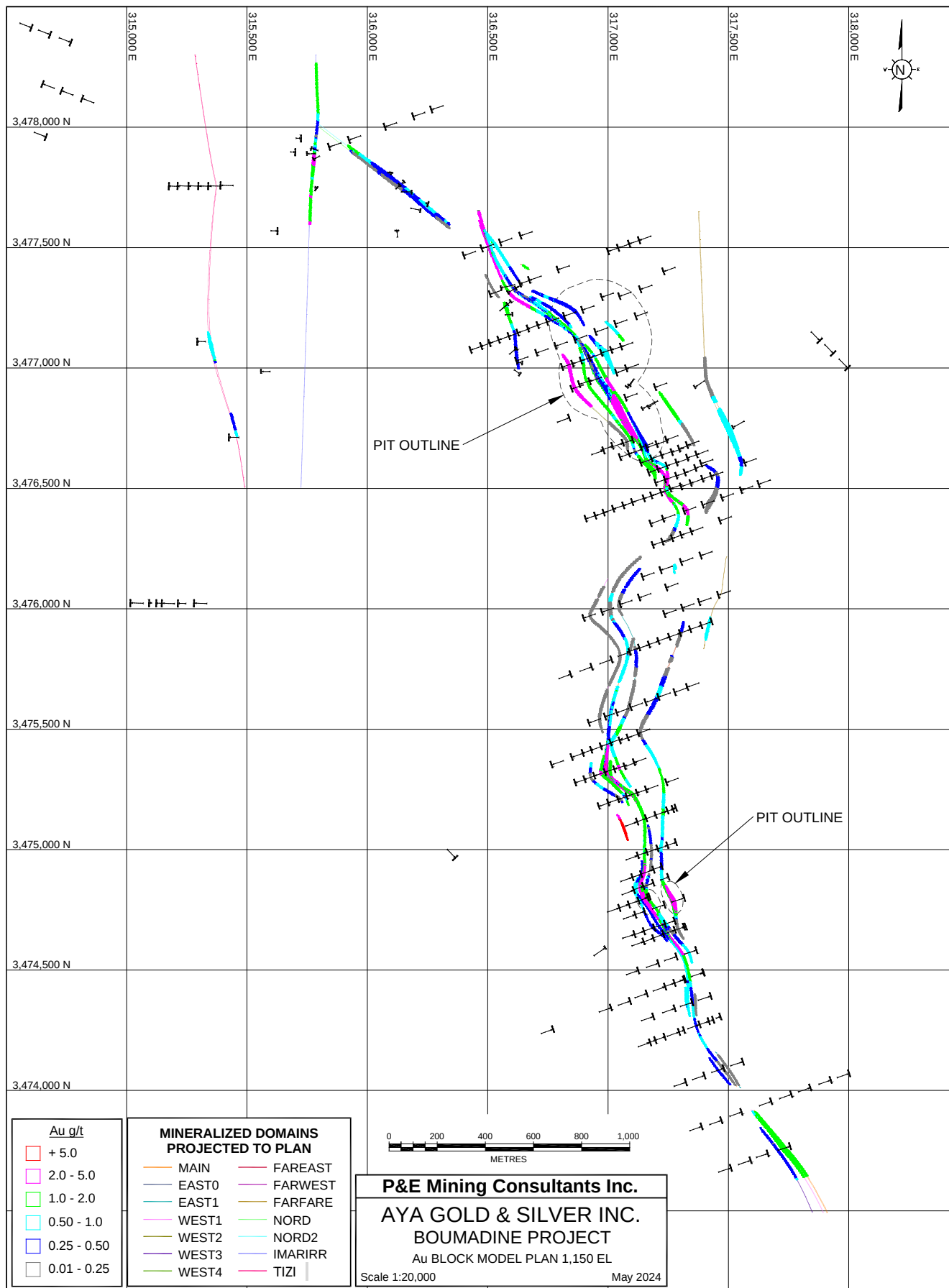
APPENDIX C AU BLOCK MODEL CROSS SECTIONS AND PLANS

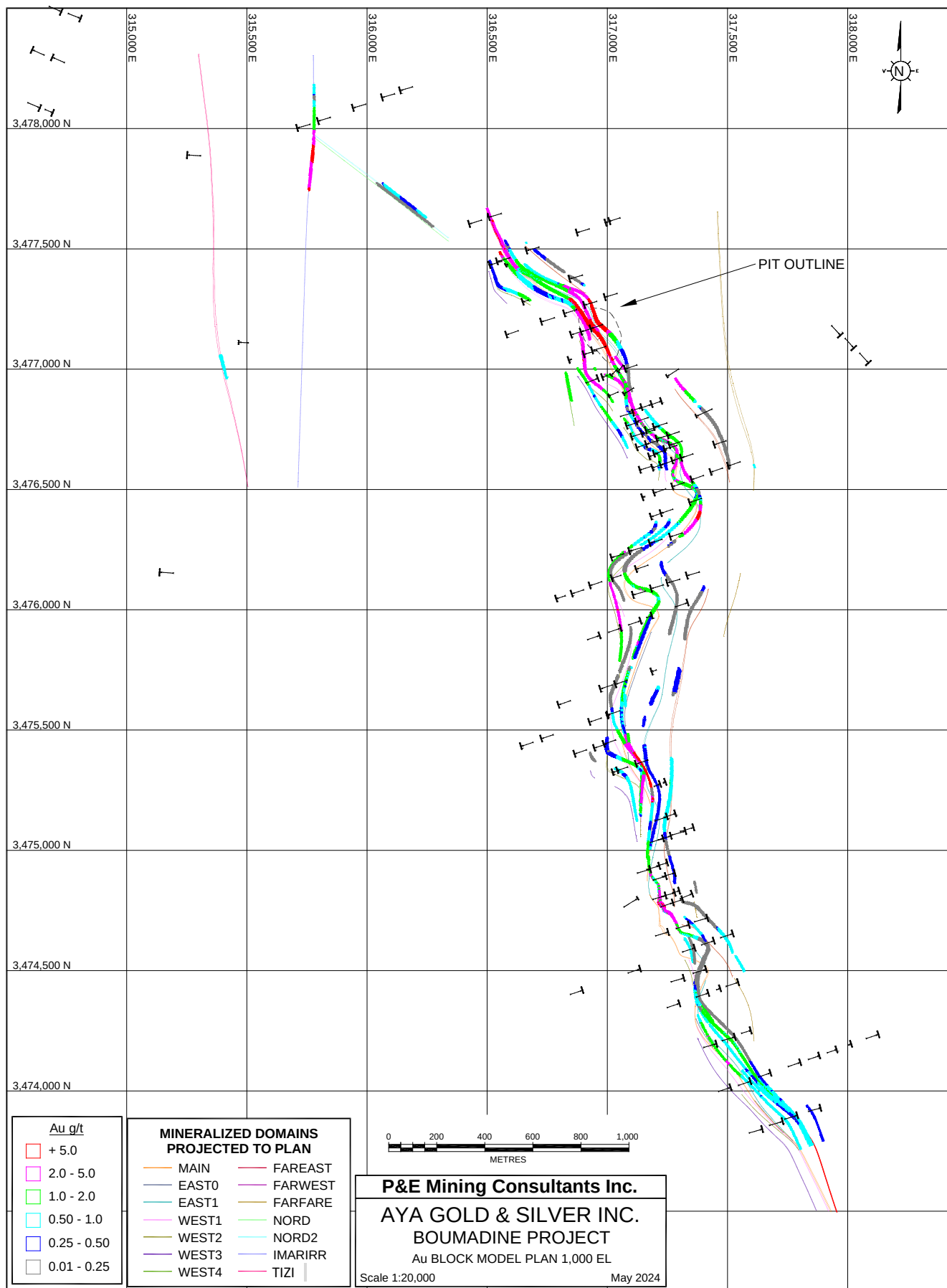


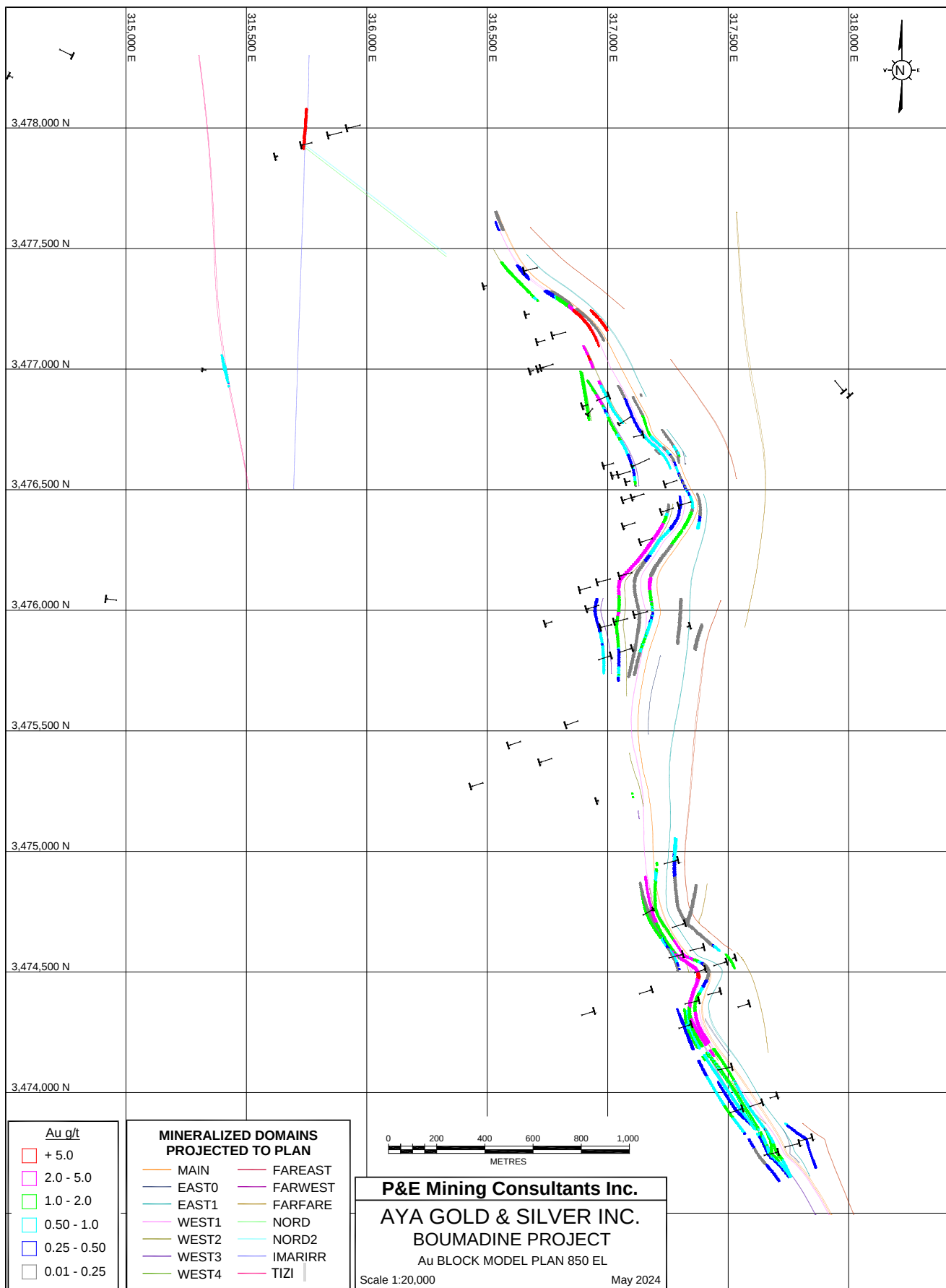




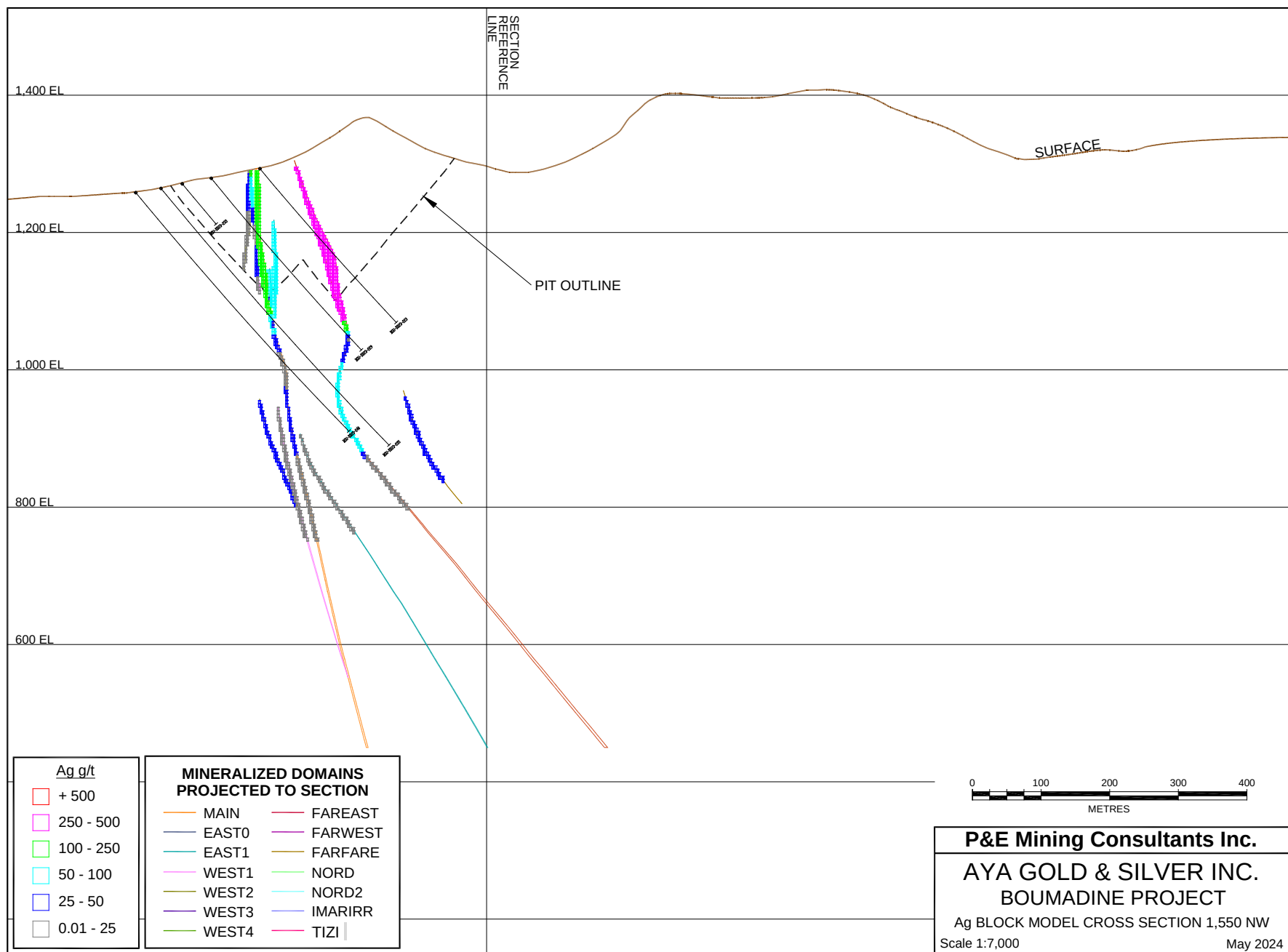


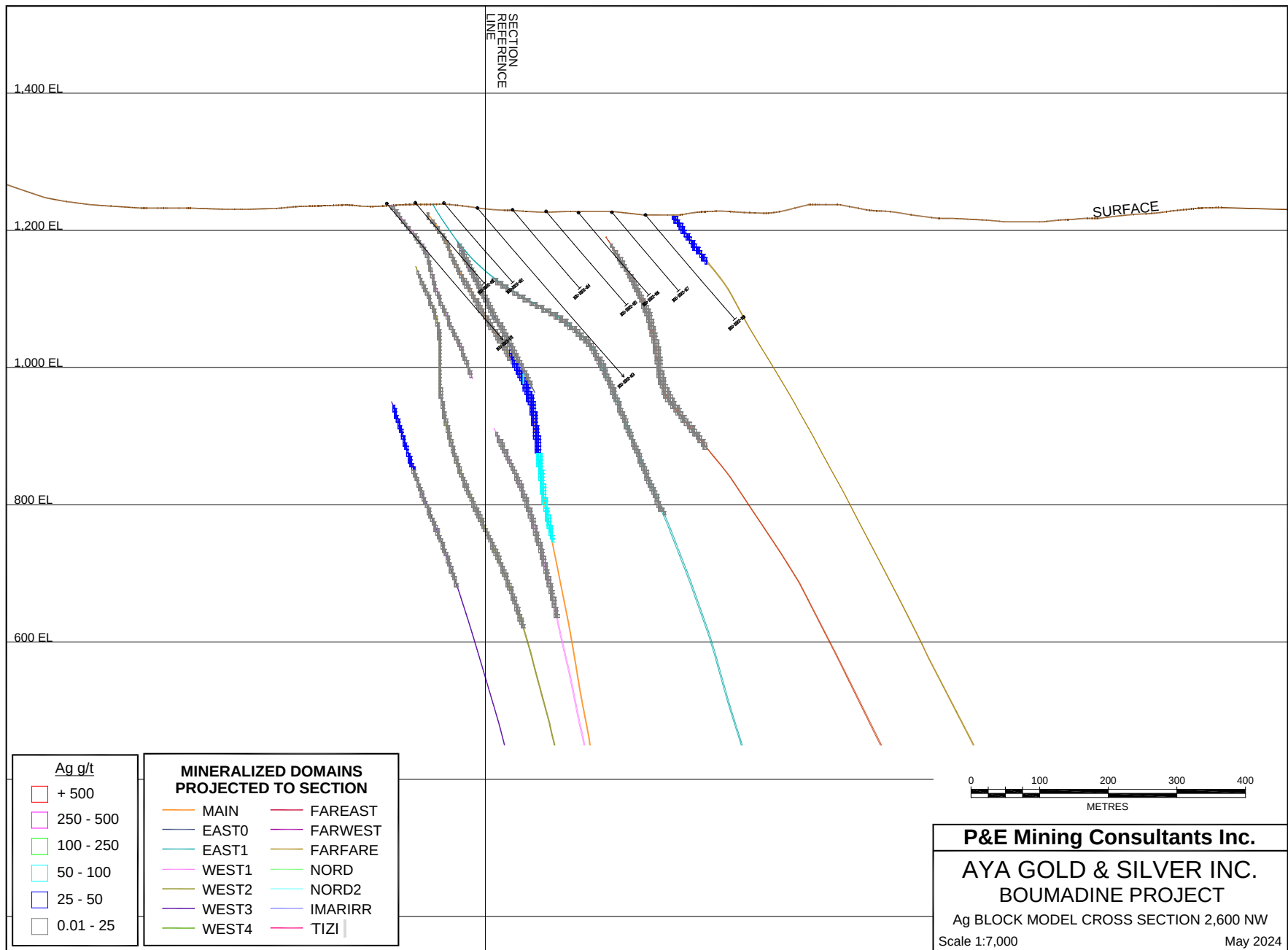


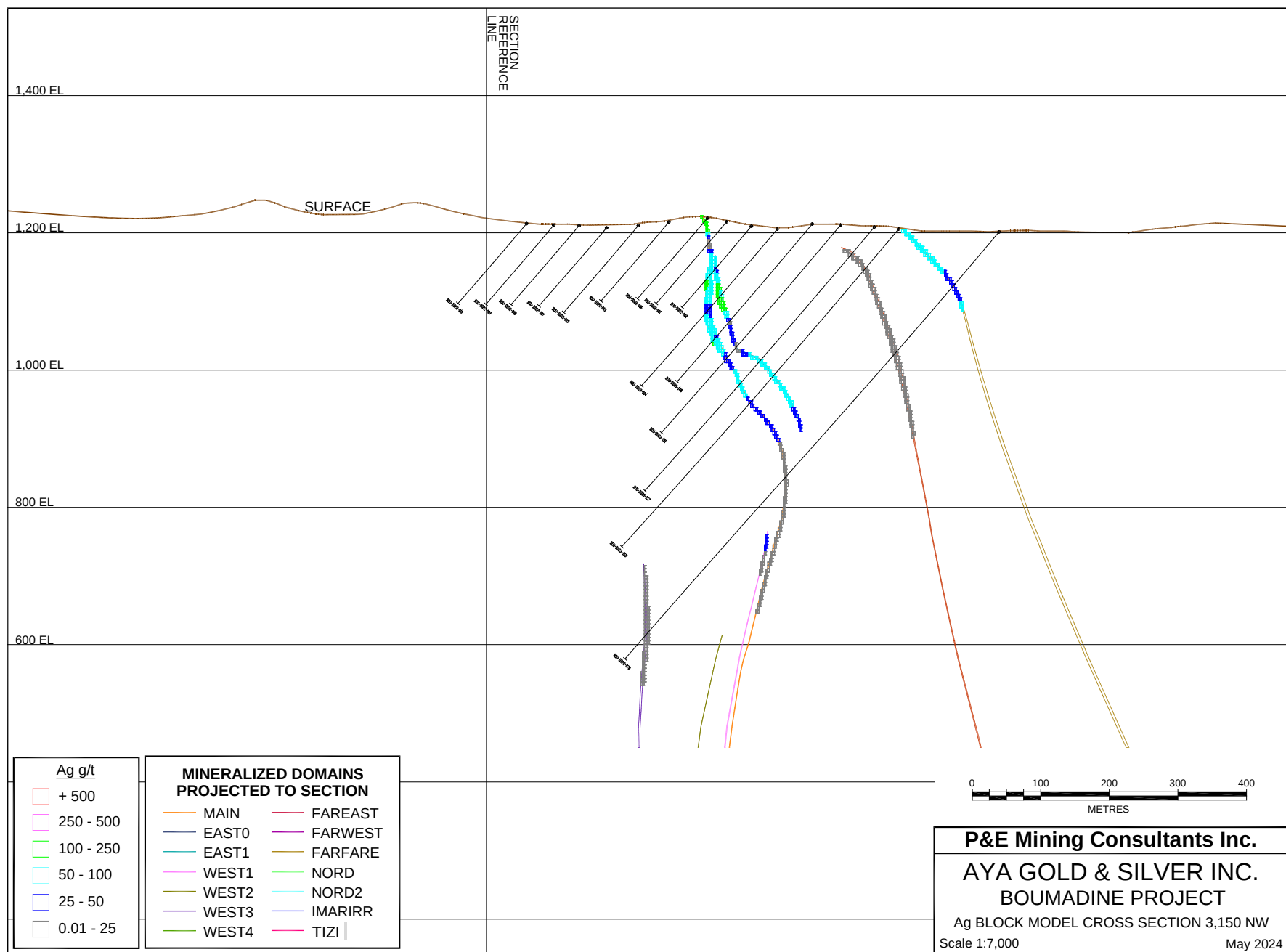


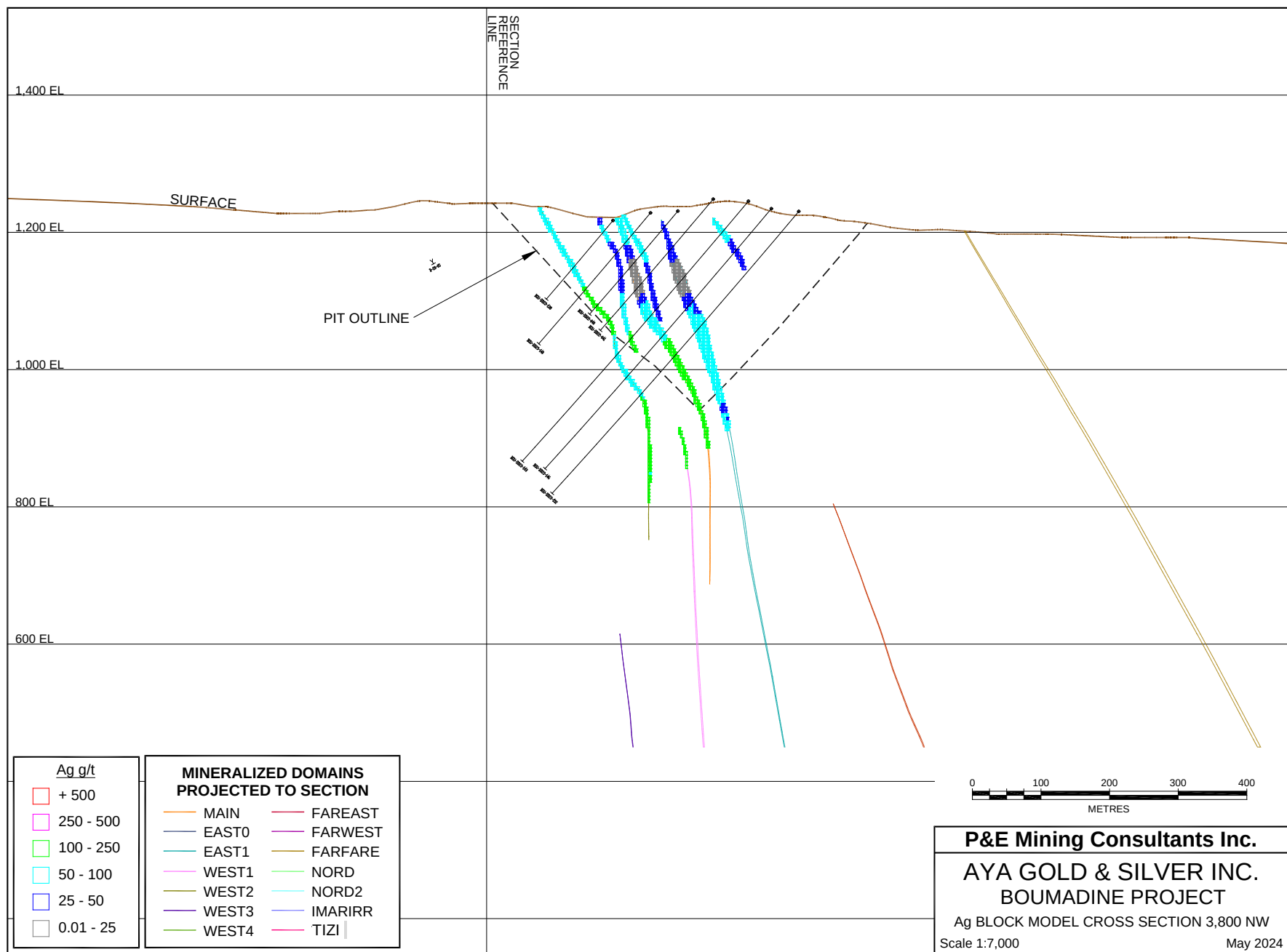


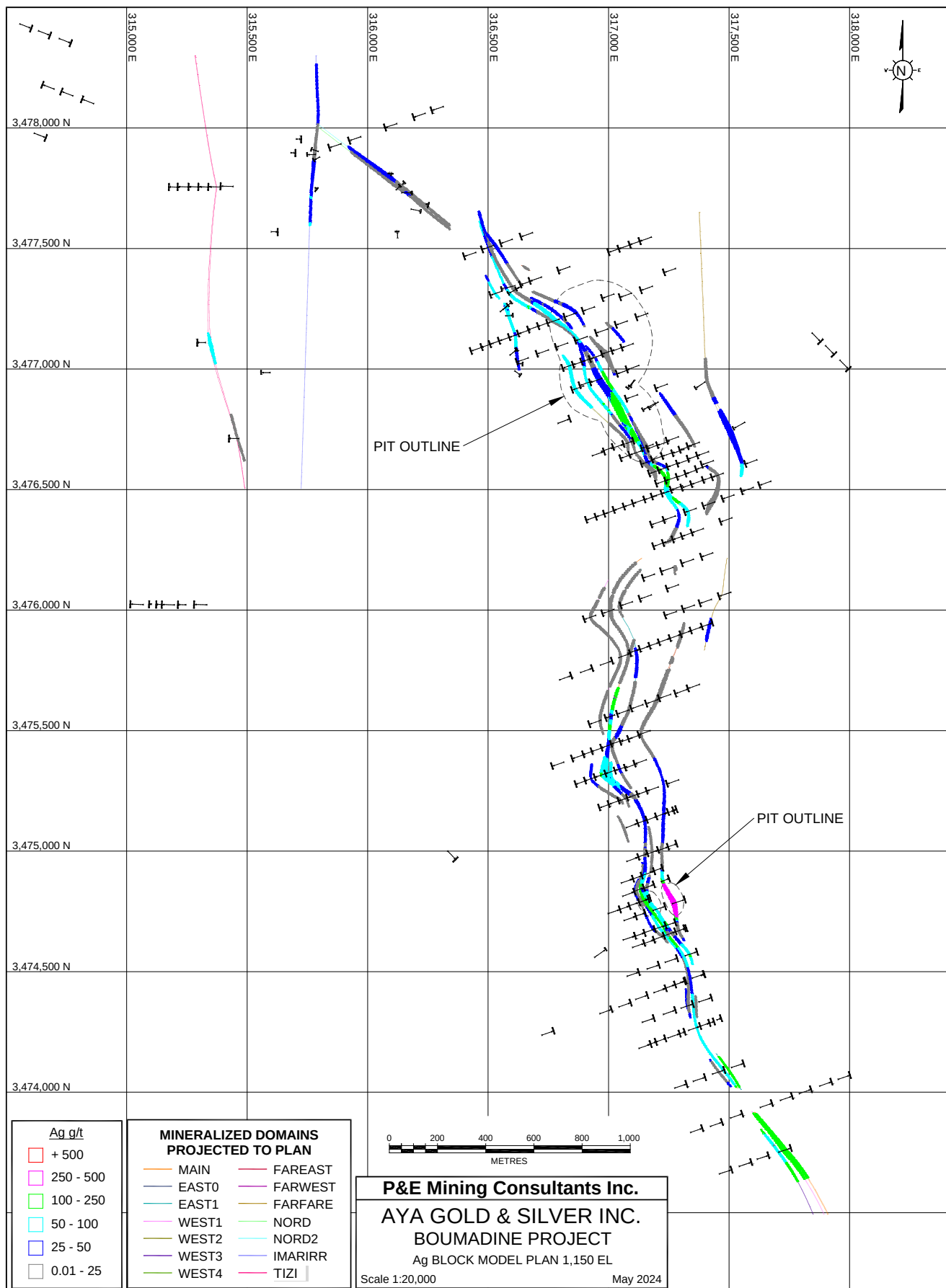
APPENDIX D AG BLOCK MODEL CROSS SECTIONS AND PLANS

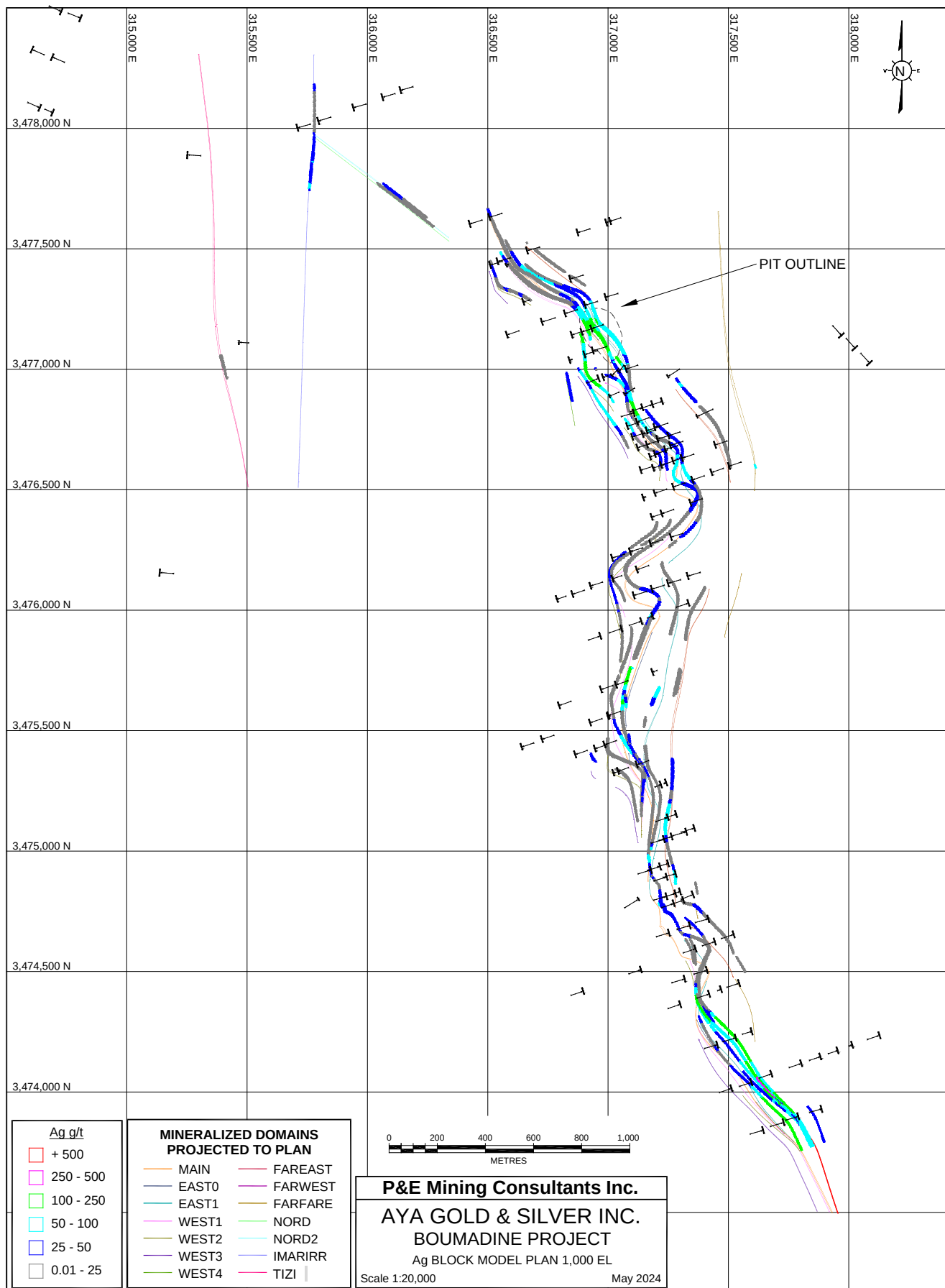


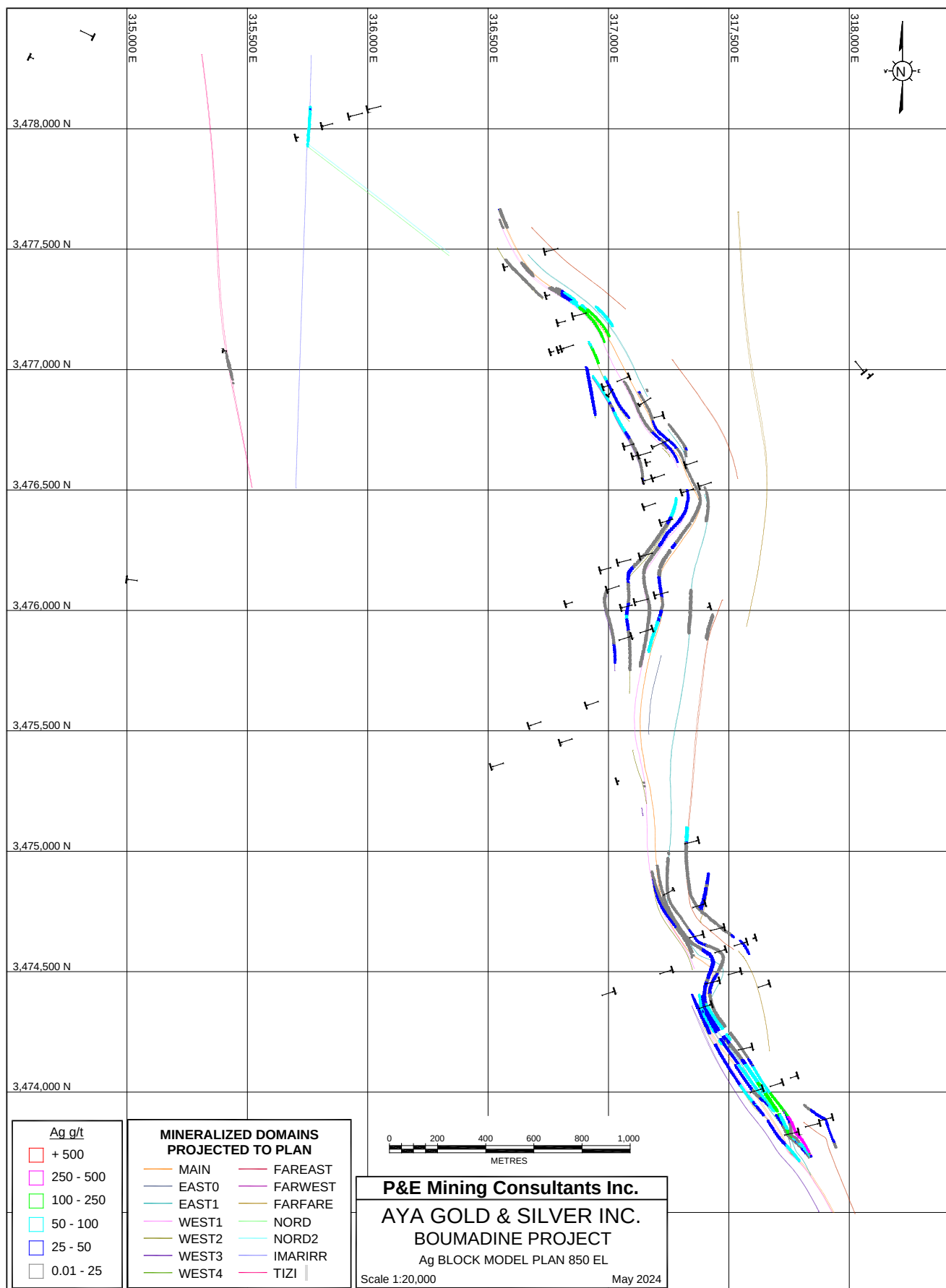




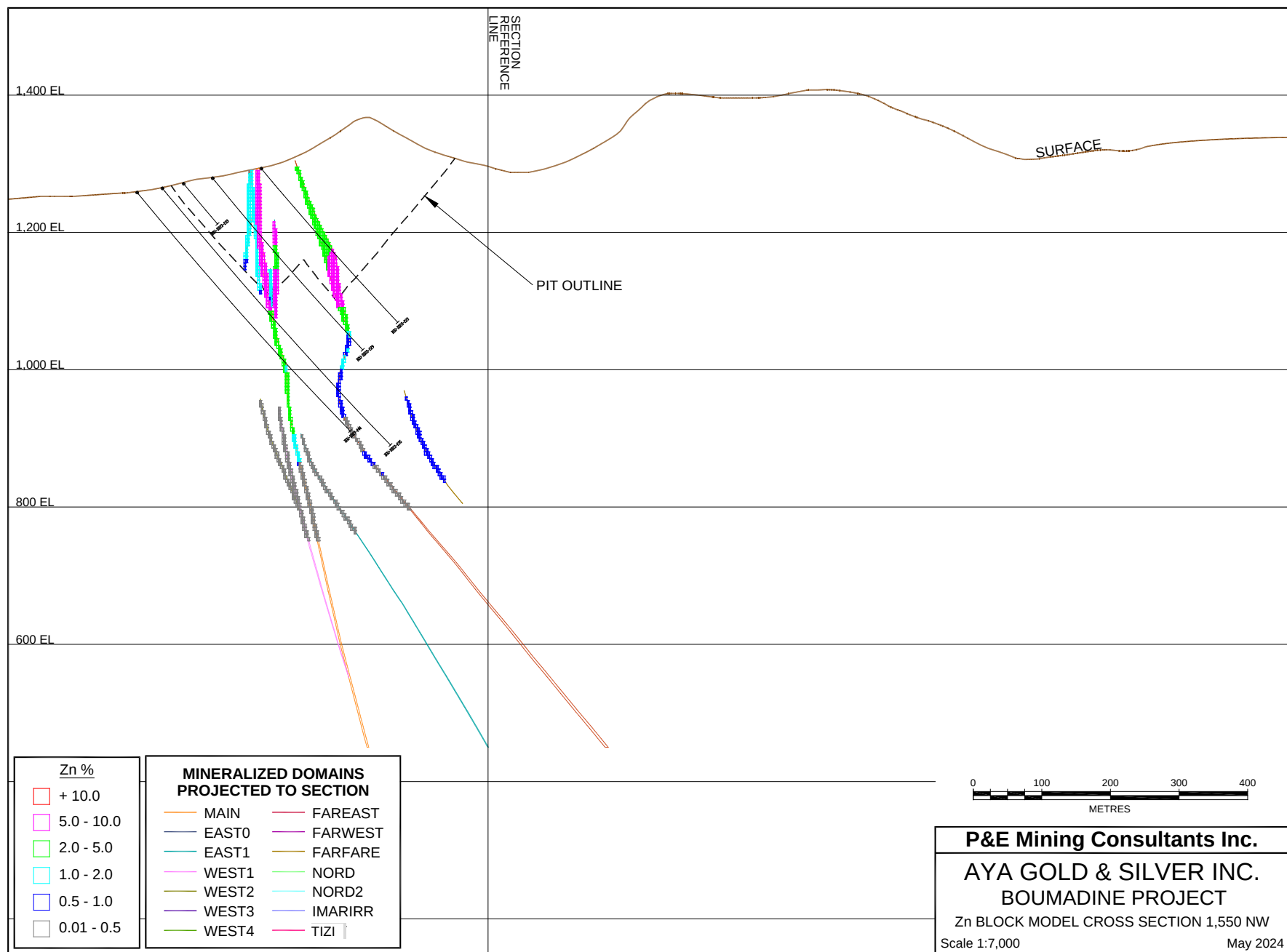


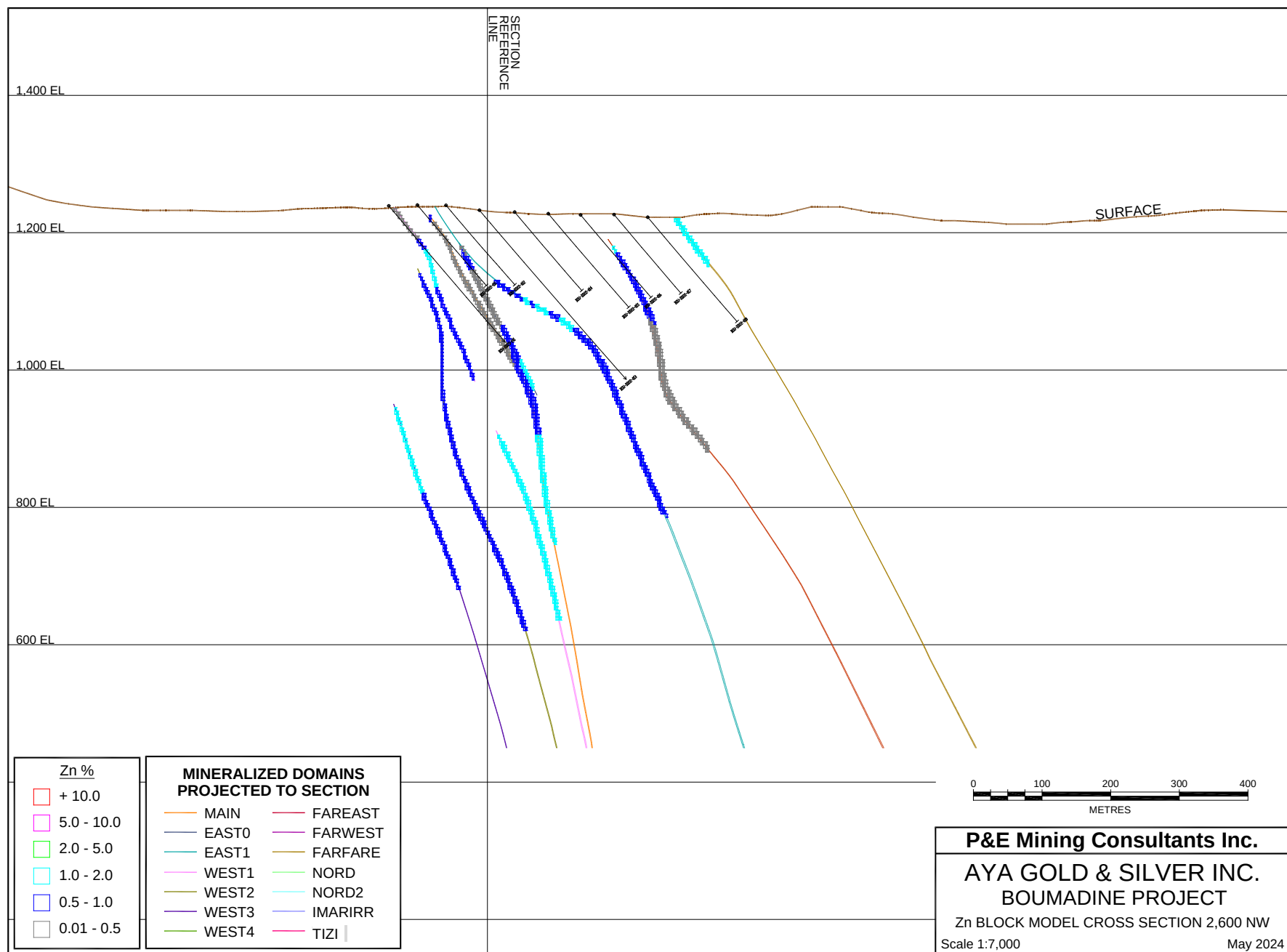


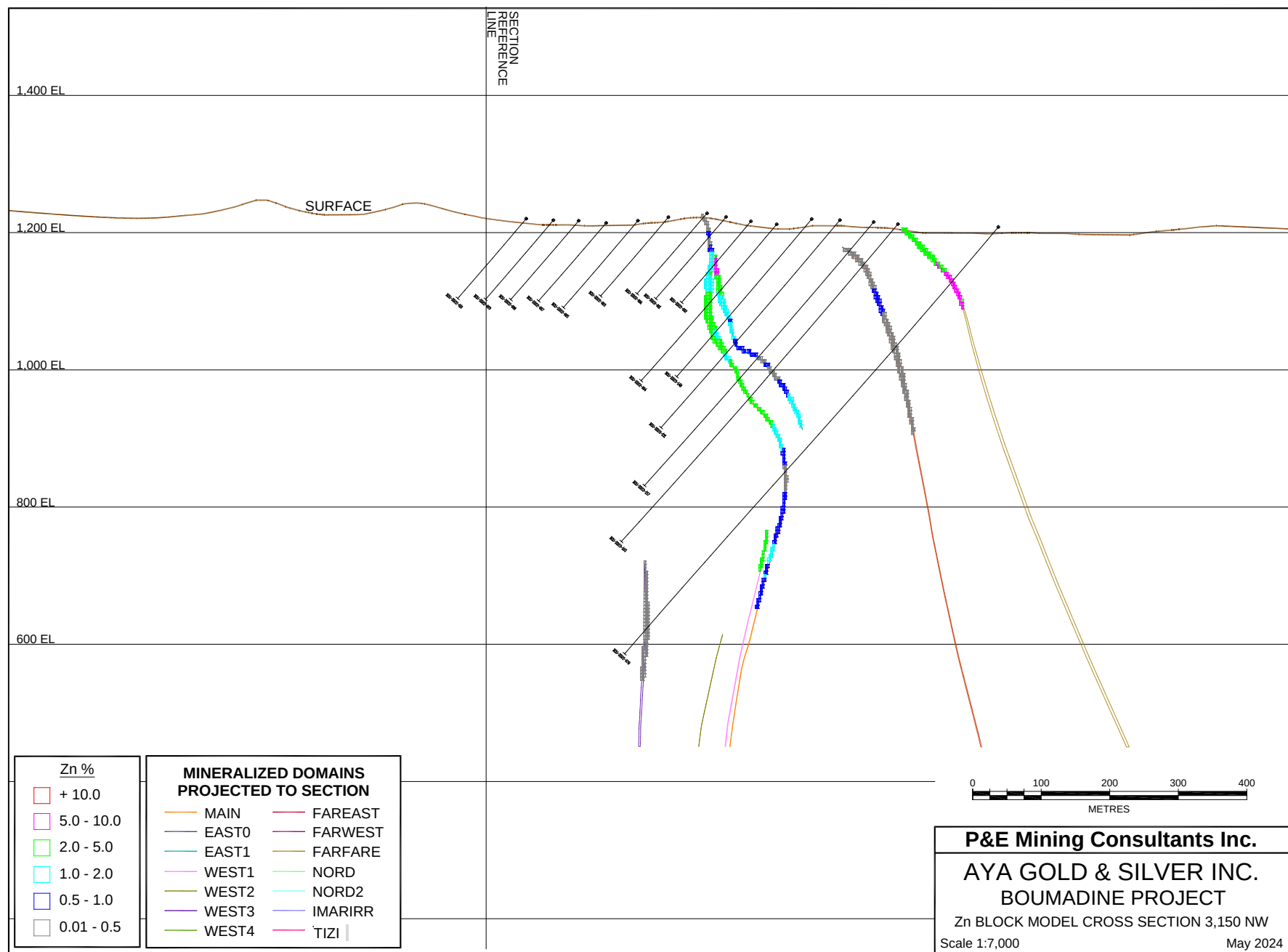


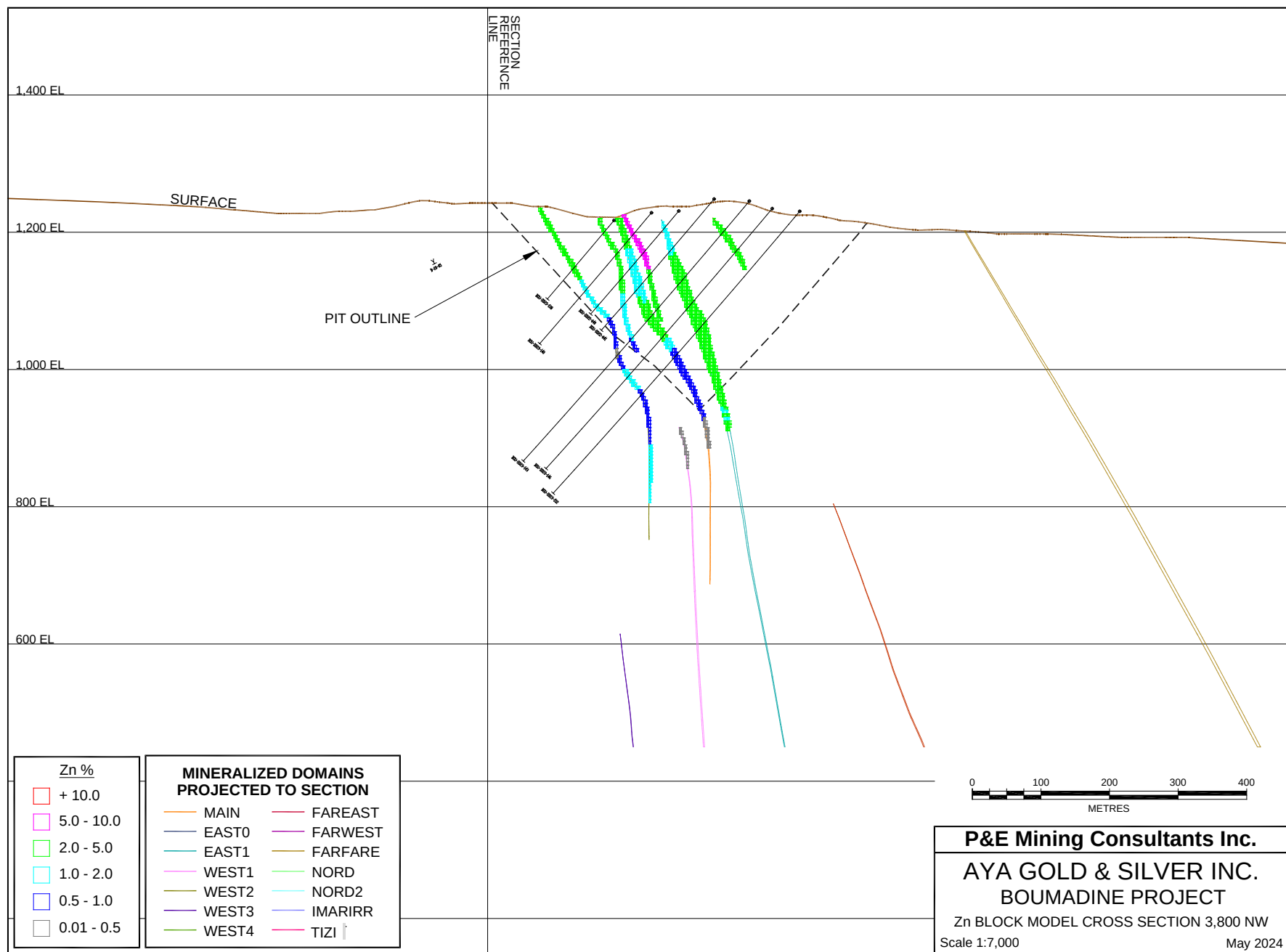


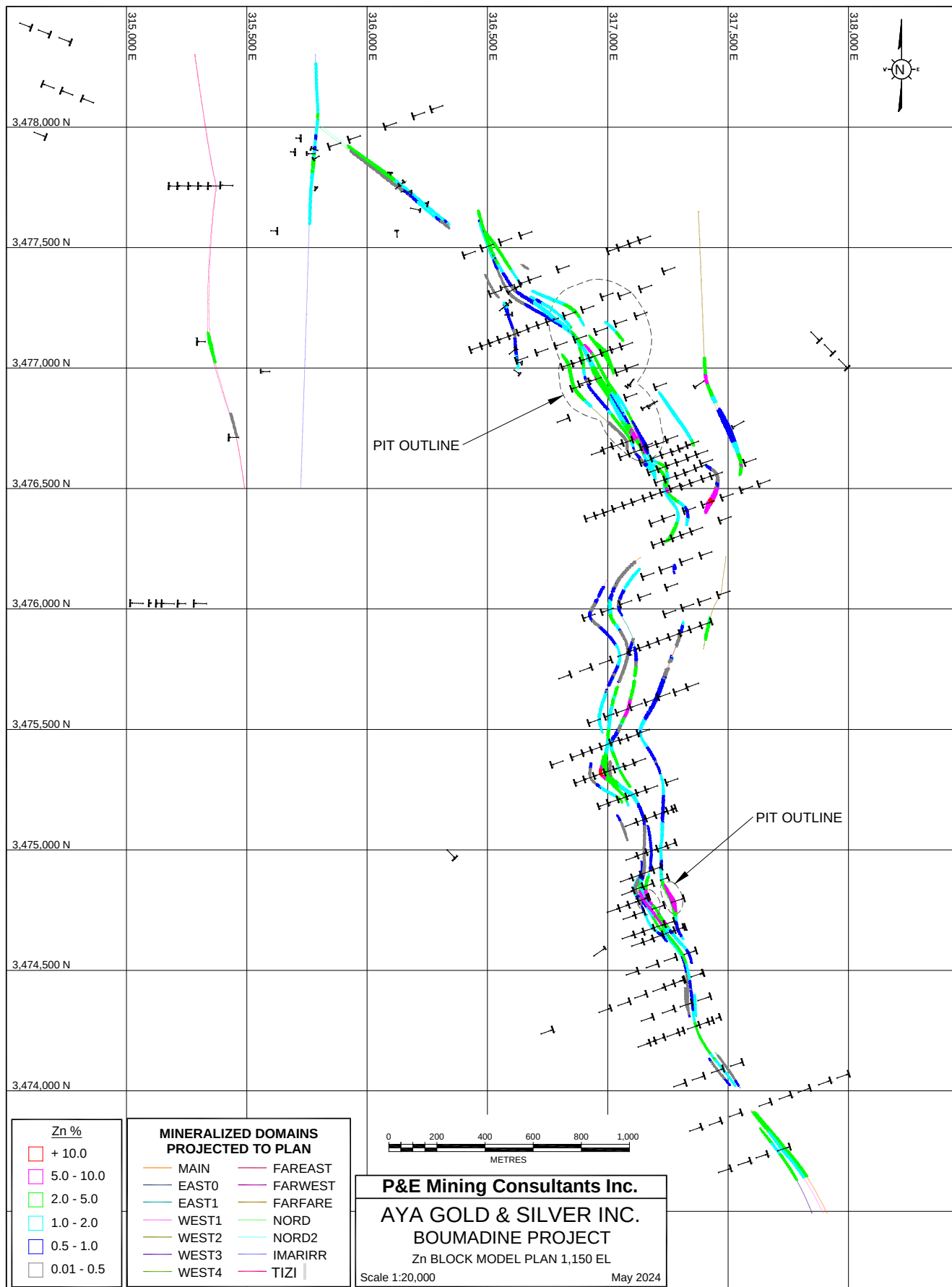
APPENDIX E ZN BLOCK MODEL CROSS SECTIONS AND PLANS

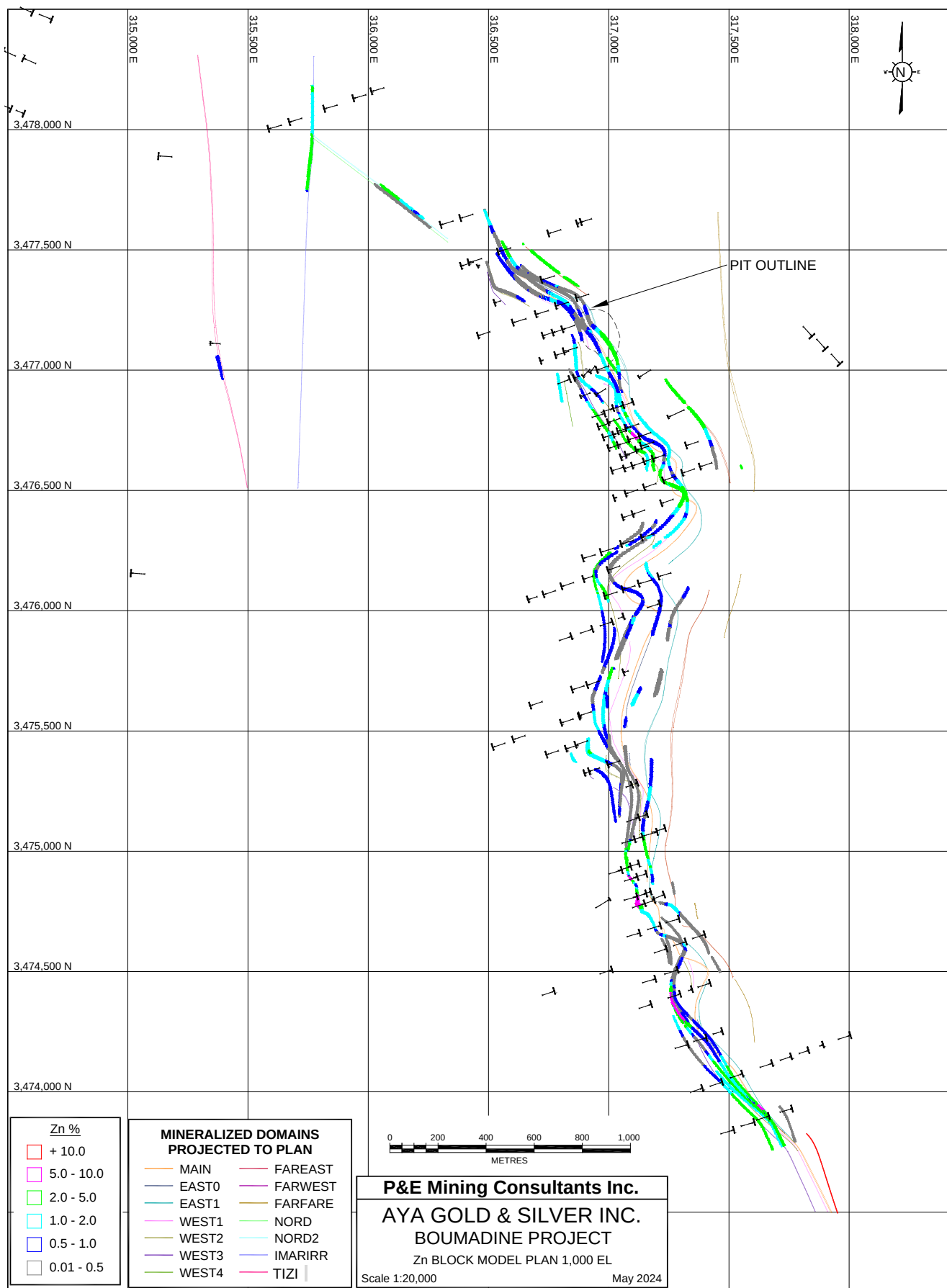


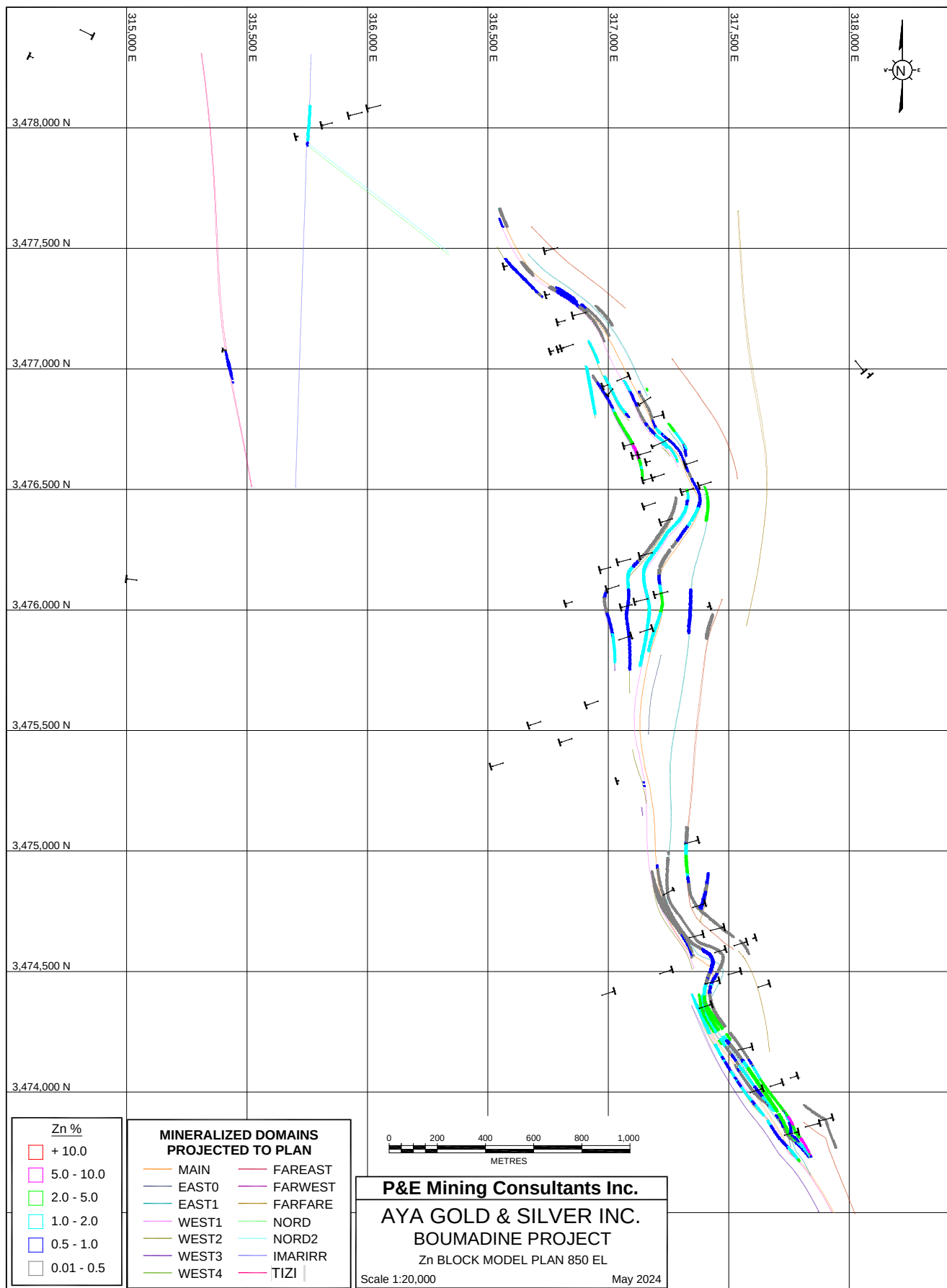




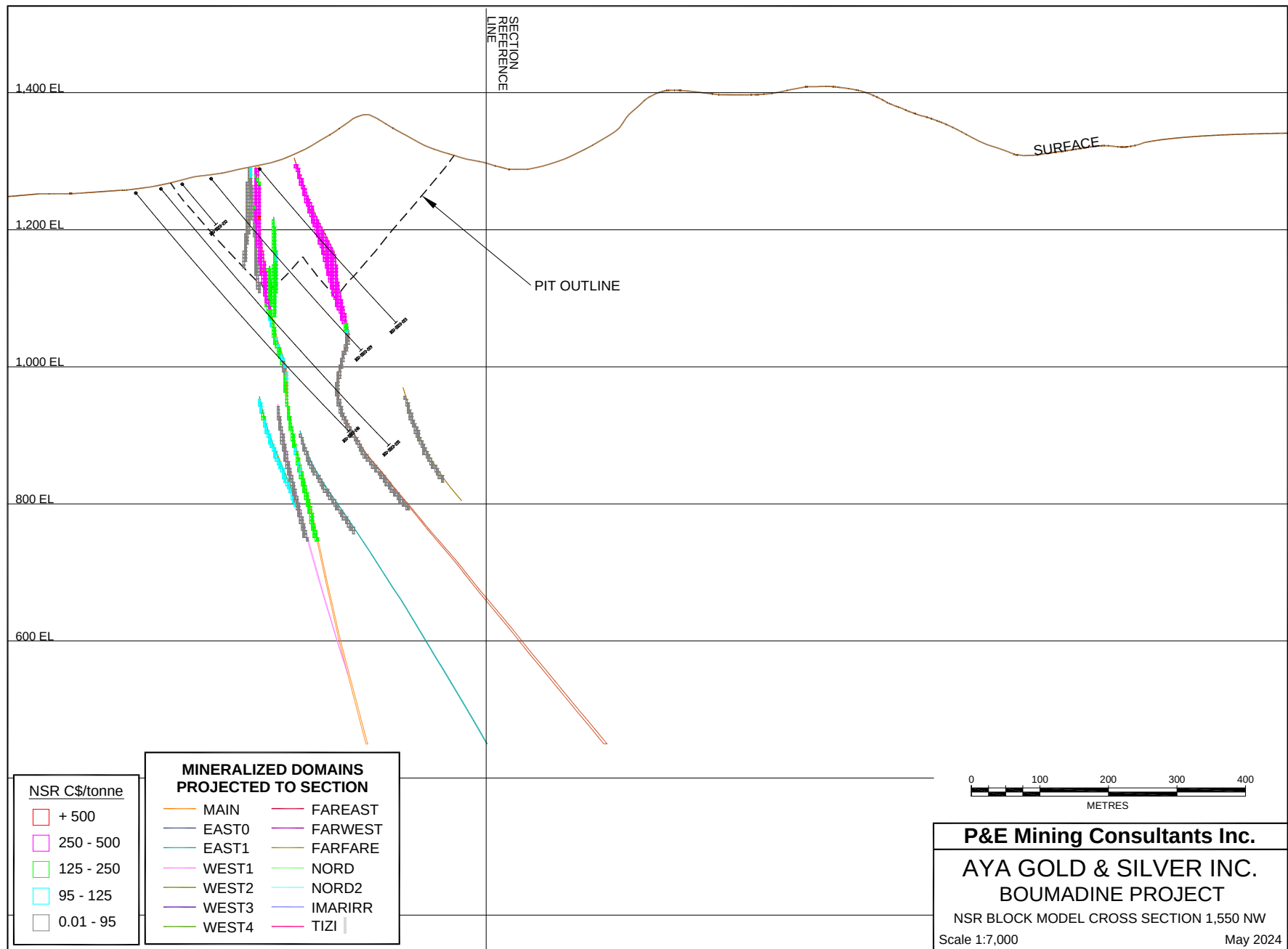


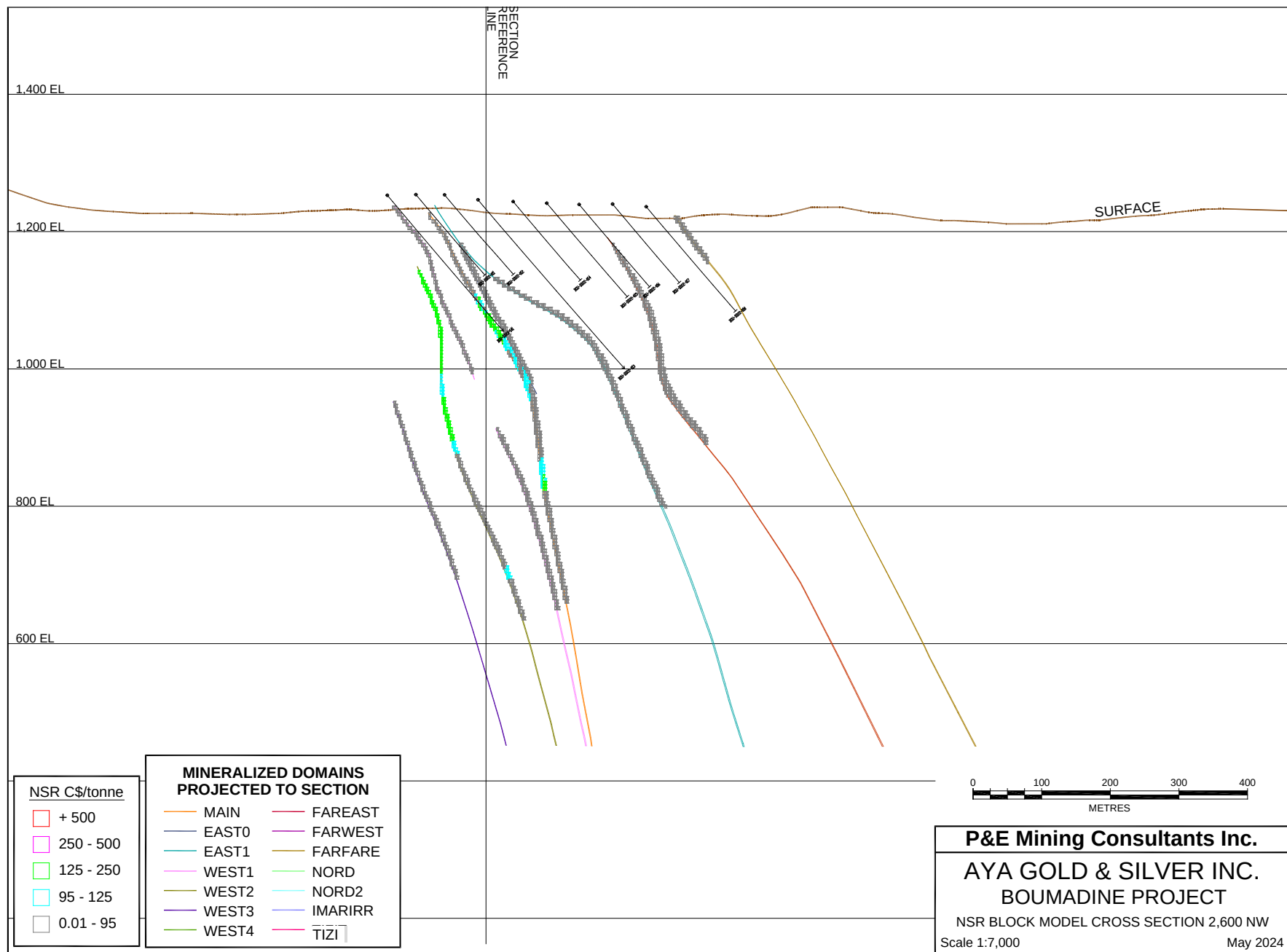


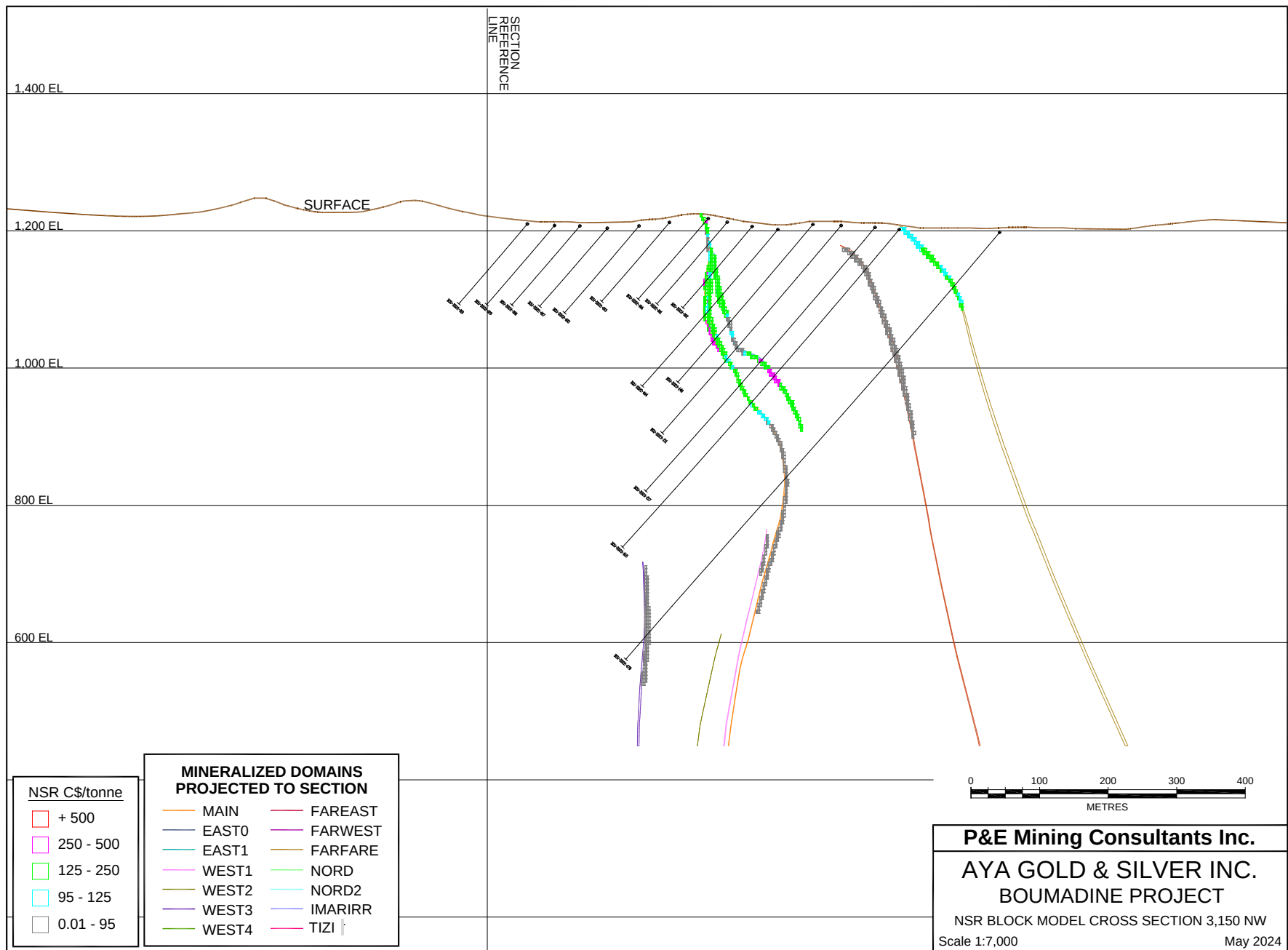


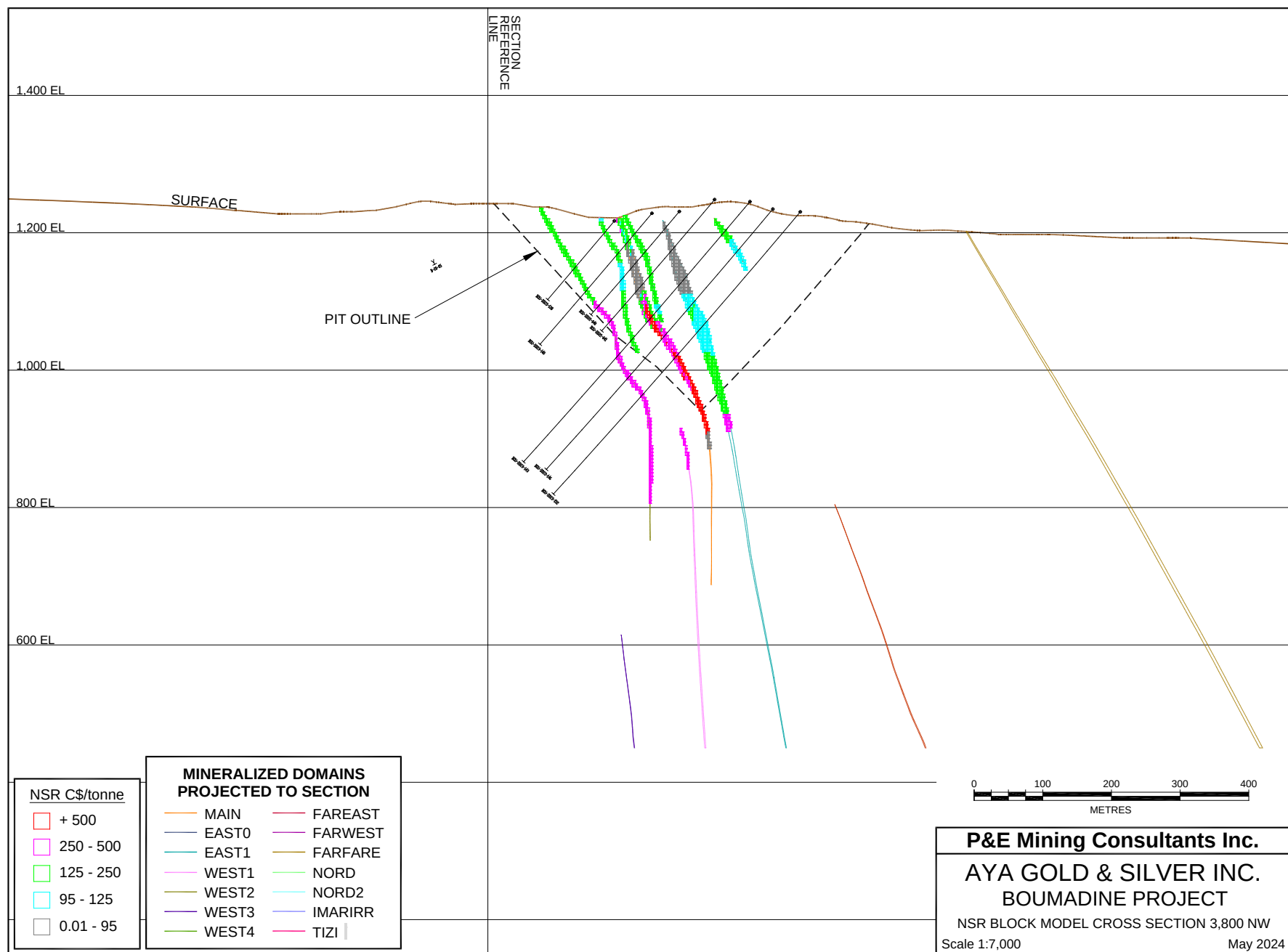


APPENDIX F NSR BLOCK MODEL CROSS SECTIONS AND PLANS

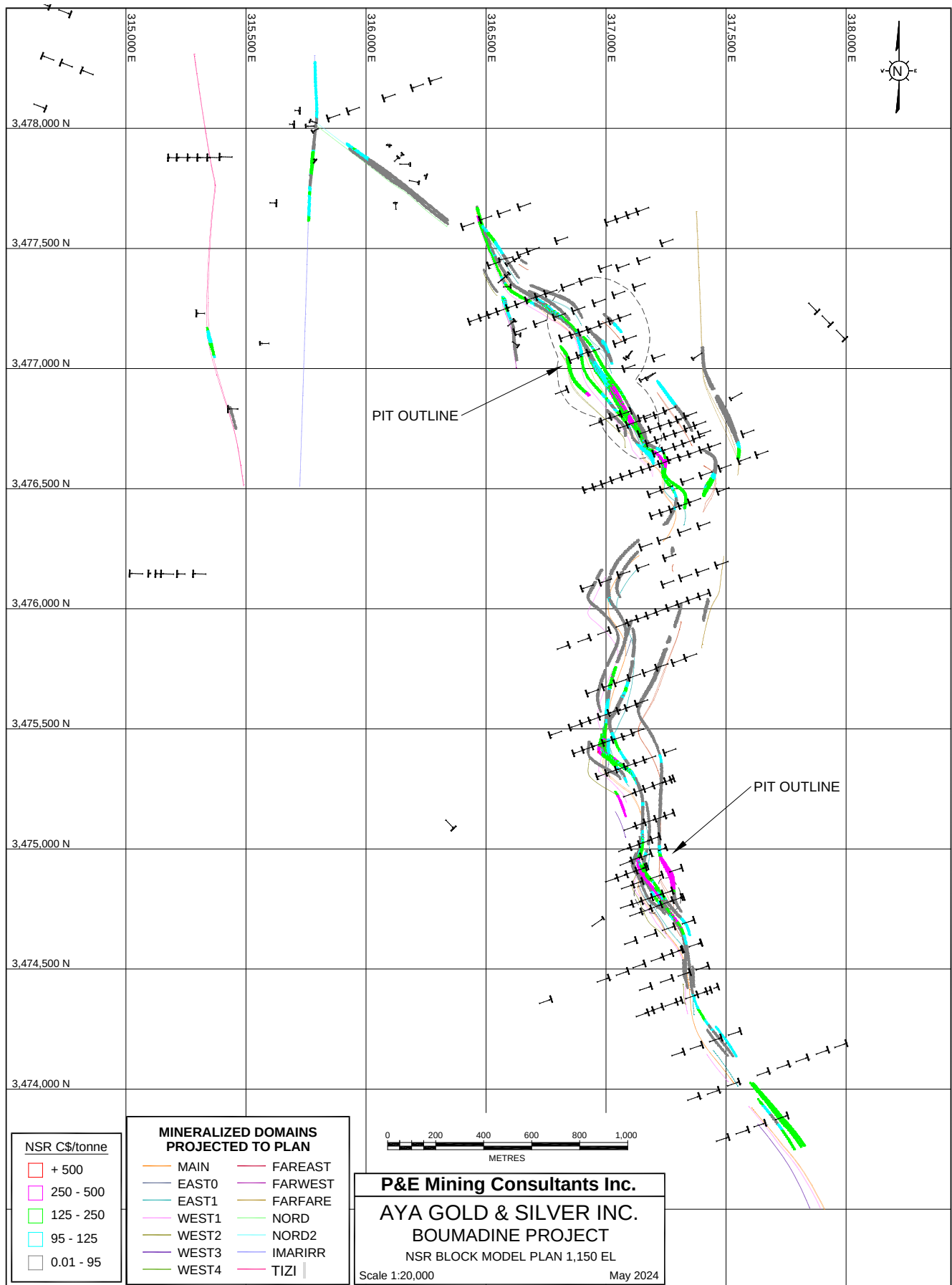


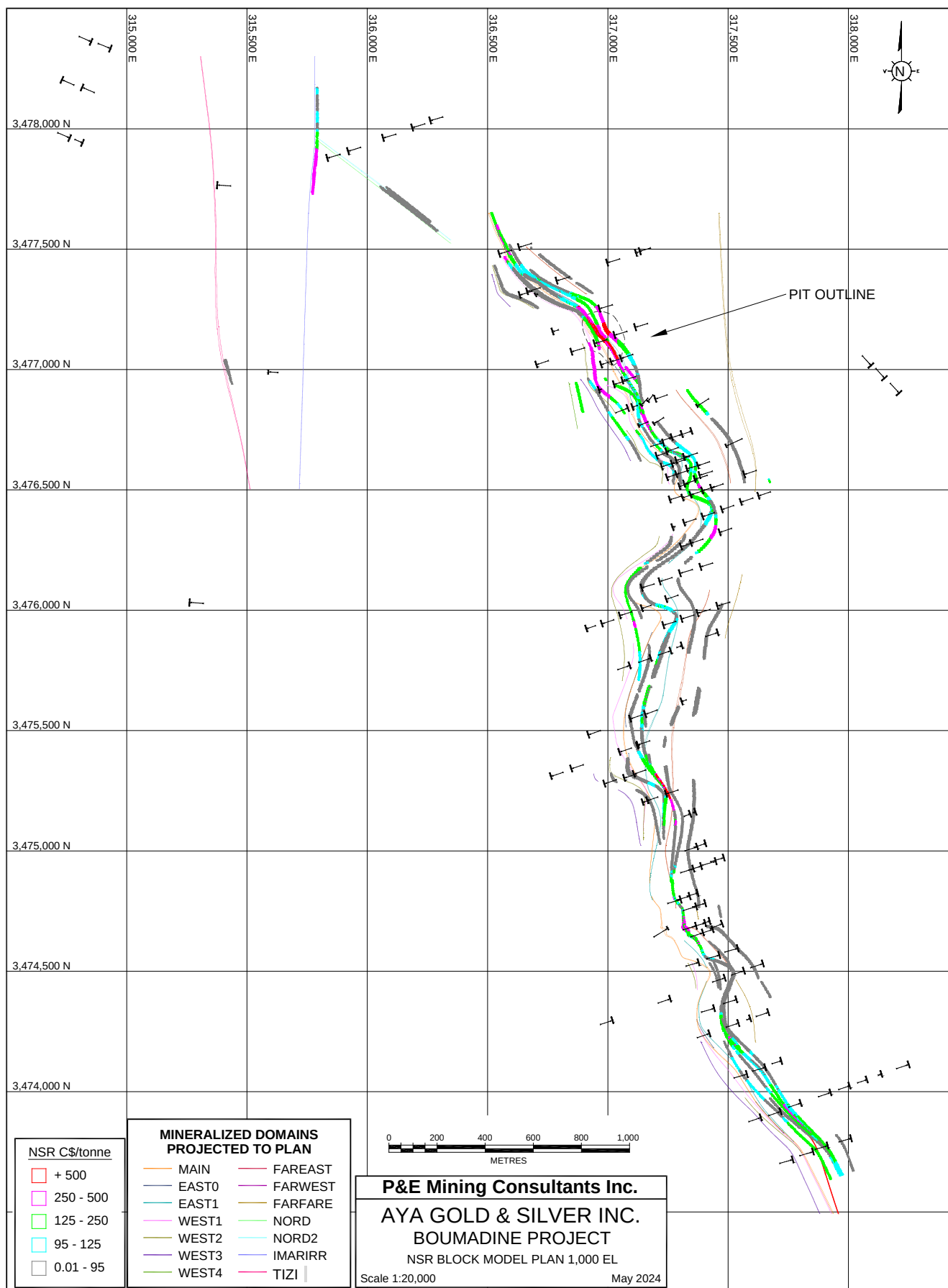


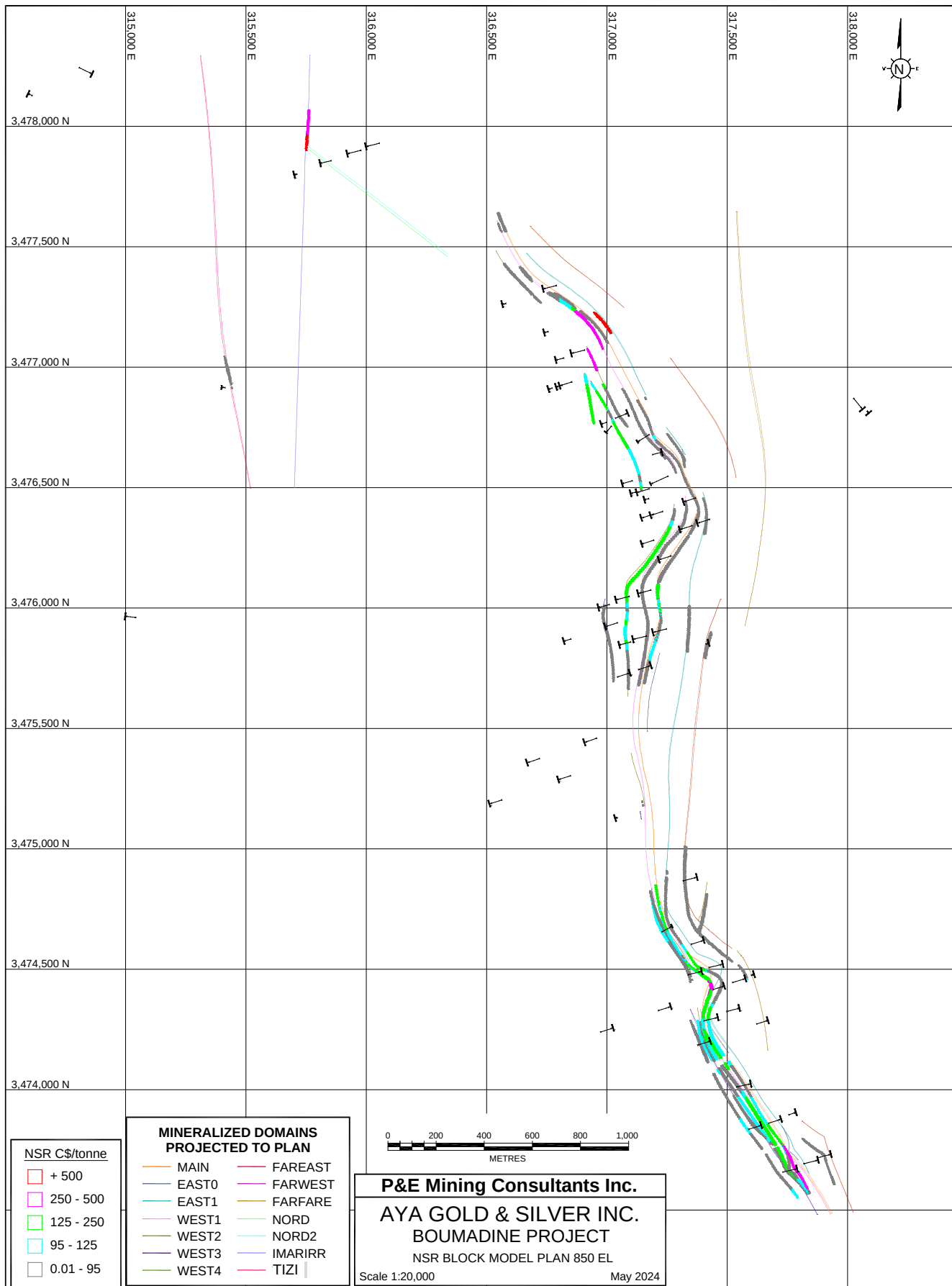




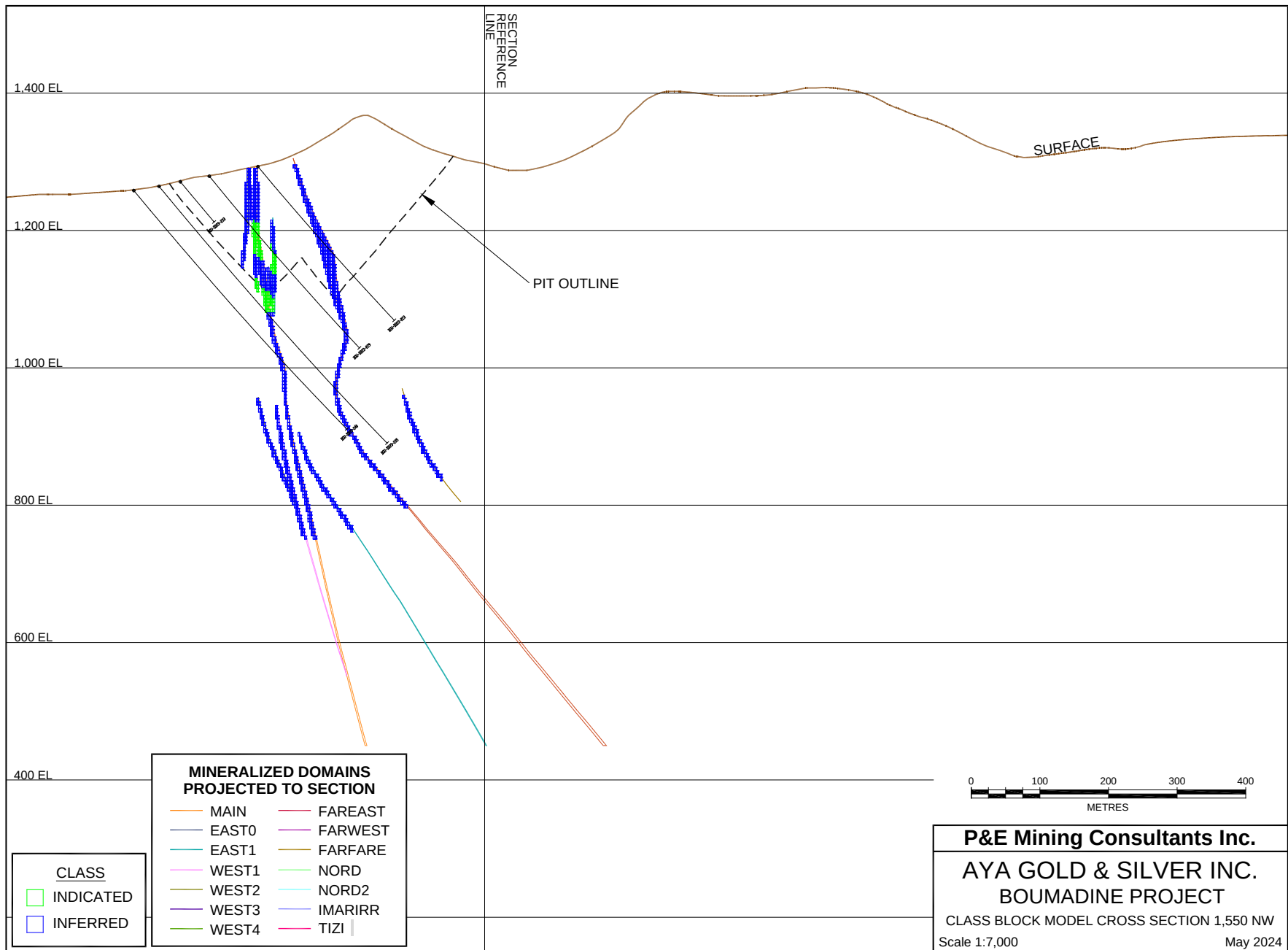
P&E Mining Consultants Inc.
AYA GOLD & SILVER INC.
BOUMADINE PROJECT
 NSR BLOCK MODEL CROSS SECTION 3,800 NW
 Scale 1:7,000 May 2024

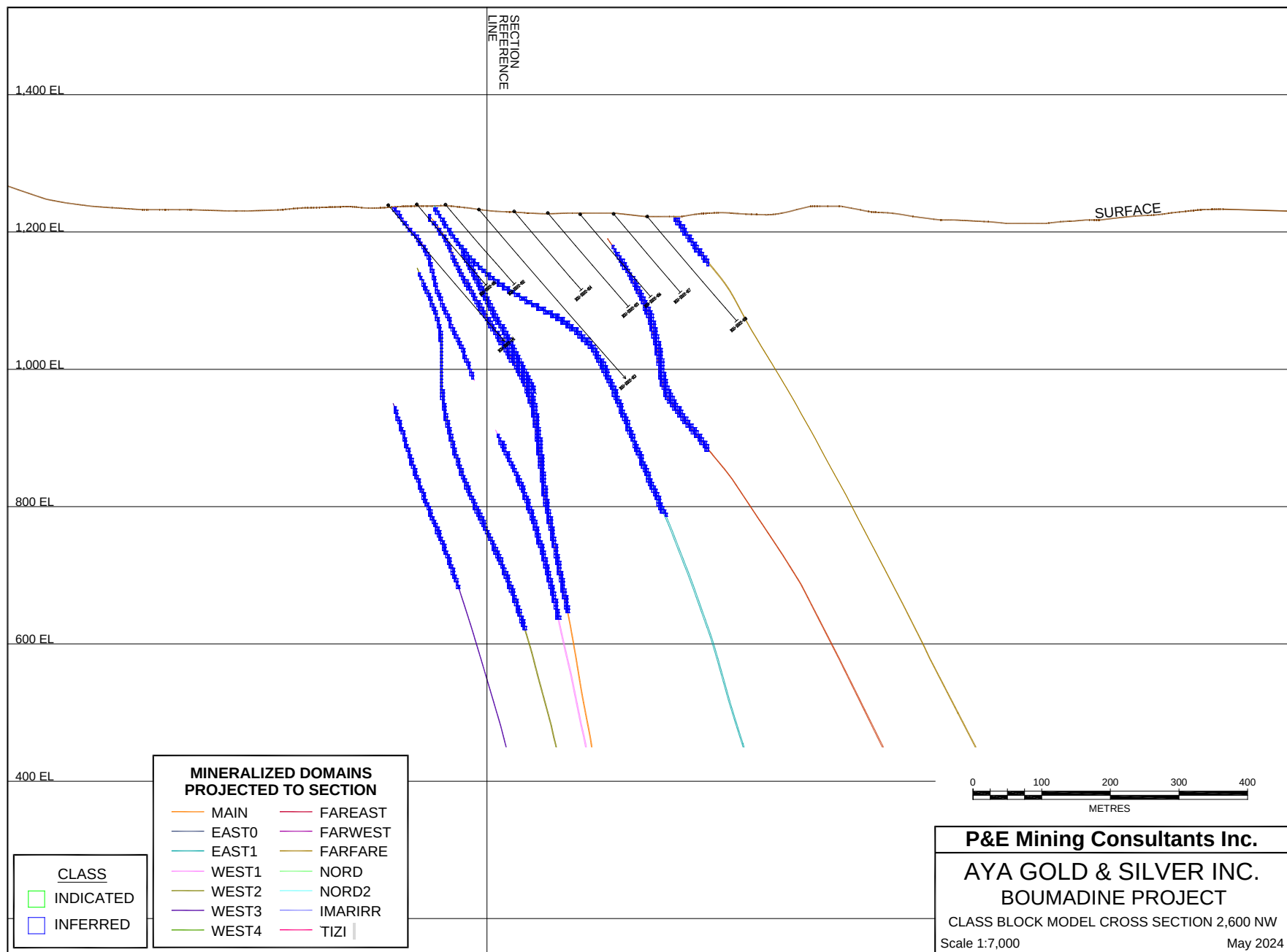


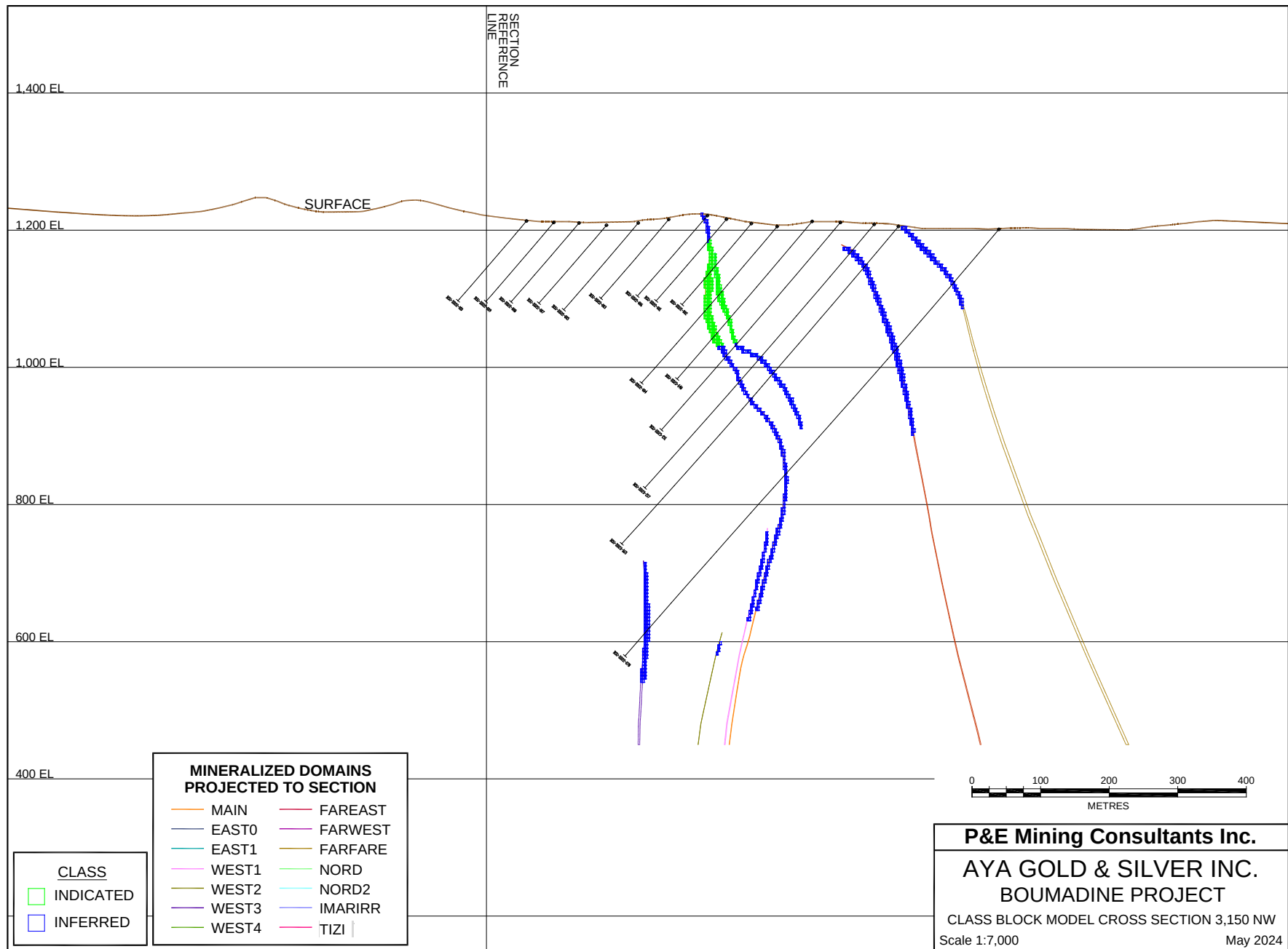


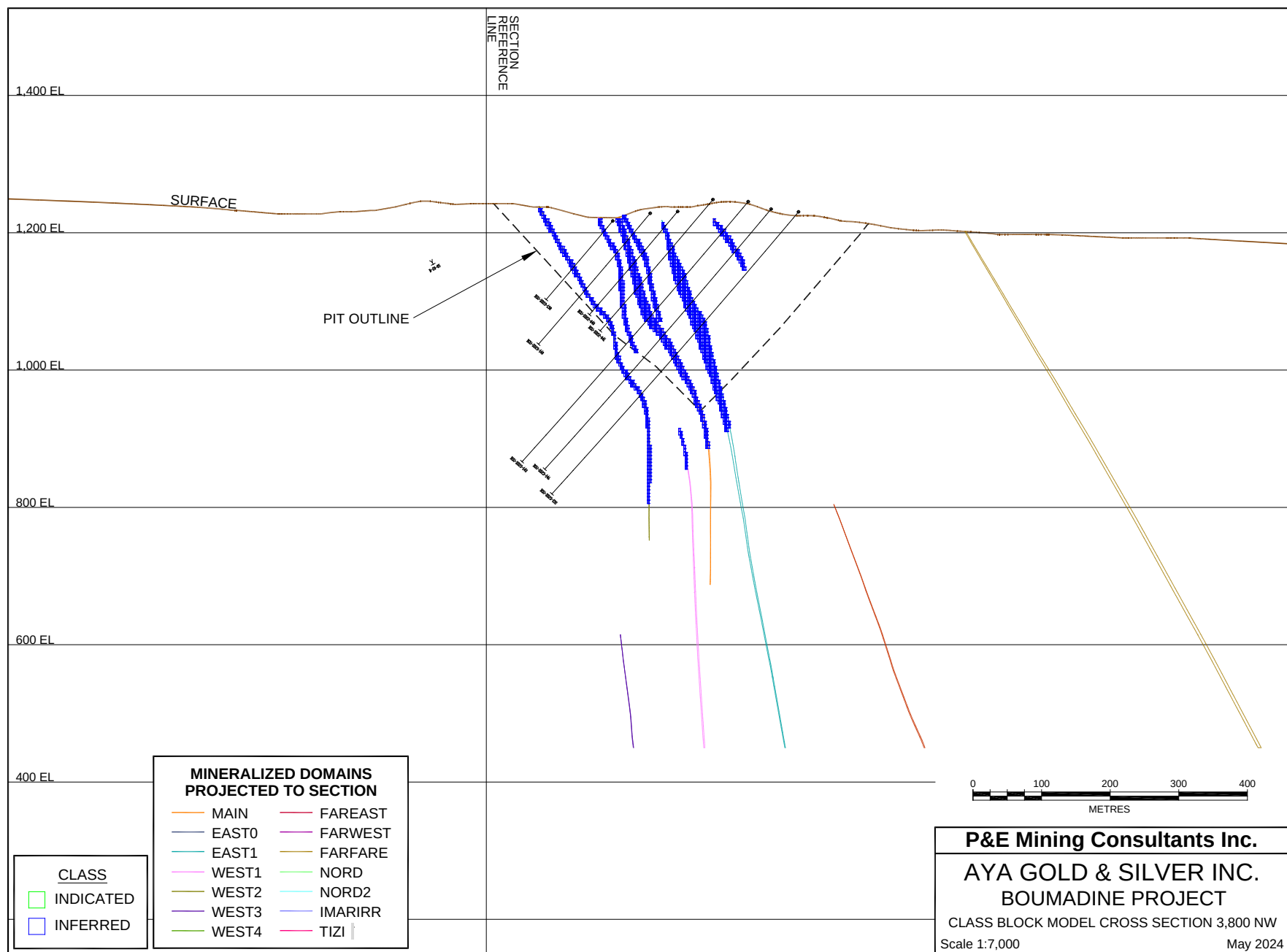


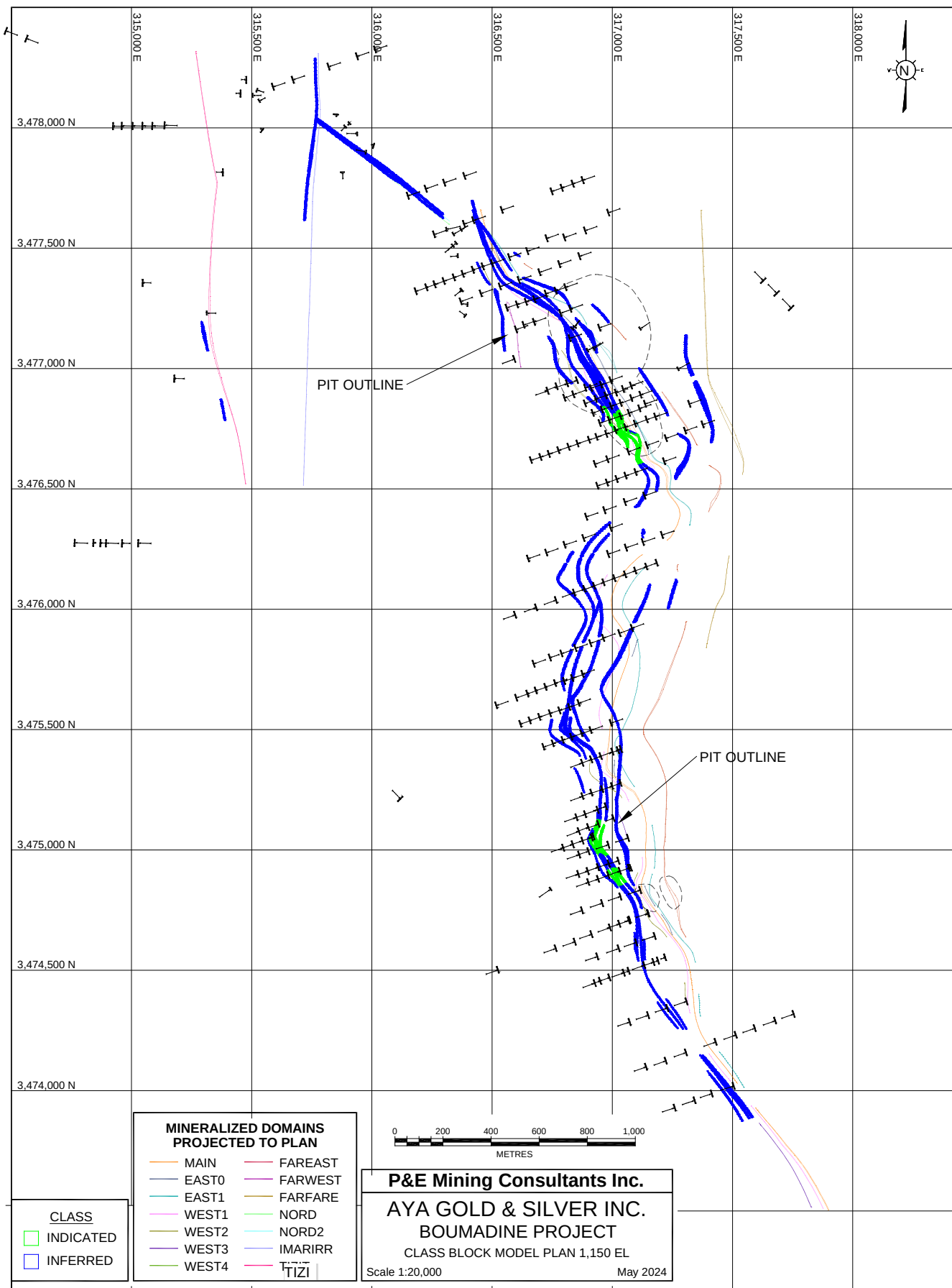
APPENDIX G CLASSIFICATION BLOCK MODEL CROSS SECTIONS AND PLANS

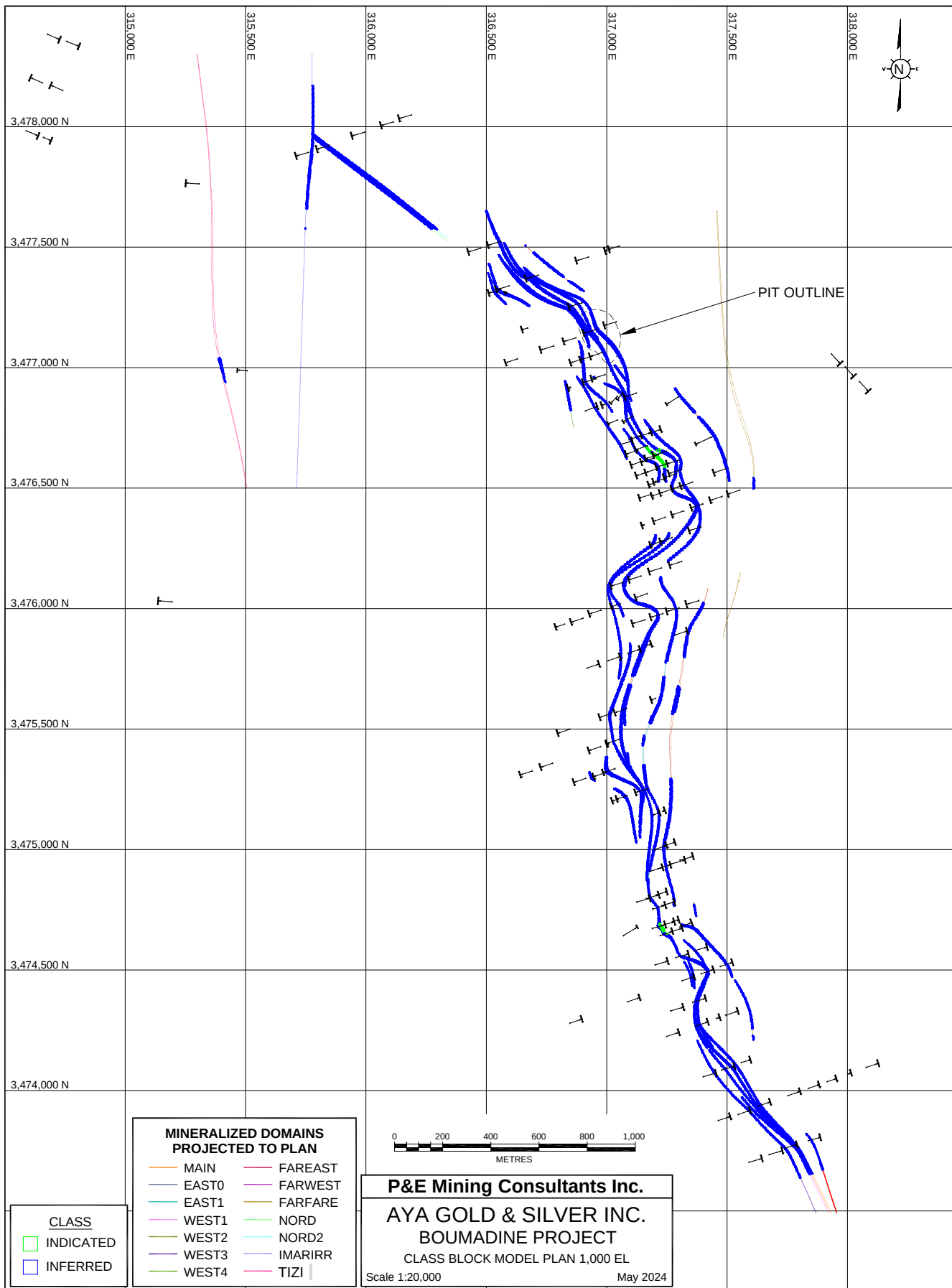


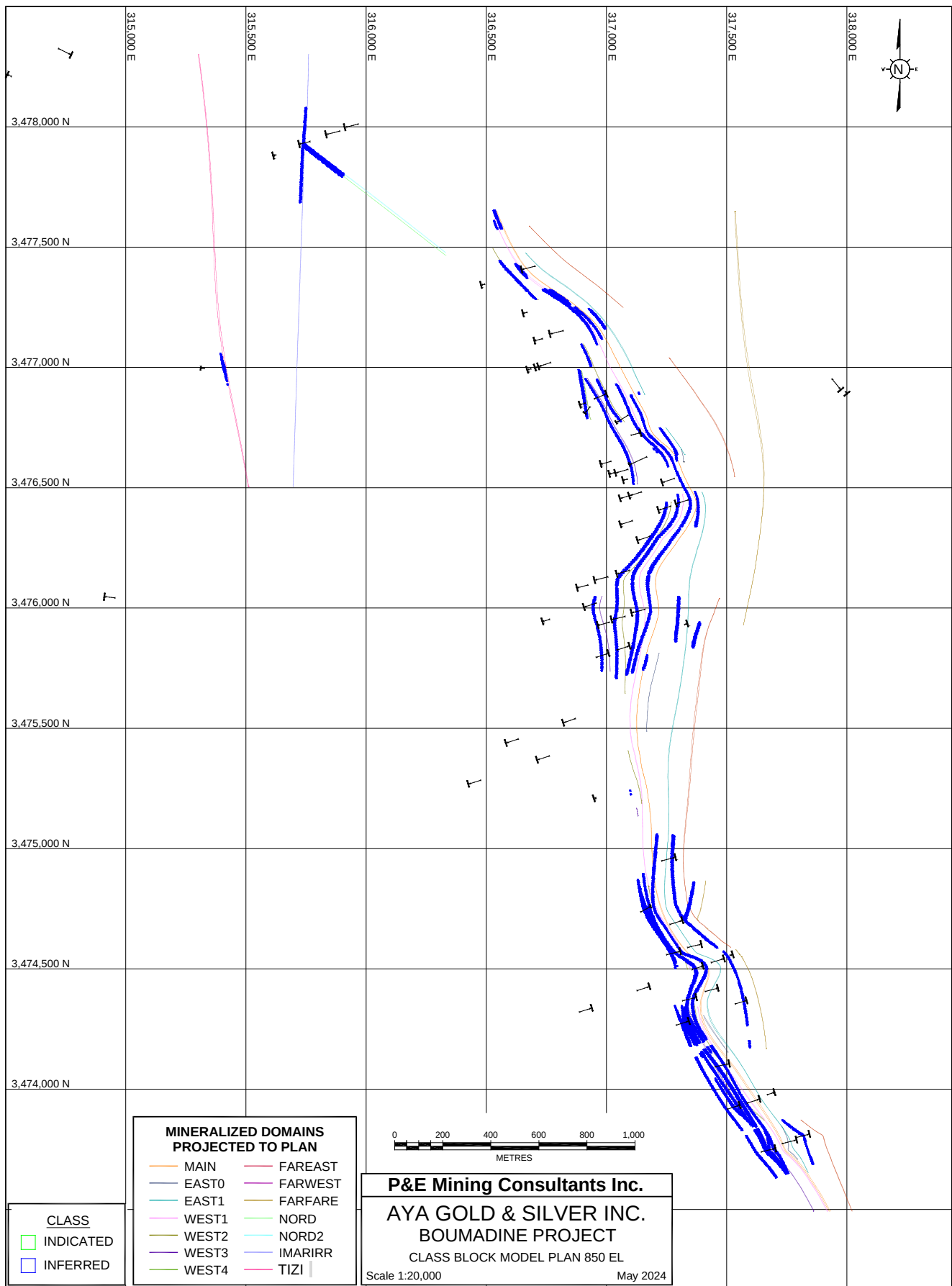












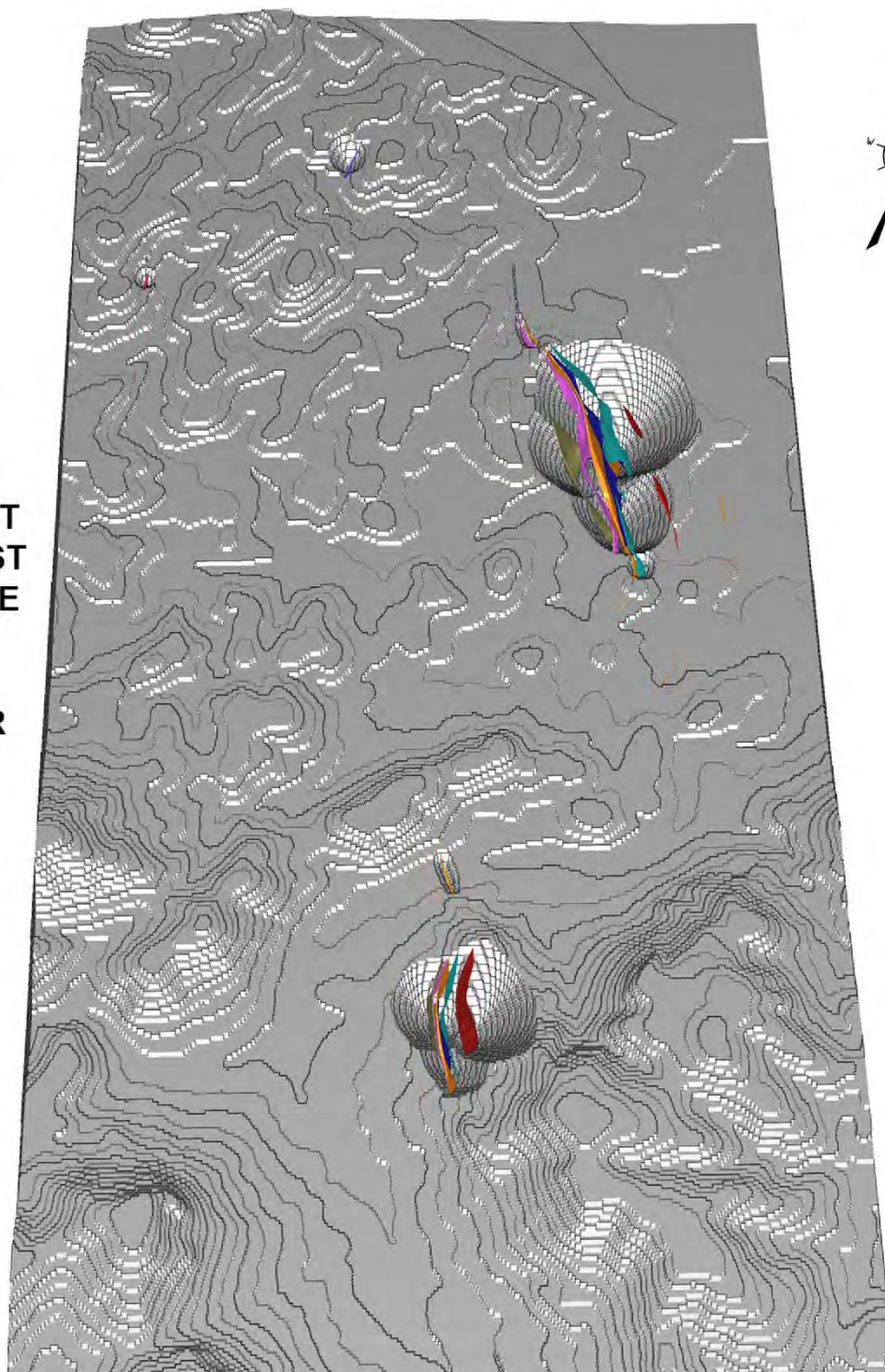
APPENDIX H OPTIMIZED PIT SHELLS

BOUMADINE PROJECT OPTIMIZED PIT SHELLS



DOMAINS

- MAIN
- EAST0
- EAST1
- WEST1
- WEST2
- WEST3
- WEST4
- FAREAST
- FARWEST
- FARFARE
- NORD
- NORD2
- IMARIRR
- TIZI



Metres