



*Titley Consulting Ltd.*



# Campo Morado Project Guerrero State, Mexico Technical Report on Preliminary Economic Assessment

Prepared for  
Telson Mining Corporation

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#### IMPORTANT NOTICE

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## 1.0 SUMMARY

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### 1.1 INTRODUCTION

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Telson Mining Corporation (Telson) requested that Titley Consulting Ltd. (TCL) and Micon International Limited (Micon) prepare an independent technical report (the Report) on a Preliminary Economic Assessment (PEA) in compliance with the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and Form 43-101F1 Technical Report on the Campo Morado Project (Campo Morado or the Project), located in Guerrero State in Mexico.

The Campo Morado Project hosts several polymetallic massive sulphide deposits containing zinc, copper, silver, gold and lead mineralization. Five deposits have been extensively drilled: G9, El Largo, Reforma, Naranjo and El Rey. The Project is comprised of a previously mined underground multi-metal mine with infrastructure, installations and equipment capable of processing 2,500 tonnes of material per day. Farallon Resources Ltd. (Farallon) began mining operations at the G9 Mine at Campo Morado in April 2009. Nyrstar NV (Nyrstar) purchased Farallon and the Campo Morado Mine in December 2010 and continued mining operations at G9 mine with some production from the El Largo deposit until production was suspended in January 2015 and the mine was placed on care and maintenance.

Telson Mining Corporation purchased the Campo Morado Mine from Nyrstar Mining Ltd. and Nyrstar Mexico Resources Corp. in June 2017 and restarted mining operations under a preproduction plan and initiated production of zinc concentrates in October 2017. Telson intends to advance preproduction towards full commercial production during 2018.

## 1.2 PRINCIPAL OUTCOMES

The principal outcomes from the PEA economic analysis are provided in Table 1-1.

**Table 1-1 Principal Outcomes**

	LOM total (USD'000)	USD/t milled	Gross Rev. (%)	Margin (%)	USD/lb ZnEq
Gross Revenue	<b>1,148,845</b>	117.98	100%		1.27
Mining	319,190	32.78	28%		0.35
Mill/Concentrator	240,745	24.72	21%		0.27
G&A	143,744	14.76	13%		0.16
<b>Direct site costs</b>	<b>703,679</b>	<b>72.26</b>	<b>61%</b>	<b>39%</b>	<b>0.78</b>
Transport, TC/RC	228,997	23.52	20%		0.25
<b>Cash Operating Costs</b>	<b>932.676</b>	<b>95.78</b>	<b>81%</b>	<b>19%</b>	<b>1.03</b>
Royalties	28,896	2.97	3%		0.03
<b>Total Cash Costs</b>	<b>961,571</b>	<b>98.74</b>	<b>84%</b>	<b>16%</b>	<b>1.06</b>
Capital Expenditure	72,700	7.47	6%		0.08
<b>Total Production Costs</b>	<b>1,034,271</b>	<b>106.21</b>	<b>90%</b>	<b>10%</b>	<b>1.15</b>
Taxes	23,038	2.37	-	-	-
<b>Net Cash Flow</b>	<b>91,535</b>	<b>9.40</b>	-	-	-
Net Present Value (8%)	65,038	-	-	-	-

Note: The PEA is preliminary in nature, and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA based will be realized. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Calendar years used are for illustrative purposes. Some figures may not sum exactly due to rounding. Unless otherwise indicated the currency used is United States dollars.

## 1.3 TERMS OF REFERENCE

The Mineral Resources disclosed in this report have been estimated and classified in accordance with CIM Definition Standards for Mineral Resources and Mineral Reserves (May 10, 2014) (CIM Definition Standards). The mine plan is conceptual and shows the potential viability of the Mineral Resources, with an economic analysis that has been prepared at a level of accuracy consistent with a PEA. Accordingly, no Mineral Reserves can be declared at this time.

## 1.4 PROJECT SETTING

Road access to the site from Mexico City is by Highway 95 to the city of Iguala. From there, all-weather asphalt two-lane Highway 51 west connects to Arcelia. The Campo Morado process plant is 30 km southeast of Arcelia on a mostly unpaved municipal road. The total driving distance from distance from Mexico City to Campo Morado is 360 km.

The project connects to the regional power grid by a 22.5 kilometre long, overhead transmission line from Arcelia with a total of five megawatts available.

## 1.5 MINERAL TENURE, ROYALTIES AND AGREEMENTS

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Titley Consulting Limited was provided with a legal opinion that Minas de Campo Morado, S.A. de C.V., (formerly named Nyrstar Campo Morado, S.A. de C.V.), is the legal recorded and beneficial holder of the Campo Morado Mining Concessions. Telson advises that on June 14, 2017, it purchased all the shares of the Mexican subsidiary companies of Nyrstar Mining Ltd. and Nyrstar Mexico Resources Corp. (collectively Nyrstar), including Nyrstar Campo Morado, S.A. de C.V. (Nyrstar México), such that these subsidiary companies are now wholly owned subsidiaries of Telson.

The Campo Morado Property is comprised of seven contiguous mining concessions covering approximately 12,090 hectares. All of the resources tabulated in the 2017 estimate occur on the Campo Morado concession. Mexican Geological Service (Servicio Geológico Mexicano or SGM), a government entity holds a 3% NSR on the Campo Morado mining concession and a 2% NSR on La Trinidad mining concession. As part of the Campo Morado Mine purchase agreement, Nyrstar has retained the right to receive a Variable Purchase Price on future zinc production on the first 10 million tons of material processed by Telson at the Campo Morado Mine when the price of zinc is at or above USD 2,100 per tonne. Telson shall pay Nyrstar the greater of either of (a) or (b) below:

- a. USD 20 per tonne of zinc sold if the zinc price received is over USD 2,100 per tonne; or
- b. a percentage of the Net Smelter Revenue received from zinc from the Campo Morado Mine based upon the following:
  - (i) If the zinc price received is greater than USD 2,100 per tonne and less than or equal to USD 2,200 per tonne, then 0.5% of the Net Smelter Revenue;
  - (ii) If the zinc price received is greater than USD 2,200 per tonne and less than or equal to USD 2,300 per tonne, then 1.5% of the Net Smelter Revenue;
  - (iii) If the zinc price received is greater than USD 2,300 per tonne and less than or equal to USD 2,400 per tonne, then 2.5% of the Net Smelter Revenue;
  - (iv) If the zinc price received is greater than USD 2,400 per tonne and less than or equal to USD 2,500 per tonne, then 3.5% of the Net Smelter Revenue; and
  - (v) If the zinc price received is greater than USD 2,500 per tonne, then 4.25% of the Net Smelter Revenue.

Telson maintains the right under the Agreement to purchase 100% of the Variable Purchase Price at any time for USD 4 million. Nyrstar shall also have a right of first refusal, on the same commercial terms and conditions offered by an arm's length third party to enter into an offtake agreement for the purchase of zinc concentrates.



Farallon Resources Ltd. commissioned the Campo Morado Mine and declared commercial production on April 1, 2009. At that time, it was called the G-9 Mine. On May 22, 2009, Farallon Resources Ltd. changed its name from to Farallon Mining Ltd (collectively Farallon). Nyrstar purchased Farallon in a friendly takeover in December 2010. The mine operated for almost six years until production was suspended in January 2015 and the mine was placed on care and maintenance.

In 2005, Mexican mining laws were changed and, as a result, all mineral concessions granted by the Dirección General de Minas (DGM) became mining concessions. There are no longer separate specifications for a mineral exploration or exploitation concession. A second change to the mining laws was that all mining concessions are granted for 50 years, provided the concessions remain in good standing. As part of this change, all former exploration concessions previously granted for 6 years became eligible for the 50-year term. Concessions are extendable within the five-year period prior to the expiry of the concession if the bi-annual fee and work requirements are in good standing.

Since the Campo Morado Project is located on a number of concessions upon which mining has previously been conducted, all exploitation work continues to be covered by the environmental permitting already in place and no further notice is required to be given to any division of the Mexican government. Telson's operating and exploitation permits appear to be valid and in good standing and Micon has no reason to believe the information provided is misleading or misrepresented.

Micon is unable to comment on any remediation that may have been undertaken by previous owners, as there appear to be no records of any previous remediation work at the site.

## **1.6 GEOLOGY AND MINERALIZATION**

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Mineralization at Campo Morado occurs in a series of volcanogenic-style massive sulphide (VMS) deposits. The massive sulphide horizons host polymetallic (base metal and precious metal) mineralization within a complex, layered sequence of felsic to intermediate volcanics. The metals of interest include zinc, copper, silver, gold and lead. Five Campo Morado mineral deposits: G9, El Largo, Reforma, Naranjo and El Rey have been extensively drilled. Parts of the G9, El Largo, Reforma and Naranjo deposits have been mined. There are a number of other, less well-defined mineral occurrences. Figure 1-2 is a plan of the Campo Morado district geology, mineral deposits and prospects.

## **1.7 MINERAL PROCESSING AND METALLURGICAL TESTING**

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Metallurgical testing of material from the G9 deposit began in June 2006 and continued through construction of the 1,500 tonnes per day mineral processing plant at Campo Morado that began in 2007. The plant was commissioned in September 2008 and by October of that year the first zinc concentrates were shipped to the Port of Manzanillo, Colima. Operation of the processing plant confirmed the amenability of G9 deposit mineralization to conventional flotation methods to recover selective zinc, copper and lead concentrates with important by-products of gold and silver. Farallon and successor Nyrstar operated this Mill for six years with ore supplied from the G9 deposit.

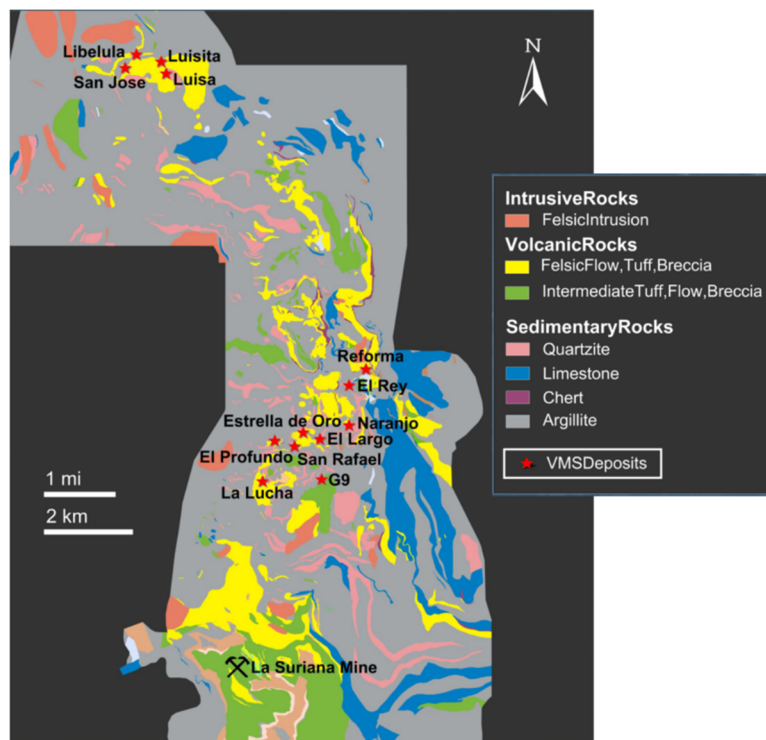
During 2014, the last year of commercial production, the mine processed 657,000 tons of ore from the G9 deposit with an average grade of 1.2g/t Au, 115.7 g/t Ag, 4.6% Zn, 1.2% Cu and 0.9% Pb. The concentrates produced in that year were 48,000 tons of Zn concentrate at 47% Zn and 29,000 tons of Cu concentrate at 13% Cu, including 6,000 ounces of Au and 0.9 million ounces of Ag. There was no mill throughput in 2015 due to the suspension of operations at the beginning of that year.

The concentrator consists of blending, crushing, two stages of milling - both in closed circuit, bulk flotation and concentrate regrinding, zinc flotation also with concentrate regrinding, thickening and filtration, and tailings disposal.

Telson Mining Corporation returned the plant to production in late October 2017 by processing development material from their renewed underground mining program.

More information on the Telson underground mining and processing work is presented in Section 16.0

**Figure 1-1 Campo Morado District Geology - Mineral Deposits & Prospects**



## 1.8 MINERAL RESOURCE ESTIMATION

The current Campo Morado resources occur in five main mineralized zones, G9, El Largo, Naranjo, Reforma and El Rey. Within these main zones, 36 sub-zones of well defined, massive and semi-massive sulphide deposits modeled three

dimensionally are used to constrain the resources. The boundaries of these sub-zones are delineated by geological and assay data from extensive drilling and underground excavation. The resource estimate is based on 1,541 surface and underground drill holes and the 33,523 assays obtained from them that intersect and occur within these mineralized zone models. The mined-out volumes of the underground excavations of previous mining operations in turn deplete the resources. Two contiguous 5-metre cube block models a used to cover this area. The overall combined resource of the five zones estimated by ordinary kriging is presented in Figure 1-2. The tabulation is based on zinc equivalency (ZnEq) that incorporates the contributions of zinc, copper, gold, silver and lead and metal recovery factors achieved at the processing facility on site. The base case at a 5.5% ZnEq cut-off is highlighted in bold typeface. The effective date for the mineral resource estimates for the five individual main mineralized zones is September 30, 2017.

Further information on the mineral resource estimates is presented in Section 14, Mineral Resources.

**Table 1-2 Campo Morado Resource Estimate 2017**

Cut-off ZnEq (%)	ZnEq (%)	Tonnes	Au (g/t)	Ag (g/t)	Cu (%)	Pb %	Zn (%)
Measured							
3.0	6.94	17,004,000	1.34	91	0.73	0.67	3.17
4.0	7.87	13,412,000	1.49	104	0.76	0.78	3.71
<b>5.5</b>	<b>9.27</b>	<b>9,292,000</b>	<b>1.70</b>	<b>124</b>	<b>0.82</b>	<b>0.94</b>	<b>4.56</b>
7.0	10.71	6,318,000	1.88	143	0.87	1.11	5.44
Indicated							
3.0	5.78	16,848,000	1.25	85	0.68	0.61	2.25
4.0	6.62	12,324,000	1.42	99	0.72	0.73	2.68
<b>5.5</b>	<b>7.94</b>	<b>7,335,000</b>	<b>1.70</b>	<b>123</b>	<b>0.78</b>	<b>0.92</b>	<b>3.31</b>
7.0	9.32	4,086,000	1.96	151	0.86	1.12	3.94
Measured + Indicated							
3.0	6.36	33,852,000	1.29	88	0.70	0.64	2.71
4.0	7.27	25,736,000	1.46	102	0.74	0.76	3.22
<b>5.5</b>	<b>8.68</b>	<b>16,627,000</b>	<b>1.70</b>	<b>123</b>	<b>0.80</b>	<b>0.93</b>	<b>4.01</b>
7.0	10.16	10,404,000	1.91	146	0.87	1.11	4.85
Inferred							
3.0	5.03	3,316,000	0.98	76	0.52	0.58	2.10
4.0	5.85	2,152,000	1.11	90	0.55	0.71	2.54
<b>5.5</b>	<b>7.27</b>	<b>988,000</b>	<b>1.32</b>	<b>116</b>	<b>0.64</b>	<b>0.92</b>	<b>3.20</b>





7.0	8.75	416,000	1.52	148	0.76	1.10	3.78
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*Notes to the Mineral Resource Estimate Tables 14-1 through 14-6 inclusive:*

*Mineral Resources have an effective date of November 5, 2017; Eric Titley, PGeo, Titley Consulting Ltd., is the Qualified Person responsible for the Mineral Resource estimate.*

*Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*

*The Mineral Resources were depleted to December 2014, the last phase of mining, by removing all material from the tabulation found in the excavation solids models provided by Telson Mining Corporation.*

*Zinc equivalent calculations used metal prices of USD 1.20/lb for zinc, USD 2.80/lb for copper, USD 17/oz for silver, USD 1150/oz for gold and USD 0.90/lb for lead and metallurgical recoveries of 70% for zinc, 68% for copper, 38% for silver, 25% for gold, and 60% for lead. Metal price assumptions used in the ZnEq calculation are the same assumptions used in establishing the cut-off for the estimates and reasonable prospects of eventual economic extraction.*

*A 5.5% ZnEq cut-off in bold is considered to be appropriate for the sub-level caving mining method planned for extraction of the mineralization in the various deposits. All Mineral Resource estimates, cut-offs and metallurgical recoveries are subject to change as a consequence of more detailed economic analyses that would be required in Pre-Feasibility and Feasibility studies. The 5.5% ZnEq cut-off in bold is considered the base case Mineral Resource estimate. Other estimates are reported in the context of cut-off grade sensitivity analysis.*

*Gold grade estimates are reported as grams per tonne rounded to two decimal places. Silver grade estimates are reported as grams per tonne rounded to an integer. Copper, lead, zinc and zinc equivalent estimates are reported as percent rounded to two decimal places. Tonnages are reported as metric tonnes round to one thousand tonnes.*

*Rounding as required by reporting guidelines may result in apparent summation differences.*

TCL is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues exist that would materially affect the above estimated mineral resources. However, mineral resources that are not mineral reserves do not have demonstrated economic viability.

The November 8, 2017 mineral resource estimates have been prepared in accordance with the CIM Definition Standards and the estimates are suitable for use in the PEA of the Campo Morado Project.

## **1.9 MINERAL RESERVE STATEMENT**

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This section is not relevant to this PEA Technical Report.

## **1.10 MINING METHODS**

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The previous operators of the Campo Morado mine used an underhand bench, open stoping method that was mostly employed at the G-9 mine, with eight to 15 m wide stopes developed by means of slashed, five metre high, fully supported top drives that extend to the planned limit of individual stopes.



Where appropriate, primary stopes were backfilled with 500 psi / 3.45 MPa CRF backfill, following which similarly dimensioned, intervening secondary stopes are extracted and then infilled with uncemented rockfill.

Panel and rib pillar layouts or formal room and pillar layouts, with second pass footwall bench lifts as appropriate, were used where the use of CRF backfill, hence the extraction of secondaries, were not viable options due to the presence of overlying mineralized zones, such as in the Abajo Zone and portions of the North Zone.

As a part of its ongoing work to bring the mine back into production, Telson is in the process of changing the mining method to that of sub-level caving. Telson plans to utilize this bulk mining method for extraction of the mineralization in the various deposits.

### **1.11 PERSONNEL AND EQUIPMENT**

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All mining activities are being carried out by personnel hired by Telson. Telson has acquired the appropriate principal and auxiliary mining equipment required to produce the tonnage in accordance with the mining plan. Telson also provides contract supervision, geology, engineering and planning and survey services, using its own employees.

### **1.12 PROPOSED PRODUCTION PLAN**

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The El Largo deposit is currently the primary focus of Telson's development mining activity to maintain a steady flow of material to the Campo Morado process plant. As of February 2018, the plant is processing close to 2,000 tpd (average 1,580 tpd in January) and is ramping up to achieve a target of 2,500 tpd. A subset of the resources estimated in Section 14 is used in the mine plan.

### **1.13 RECOVERY METHODS**

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The Campo Morado plant design is based on commercially-proven technologies and uses conventional reagent protocols to produce selective copper, lead and zinc concentrates. The mill is historically capable of processing approximately 2,200 t/d, from the original design of 1,500 tpd and throughput is currently ramping up to achieve this target. Telson is additionally intending to target a sustainable throughput of 2,500 tpd; although this will depend on metallurgical performance and additional grinding capacity may be required, (two new SMD mills are available on site). The mill flowsheet includes principal unit processes of primary crushing, autogenous primary grinding, secondary grinding in a VTM, rougher and cleaner flotation, re-grinding in SMDs, concentrate thickening and pressure filtration.

Zinc, copper and lead concentrates are transported to the port of Manzanillo for shipment to smelters.

## **1.14 PROJECT INFRASTRUCTURE**

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All infrastructure required for the current Campo Morado Mine mining and processing operations is in place and operational. This includes the underground mine, access roads, power lines, water pipelines, offices, warehouses and accommodations, process plant/concentrator, stockpiles, backfill plant and tailings storage facilities.

## **1.15 ENVIRONMENTAL, PERMITTING AND SOCIAL CONSIDERATIONS**

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### **1.15.1 ENVIRONMENTAL CONSIDERATIONS**

Environmental licensing requires a number of on-going monitoring programs. Telson provided documentation to the relevant regulatory authorities. Telson is in the process of implementing the relevant monitoring programs at the Campo Morado Project and will be reporting the results of the programs to the appropriate regulatory authorities as work progresses in bringing the project back into full production.

### **1.15.2 TAILINGS STORAGE FACILITIES**

Tailings management at the Campo Morado Mine consists of two tailings storage facilities (TSFs), Naranjo Alto B TSF and the Naranjo Bajo TSF. Tailings produced in the process plant are pumped in the form of a slurry to the tailings facility where they settle. Water is recovered and returned to the process plant.

Naranjo Bajo reached its design storage capacity in September 2014. It is located just west of the portal entrance to the mine in the valley below the processing facility. The Naranjo Alto B TSF Main Embankment and Diversion System were constructed in 2014 to provide up to two years of tailings storage capacity and were used from August 2014 to early 2015, when production ceased. Although a conceptual design indicates a 15-year storage capacity at 2,200 tpd for a final embankment crest elevation of EL. 1332 m, the Stage 1 embankment was constructed to an elevation of EL. 1285 m (reduced from the initial detailed design of EL. 1300 m). Detailed design only exists for the crest elevation of EL. 1300m.

Therefore, the TSF embankment and water management detailed design for the LOM must be carried out urgently now that operations have restarted, due to the limited current storage capacity (approximately 1 - 2 years) and Telson's intention to increase current throughput to initially 2,200 tpd and ultimately 2,500 tpd.

The area is mountainous, seismically active and experiences intense rainfall events. The mine tailings have a high acid-generating potential, due to the presence of pyrite. Consequently, the tailings deposition strategy requires a robust embankment design with designed water management strategies. The TSF was approved on a zero-discharge basis, including provision for a one in 200-year flood event. The design also includes provisions for closure.

### **1.15.3 WATER MANAGEMENT**

Environmental requirements dictate that the mine has a zero surface water discharge from the TSF. The tailings dams have diversion channels to secure the areas upstream and route storm flows downstream around the dams. Telson is in the process of revising Nyrstar's previous water balance program to ensure that, in addition to the needs of the operations at Campo Morado, the site maintains its zero surface water discharge requirements and no process water is discharged to the environment.

### **1.15.4 CLOSURE AND RECLAMATION PLANNING**

Telson has not been asked to post a reclamation bond and, to the best of Micon's knowledge, there does not appear to be any legal requirement for posting a reclamation bond in Mexico. Reclamation issues are instead left to operators and it appears usual to take out civil responsibility insurances that typically cover mine reclamation, tailings dam failures and similar potential environmental impacts/disasters that could befall an operation.

Telson is in the process of outlining reclamation plans and when it completes them, they will most likely be conducted in stages as each zone is mined out and a portion of the infrastructure moves with the development. The processing facility and tailings ponds will most likely be among the last areas to be reclaimed since the processing plant will be used for all of the deposits. The first tailing pond can still be used for water storage if needed, so it is unlikely full reclamation will be conducted on the tailings pond at least in the foreseeable future.

### **1.15.5 PERMITTING CONSIDERATIONS**

As the Campo Morado Project is located on a number of concessions upon which mining has previously been conducted, all exploitation work continues to be covered by the environmental permitting already in place and no further notice is required to be given to any division of the Mexican government, at this time. Telson's operating and exploitation permits appear to be valid and in good standing.

Micon is not aware of any other permits that Telson needs to conduct the mining and processing operations at the Campo Morado mine. Further permits may be necessary once Telson starts to conduct exploration of the remaining portions of the property to build roads, drill pads, etc. Further permitting will most likely be needed as Telson expands and raises the dams at the tailing facility as production continues beyond the current two-year capacity.

### **1.15.6 SOCIAL CONSIDERATIONS**

Telson has been in discussions with the various local communities since its acquisition and re-opening of the Campo Morado Project to work on areas which mutually are beneficial, and which will assist in improving the living standards of the locals. Discussions related to the needs of the individual communities and groups within the area are ongoing.

Wherever possible, Telson has hired locals to work at the Project. This has reduced unemployment in the area and has increased the standard of living for locals employed at the mine.



A private security firm, as well as a small unit from the Mexican army, cover security for the site. Security personnel operate at the main gate at the entrance to the property and patrol the property to ensure that unauthorized individuals do not encroach onto the property. The military provides secondary support for the security of the mine.

At the time of Micon's site visit the security at the Campo Morado Project was good, and there had been no incidents. However, given the interplay between the cartels, federal police and military within the state and in Mexico, in general, security will remain a priority at the site.

## **1.16      MARKETS AND CONTRACTS**

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Telson has not conducted any market studies as the sale of lead and zinc concentrates are subject to industry standard terms between the sellers and the buyers. Zinc, lead and copper concentrates produced at mines like Campo Morado are sold into the world markets through various agreements between the companies/mines producing the concentrates and smelters or commodity traders. These agreements usually specify that the concentrates are a certain quality and that any deleterious elements are minimized and where they exceed the minimum values they are subject to various penalties. In some cases, the deleterious element amounts within a concentrate can be high enough that concentrates are rendered non-salable.

Telson currently produces a lead and zinc concentrate at the Campo Morado mine, which is subject of to an offtake agreement with Trafigura Mexico S.A. de C.V. (Trafigura). At the same time, Telson negotiated its offtake agreement it also negotiated a USD 5 million loan facility with Trafigura. The Key Terms of Telson's Loan and Offtake Agreements with Trafigura is summarized in Table 1-3.



**Table 1-3 Summary of the Key Terms for the Loan and Offtake Agreement**

Loan / Agreement	Key Terms
USD 5 Million Loan Facility	USD 5 million received in Telson's bank account on September 15, 2017.
	Three-year term with six-month grace period followed with 30 repayment installments.
	Loan facility matures in September 2020 and bears interest at rate equal to LIBOR (3M) +5%.
	No hedging Conditions.
	No equity-based payments.
Offtake Agreement	51-month term ending December 2021 for Campo Morado Pb and Zn concentrate production.
	Fixed minimum tonnage to be sent during the offtake term.
	Very competitive industry payable metal terms at LME and LBMA Spot prices.
	Access to prompt payments 5 days after delivery, providing excellent liquidity to the operation.
	Competitive transport charges.

Telson has provided industry standard security to Trafigura in the form of a corporate guarantee, a promissory note plus a pledge of the shares of Telson 100% owned subsidiary company Nyrstar Campo Morado, S.A. de C.V. (since renamed Minas de Campo Morado, S.A. de C.V.). The extent of Telson's liability to Trafigura within the Agreements under Mexican law is limited to the amount of the offtake loan plus interest.

For the purposes of the PEA, it is assumed that the loan will be paid off and that the offtake agreement with Trafigura will be renewed in due course.

### 1.17 CAPITAL AND OPERATING COST ESTIMATES

The Project is a previously operating mine that is being brought back into production. Consequently, this PEA treats the initial capital investment as a sunk cost, and all subsequent investment is considered as sustaining capital expenditure.

Over the LOM period, sustaining capital is provided for as shown in Table 1-4.

**Table 1-4 Summary of the Key Terms for the Loan and Offtake Agreement**

Sustaining Capital	LOM TOTAL (USD'000)
Development	25,500
Mill/Concentrator	12,000
Tailings Storage	10,000
Infrastructure (Other)	10,000
Social Responsibilities	12,000
Rehabilitation & Closure Costs	3,200
<b>Total</b>	<b>72,700</b>

Operating cost estimates for the Project are forecast on the basis of previous operating experience at the Project, modified where appropriate to reflect increased throughput and proposed changes in the underground mining method.

Over the LOM period, operating costs are forecast as shown in Table 1-5.

**Table 1-5 Operating cost estimate for the Campo Morado Mine**

Project Operating Costs	LOM Average USD/t milled	LOM TOTAL USD'000
Selling Costs	23.52	228,997
Royalties	2.97	28,896
Mining	32.78	319,190
Processing	24.72	240,745
G&A	14.76	143,744
<b>TOTAL Operating Costs</b>	<b>98.74</b>	<b>961,571</b>

The LOM capital and operating costs as discussed in the PEA will most likely be further refined as Telson continues to bring the Campo Morado Project back into production and continues to optimize the various costs at site.

## 1.18 ECONOMIC ANALYSIS

Micon has prepared its assessment of the project based on a discounted cash flow model, from which Net Present Value (NPV) can be determined. A real discount rate of 8.0% is applied to the base case cash flow.

The prices used in the cash flow projection are rolling average prices for each metal for the 12 months ended January 2018, which Micon believes provide a reasonable estimate of project revenues for this PEA. The prices used are shown in Table 1-6.



**Table 1-6 Metal Price Forecast**

Metal	Unit	Price (USD/unit)	Unit	Price (USD/unit)
Zinc	tonne	2,954.70	pound	1.340
Lead	tonne	2,346.40	pound	1.064
Copper	tonne	6,274.20	pound	2.846
Silver	troy ounce	17.08		
Gold	troy ounce	1,269.00		

Since the project has already been constructed, initial capital costs are treated as sunk. However, LOM sustaining capital is estimated at USD 72.7 million, mainly for underground development and expansion of tailings storage capacity.

Total cash costs over the LOM period average USD 98.74/t milled. Costs incurred in Mexican pesos (MXN) have been converted at the rate of MXN 18.75/USD.

Buy-out of a royalty to Nyrstar is assumed to take place prior to the cash flow period and is treated as a sunk cost. A 3% royalty payable to SGM on the NSR value of concentrate sales (before transport costs) has been provided for in the cash flow model.

This PEA is preliminary in nature; it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

Annual base case cash flows are presented in Figure 1-2 (over), and unit costs are presented on a zinc equivalent basis in Table 1-7



Figure 1-2 Annual Cash Flow Forecast

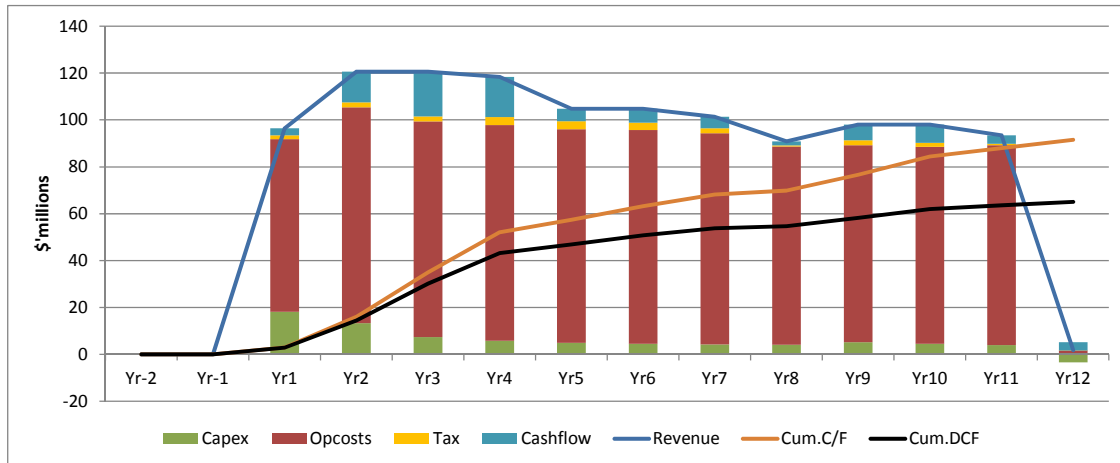


Table 1-7 Unit cost estimate on Zinc Equivalent Basis

	LOM total (USD'000)	USD/t milled	Gross Rev. (%)	Margin (%)	USD/lb ZnEq
Mining	319,190	32.78	28%		0.35
Mill/Concentrator	240,745	24.72	21%		0.27
G&A	143,744	14.76	13%		0.16
<b>Direct site costs</b>	<b>703,679</b>	<b>72.26</b>	<b>61%</b>	<b>39%</b>	<b>0.78</b>
Transport, TC/RC	228,997	23.52	20%		0.25
<b>Cash Operating Costs</b>	<b>932,676</b>	<b>95.78</b>	<b>81%</b>	<b>19%</b>	<b>1.03</b>
Royalties	28,896	2.97	3%		0.03
Production Taxes	-	-	0%		-
<b>Total Cash Costs</b>	<b>961,571</b>	<b>98.74</b>	<b>84%</b>	<b>16%</b>	<b>1.06</b>
Capital Expenditure	72,700	7.47	6%		0.08
<b>Total Production Costs</b>	<b>1,034,271</b>	<b>106.21</b>	<b>90%</b>	<b>10%</b>	<b>1.15</b>

At an annual discount rate of 8.0%, the discounted cash flow evaluates to a net present value (NPV) of USD 65 million.

Owing to the absence of pre-production capital expenditures in the forecast period, no internal rate of return (IRR) or payback period can be determined.

The project is almost equally sensitive to revenue drivers and operating costs with NPV reduced to near-zero with an adverse change of 14% and 12% in each, respectively. The project is least sensitive to changes in capital cost, which is consistent with the relatively minor amounts of capital in the cash flow forecast.

## 1.19 OTHER RELEVANT DATA

Telson restarted operations for production at Campo Morado Mine in October 2017 and began processing development material from underground at an approximately 1,400 tonnes per day. About 29,500 tonnes of coarse material was delivered to the mill site crushing patio and at least 9,000 tonnes were placed on the crushed material stockpile by October 23, 2017. The material mined by Telson since taking over the Campo Morado Project has not been depleted from the 2017 mineral resource estimate.

## 1.20 RISKS AND OPPORTUNITIES

A summary of key risks and opportunities identified by the QPs is provided in Table 1-8.

**Table 1-8 Risks and Opportunities**

Discipline	Opportunity	Risk
Geology and exploration	There are a number of exploration targets on the Campo Morado property that represent an excellent upside opportunity. They have the potential to add to the resource base with further work.	
Mineral resources	Several drill holes with missing assay have been assigned zero grade. If this information is found, it will likely have a positive impact on the grade in the local area of these drill holes.	A number of the Mineral Resource assumptions for reasonable prospects of eventual economic extraction at the Reforma, Naranjo, El Largo and El Rey deposits are based on analogues to G-9, including metallurgical recoveries and mining methods. Actual data collected from the deposits may vary from these assumptions. There is a risk some of the Measured Mineral Resources at Reforma, Naranjo and El Rey will not have the appropriate drill support until grade control drilling is completed. The tonnages and grade for the potentially recoverable pillars at G9 are based on the assumption that a practical, economically feasible method can be developed to mine them.
Mine plan	The mining sequence has been prepared on an area-by-area basis and so there may be an opportunity to improve the production grade profile in a more detailed plan.	Evaluation is at a PEA level only. Mining engineering may reveal planning constraints not recognised in this study.
Tailings	Subject to further testwork, leach recovery of copper, gold and silver from reprocessing existing tailings may be possible.	Expansion of storage capacity required to accommodate material in the PEA plan.



Discipline	Opportunity	Risk
Process	<p>Equipment for finer grinding is on site but not yet installed.</p> <p>The Campo Morado tailings have a high precious metals content that may, in the future, be reprocessed if an economically viable method for precious metals recovery is developed</p>	Achieving planned plant throughput and recovery into concentrate may increase operating costs.
Infrastructure	Telson has all of the infrastructure currently necessary to operate the Campo Morado Project.	
Environmental, closure, permitting and social	<p>Telson has all the current environmental permits to operate. The communities and various groups in the area appear to support the resumption of mining activities.</p> <p>Security is good at the present time, with a small military component on site, and Telson has the support of all social groups or factions in the area. Security should continue to improve as Telson continues to demonstrate a longer term commitment to the area</p>	<p>Environmental laws are tightened and become more stringent as a result of Mexico's involvement in the Paris Agreement, NAFTA and various other Free Trade agreements.</p> <p>Security becomes unstable within the state</p>
Financial	Unit cost savings might be possible in some areas at the planned higher rates of plant throughput.	<p>Project returns are sensitive to metal prices and any change in NSR terms.</p> <p>Any significant changes to the fiscal regime would affect the cashflow forecast.</p>

## 1.21 INTERPRETATION AND CONCLUSIONS

The completed PEA provides a conceptual life of mine plan based on the estimated mineral resources. This information allows investors to understand the economic potential of the Campo Morado multi-metal project. The PEA mine plan is achievable under the set of assumptions and parameters presented. The mine plan is partly based on Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA based on these Mineral Resources will be realized.

## **1.22 RECOMMENDATIONS**

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### **1.22.1 INTRODUCTION**

Telson's Board has authorized the re-opening of the Campo Morado mine in the Mexican State of Guerrero after purchasing it from Nyrstar. As part of its reopening of the Mine, it has conducted an updated mineral resource estimate following the latest CIM Definition Standards for Mineral Resource estimates.

### **1.22.2 METALLURGICAL TESTWORK**

As part of its reopening of the Campo Morado mine, Telson is planning to spend approximately USD 350,000 to conduct further studies to optimize both the metallurgical recoveries within the processing facility and the planned mining activities and sequence at the mine. This work will also provide Telson with a better understanding of the economic risks and opportunities as it brings the Campo Morado back into full production.

### **1.22.3 MINERAL RESOURCES**

Additional information on the distribution of iron and arsenic is required for mine planning and mineral processing. It is recommended that exploratory data analysis on iron and arsenic be conducted and the grades of iron and arsenic be estimated into the G9 and G9 del Oro block models for each of the mineralized zones and sub-zones.

- Statistical review and estimation of Fe and As                      USD 10,000

### **1.22.4 DEFINITION DRILLING FOR MINING**

Additional definition drilling for further geotechnical work and to convert any inferred mineral resources to higher confidence categories within the various mineralized zones to optimize any mining plans for these areas both prior to and during mining. A provisional budget of USD 200,000 is suggested for the first 12 months of this program.

### **1.22.5 ENVIRONMENTAL**

Telson starts immediate work on the detailed plans to raise the tailings facility with its Mexican environmental tailings consultants now that it is in the process of restarting the mining and processing at the Campo Morado Project and plans to increase the processing throughput to 2,500 tpd. As part of this process, Telson will need to update the water management protocols for the Campo Morado project to comply with its zero discharge requirements and to ensure that adequate water stored to cover the processing and mining requirements during the dry season. A budget of USD 300,000 should be adequate to begin working on the detailed tailings plans and water management protocols.

### **1.22.6 PRELIMINARY FEASIBILITY STUDY**

Telson should consider the preparation of a Preliminary Feasibility Study in order to quantify more precisely the investment required to bring the Campo Morado property to full production and identify a mineral reserve on the property. A budget of USD 500,000 is provisionally estimated for this work.



#### 1.22.7 BUDGET SUMMARY

Metallurgical Testwork	USD 350,000
Statistical review and estimation of Fe and As	USD 10,000
Definition drilling program (12 months)	USD 200,000
Environmental (tailings and water management)	USD 300,000
Preliminary Feasibility Study	USD 500,000
<b>Total estimate</b>	<b>USD 1,360,000</b>



## 2.0 INTRODUCTION

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At the request of Mr. Ralph Shearing, President of Telson Mining Corporation (TSX.V: TSN or Telson), Titley Consulting Ltd. (TCL) has been retained to provide a mineral resource estimate and Qualified Person to co-author a Technical Report on the Campo Morado Multi-Metal Project (Campo Morado Project) in the state of Guerrero, Mexico. This report also contains the results of a Preliminary Economic Assessment conducted by Micon International Limited (Micon).

Telson advises that it holds its interest in the seven mining concessions that make up the Campo Morado property through its wholly owned Mexican subsidiary Minas de Campo Morado, S.A. de C.V.

The Campo Morado Project hosts several important polymetallic massive sulphide deposits containing zinc, copper, silver, gold and lead mineralization where historical and recent mining and mineral processing activity has taken place.

Telson Mining purchased the Campo Morado Project from Nyrstar in June 14, 2017 and in October 2017 restarted mining operations under a preproduction plan and initiated production of zinc concentrates. Telson Mining also owns and operates the Tahuehueto Project, a gold, silver and base metal project located in north-western Durango State, Mexico.

### 2.1 TERMS OF REFERENCE AND PURPOSE

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This Technical Report has been prepared for Telson Mining Corporation in accordance with National Instrument (NI) 43-101 Standards of Disclosure for Mineral Projects and the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards. Telson Mining Corporation is incorporated in British Columbia (BC), Canada. The Company's head office address is 1090 West Georgia Street, Suite 450, Vancouver, BC, V6E 3V7, Canada. It is listed for trading on the TSX Venture Exchange (TSXV) under the symbol "TSN" and it trades in the United States on the Over-the-Counter-Bulletin-Board (trading symbol: "OTCBB: SOHFF").

The purpose of this Technical Report is to summarize a Preliminary Economic Assessment of the Campo Morado Project.

### 2.2 SOURCES OF INFORMATION AND DATA

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The information and sources for this Technical Report are listed below and included in the references.

This Technical Report is based on: information and documents provided by the Telson, information and documents from the data room provided to the Company by Nyrstar, observations made during the authors' most recent site visits,

various published and internal Company documents and reports, including information sourced by means of a web search, documents in the archives Hunter Dickinson Inc. a former consulting and management group to Farallon. The author reviewed the previous Technical Reports filed on [www.sedar.com](http://www.sedar.com) relating to the Project listed in Section 28 References. Other key data and documents reviewed and referenced by the author that were provided by the Company include:

- Drill hole database created by Nyrstar and provided to Telson;
- Drilling and other technical data restored from the Nyrstar file server at the Campo Morado Mine;
- Mineralized body and underground mine development solids models created by Nyrstar;
- An unpublished memorandum by Arseneau Consulting to Nyrstar "G9 and G9 del Oro Resource, dated February 16, 2015".
- Mineral concession title documents by the Mexico Secretaría de Economía Coordinación General De Minería Dirección General de Regulación Minera and a title opinion provided to Telson by RB Abogados, dated March 30, 2018;
- Copies of permits and environmental documents filed in offices at the Campo Morado Mine;
- Various Company news releases filed on [www.sedar.com](http://www.sedar.com) and on the respective company websites.
- TCL also reviewed and referenced documents and technical data restored from the archives of Hunter Dickinson including a separate drill hole database that was used for data verification checks on the database provided by Telson.

The key sources of information sources used to support this Technical Report include the reports and documents listed in Section 3.0 (Reliance on Other Experts) and Section 28.0 (References). Additional information was sought from Telson where required.

## 2.3 QUALIFIED PERSONS

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The Qualified Persons (QPs) contributing to this Technical Report as defined in NI-43-101 are as follows:

- Eric Titley, PGeo, President, Titley Consulting Ltd.
- William J. Lewis, BSc, PGeo, Senior Geologist, Micon International Limited
- Christopher Jacobs, CEng, MIMMM, Vice President, Micon International Limited
- James W.G. Turner BSc (Hons) ACSM MSc MCSM MIMMM CEng., Senior Mineral Processing Engineer, Micon International Limited
- Eur Ing Bruce Pilcher, CEng, FIMMM, FAusIMM (CP), Senior Mining Engineer, Micon International Limited

## **2.4 SITE VISITS BY THE QUALIFIED PERSONS**

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### **2.4.1 TITLEY CONSULTING**

Mr. Titley conducted a site visit on August 24 and 25, 2017, during which various aspects relating to resource estimation, including the drill hole database, mineralized zone models, block models, metal recoveries, underground mapping and surveying were reviewed and discussed. The project infrastructure and equipment, proposed mining and processing methods, environmental, permitting, site access, and social and community impact aspects were discussed during this visit. The site visit included a tour of the underground mine, crushing circuit, process plant, parts and equipment inventory, on-site laboratory, accommodation and catering facilities.

### **2.4.2 MICON**

Micon's site visit to the Campo Morado project occurred between November 17 and 19, 2017. During the site visit various aspects of the project were discussed, these topics ranged from the onsite exploration, Quality Assurance and Quality Control (QA/QC) procedures, metallurgical testwork, reopening processes both at the processing facility as well as underground mining, environmental testwork and reclamation, as well as future objectives.

Micon and TCL do not have nor have previously had, any material interest in Telson or related entities. The relationship with Telson is solely a professional association between the client and the independent consultants. This report is prepared in return for fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this report.



## 2.5 EFFECTIVE DATES

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There are a number of effective dates, as follow:

- Date of the Mineral Resources Estimates: November 5, 2017
- Date of supply of the last information on mineral tenure: March 30, 2018
- Date of supply of the last information on permitting: March 1, 2018.
- Date of supply of information on process flowsheet, metallurgical accounting and process equipment description: March 1, 2018.
- Date of economic analysis: March 1, 2018.

The overall effective date of the Report is taken to be the date of the economic analysis and is March 30, 2018.



## **3.0 RELIANCE ON OTHER EXPERTS**

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### **3.1 INTRODUCTION**

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In this report, discussions regarding royalties, permitting, taxation, concentrate sales agreements and environmental matters are based on material provided by Telson. Titley Consulting and Micon is not qualified to comment on such matters and has relied on the representations and documentation provided by Telson for such discussions.

All data used in this report was originally provided by Telson. Titley Consulting and Micon has reviewed and analyzed this data and has drawn its own conclusions therefrom, augmented by its direct field examinations during the 2017 site visits.

### **3.2 MINERAL TENURE, SURFACE RIGHTS AND ROYALTIES**

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The QPs have not independently reviewed ownership of the Project area and any underlying property agreements, mineral tenure, surface rights or royalties. The QPs have fully relied upon, and disclaim responsibility for, information derived from Telson and legal experts retained by Telson for this information through the following document:

- RB Abogados, Mining Concessions Legal Title Report, March 30, 2018.

This information is used in Section 4 of the Report. The information is also used in support of the Mineral Resource estimate in Section 14 and the economic analysis in Section 22.



## 4.0 PROPERTY DESCRIPTION AND LOCATION

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### 4.1 PROPERTY LOCATION

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The Campo Morado Project area, centred at latitude 18° 11' south and longitude 100° 09' west, is in the northeastern part of Guerrero State, Mexico, 160 km southwest of Mexico City (Figure 4-1). The Property is located in the municipality of Arcelia, 20 km southeast of the city centre.

**Figure 4-1 Project Location**



### 4.2 PROPERTY DESCRIPTION

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Titley Consulting was provided with legal opinion that Nyrstar Campo Morado, S.A. de C.V. is the legal recorded and beneficial holder of the Campo Morado Mining Concessions. Telson advises that on June 14, 2017 it purchased all the shares of the Mexican subsidiary companies of Nyrstar Mining Ltd. and Nyrstar Mexico Resources Corp. (collectively Nyrstar), including Nyrstar Campo Morado, S.A. de C.V. (Nyrstar México), such that these subsidiary companies are now wholly owned subsidiaries of Telson. After Telson purchased the Property, the name of subsidiary company Nyrstar Campo Morado, S.A. de C.V. was changed to Minas de Campo Morado, de S.A. de C.V.

The Campo Morado property comprises approximately 12,090 hectares in seven contiguous mineral concessions as listed in Table 4-1. Figure 4-2 shows the mineral concession boundaries all located in municipality of Arcelia and state of Guerrero, Mexico.



**Table 4-1 Campo Morado Mining Concessions**

Mining Concession Name	Title Number	Area (hectares)	Date Granted	Expiry Date	Bi-Annual Fee (USD)
La Trinidad	210718	2,750.0000	November 17, 1999	November 16, 2049	USD 23,018
Campo Morado	213074	1,111.0000	March 2, 2001	March 1, 2051	9,299
2ª Reducción Farallon	218979	1,820.9250	January 28, 2003	January 27, 2053	15,241
Reducción La Alina	219148	4,631.0000	February 14, 2003	March 1, 2051	38,762
El Mil	219874	1,250.0000	April 29, 2003	April 28, 2053	10,463
Farallón 2	227412	251.0000	June 16, 2006	June 15, 2056	2,101
El Ganador	241313	475.8929	November 22, 2012	November 21, 2062	1,132
<b>Totals</b>		<b>12,289.8179</b>			<b>USD 100,016</b>

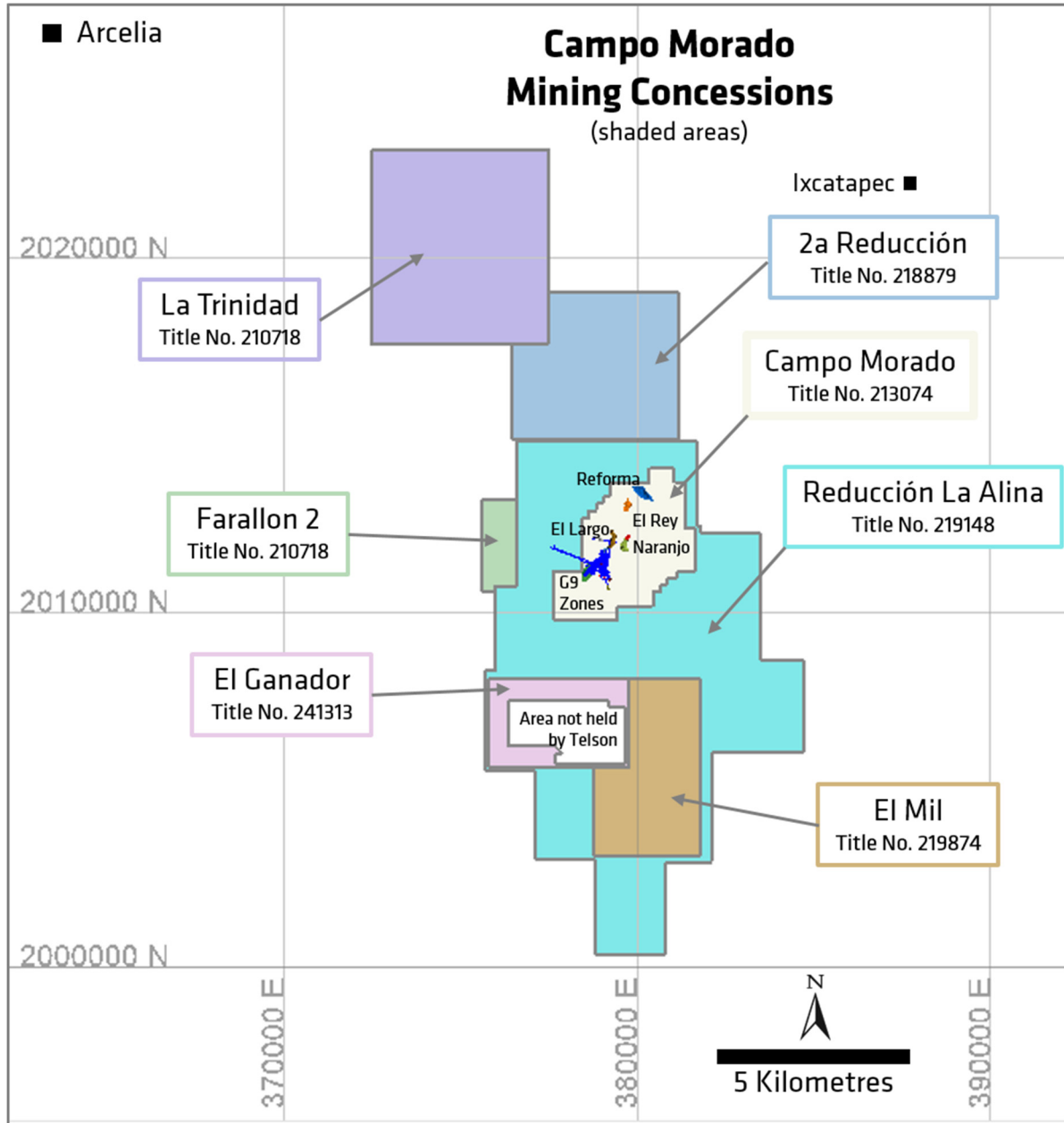
Fees are estimated in US dollars based on the rates published in the "Diario Oficial de la Federacion". The rates used for the table are as of February 12, 2018.

The mining concessions are grouped in accordance with applicable Mexican mining legislation and Reducción La Alina mining concession is the head of the Campo Morado grouping. The purpose of such grouping is to file one work assessment report for all mining concessions comprising a relevant grouping.

The owner of the Campo Morado mining concession must pay a royalty of 3% of the net value of liquidation over the minerals extracted during the term of existence of the mining concession to the Mexican Geological Service (Servicio Geológico Mexicano, or SGM) a government entity. The owner of La Trinidad mining concession must pay a royalty of 2% of the net value of liquidation over the minerals extracted during the term of existence of the mining concession to the SGM. The owner shall also submit a semi-annual report to the SGM of the work conducted on these mining concessions and production obtained from them, if any. Failure to file these reports constitute a cause of cancellation of the mining concession in accordance with Mexican Mining Law.



Figure 4-2 Mining Concession Plan in UTM Coordinates



The bi-annual fee, payable to the Mexican Government for Telson to hold the contiguous group of seven mining concessions at Campo Morado is USD 110,016.

As part of the Campo Morado Mine purchase agreement, Nyrstar has retained the right to receive a Variable Purchase Price on future zinc production on the first 10 million tons of material processed by Telson at the Campo Morado Mine when the price of zinc is at or above USD 2,100 per tonne. Telson shall pay Nyrstar the greater of either of (a) or (b) below:

c. USD 20 per tonne of zinc sold if the zinc price received is over USD 2,100 per tonne; or

(b) A percentage of the Net Smelter Revenue received from zinc from the Campo Morado Mine based upon the following:

(i) If the zinc price received is greater than USD 2,100 per tonne and less than or equal to USD 2,200 per tonne, then 0.5% of the Net Smelter Revenue;

(ii) If the zinc price received is greater than USD 2,200 per tonne and less than or equal to USD 2,300 per tonne, then 1.5% of the Net Smelter Revenue;

(iii) If the zinc price received is greater than USD 2,300 per tonne and less than or equal to USD 2,400 per tonne, then 2.5% of the Net Smelter Revenue;

(iv) If the zinc price received is greater than USD 2,400 per tonne and less than or equal to USD 2,500 per tonne, then 3.5% of the Net Smelter Revenue; and

(v) If the zinc price received is greater than USD 2,500 per tonne, then 4.25% of the Net Smelter Revenue.

Telson maintains the right under the Agreement to purchase 100% of the Variable Purchase Price at any time for USD 4 million. Nyrstar shall also have a right of first refusal, on the same commercial terms and conditions offered by an arm's length third party to enter into an offtake agreement for the purchase of zinc concentrates.

The Company has advised the author that there are no other royalties, back-in rights, payments, agreements or encumbrances to which the Campo Morado property is subject.

Figure 4-3 is a more detailed map showing the Campo Morado and the Reduccion La Alina mining concessions. All Mineral Resources in the 2017 estimate occur on the Campo Morado mining concession.

### 4.3 MEXICAN MINING LAW

Amendments to Mexican mining law in 2006 stipulated that all mineral concessions granted by the Dirección General de Minas (DGM) became simple mining concessions. There is no longer a distinction between mineral exploration or

exploitation concessions. A second change to the mining law resulted in the granting of mining concessions for a period of 50 years, provided the concessions remained in good standing. As part of the second change, all former exploration concessions previously granted for a period of 6 years became eligible for the 50-year term.

For any concession to remain valid, the bi-annual fees must be paid and a report filed during the month of May of each year, which covers the work conducted during the preceding year. Concessions are extendable, provided application is made within the five-year period prior to the expiry of the concession and the bi-annual fee and work requirements are in good standing.

All mineral concessions must have their boundaries oriented north-south and east-west and the lengths of the sides must be one hundred metres or multiples thereof, except where these conditions cannot be satisfied because they border on other mineral concessions. The locations of the concessions are determined based on a fixed point on the land, called the starting point, which is either linked to the perimeter of the concession or located thereupon. Prior to being granted a concession, the company must present a topographic survey to the DGM within 60 days of staking. Once completed, the DGM will usually grant the concession.

#### **4.4 PERMITTING AND ENVIRONMENTAL**

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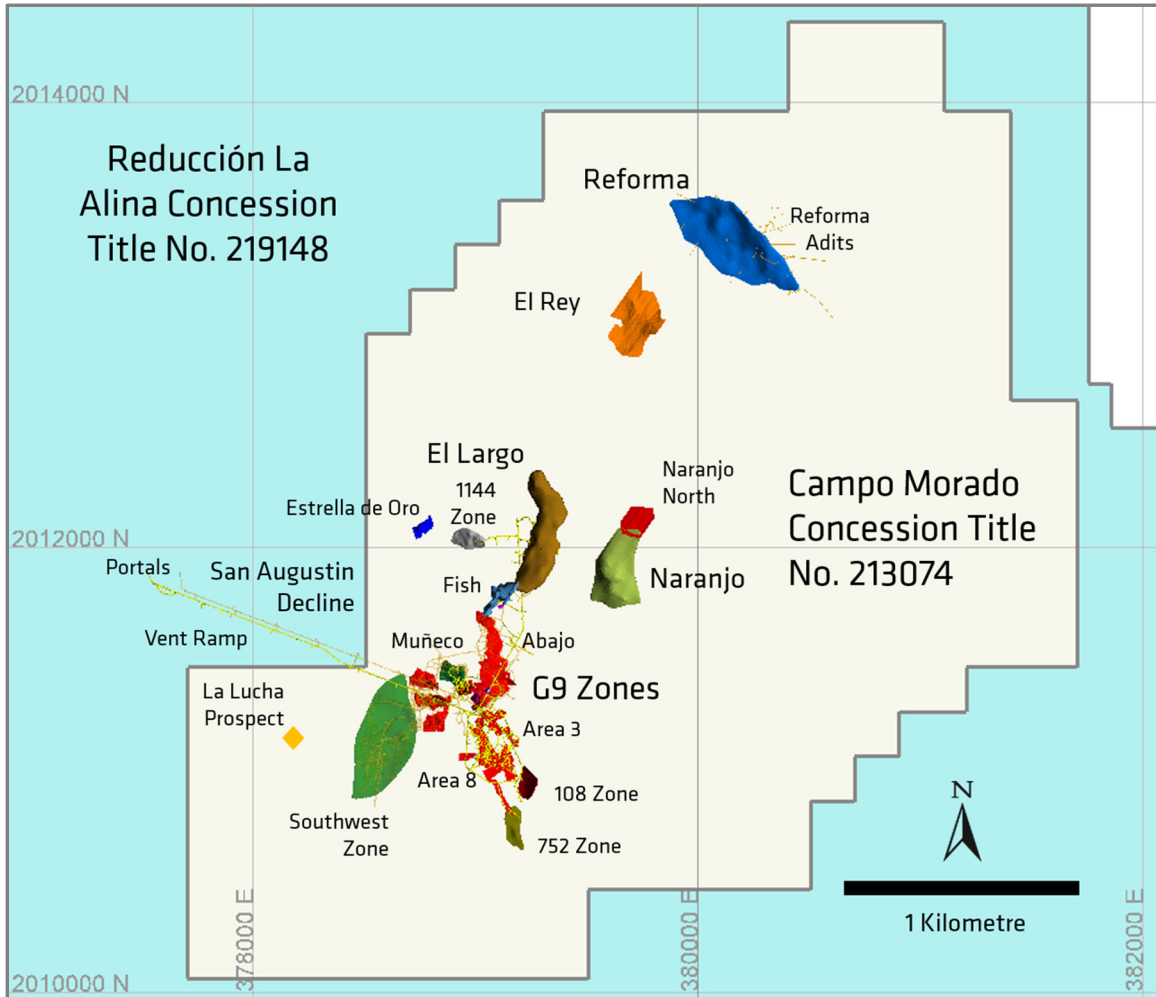
Since the Campo Morado Project is located on a number of concessions upon which mining has previously been conducted, all exploration work continues to be covered by the environmental permitting already in place and no further notice is required to be given to any division of the Mexican government. The specific environmental permitting of the Campo Morado mine site was obtained by the previous operators, via an environmental assessment, and it is valid for the duration of the mining concessions that comprise the mine, provided that Telson keeps the permitting in good standing.

Micon is unable to comment on any remediation that may have been undertaken by previous owners, as there appear to be no records of any previous remediation work at the site. Environmental studies and permitting by Telson for its Campo Morado Project are discussed in Section 20 of this report.

Risk factors associated with access to, or the right or ability to perform work on the Project include potential security issues for mineworkers and transport vehicles on roads and access routes on the Campo Morado Property and surrounding area. Telson has been proactively assessing and addressing these risks since taking over the Property.



**Figure 4-3 Campo Morado & Reduccion La Alina Concessions and the Modeled Mineralized Zones**



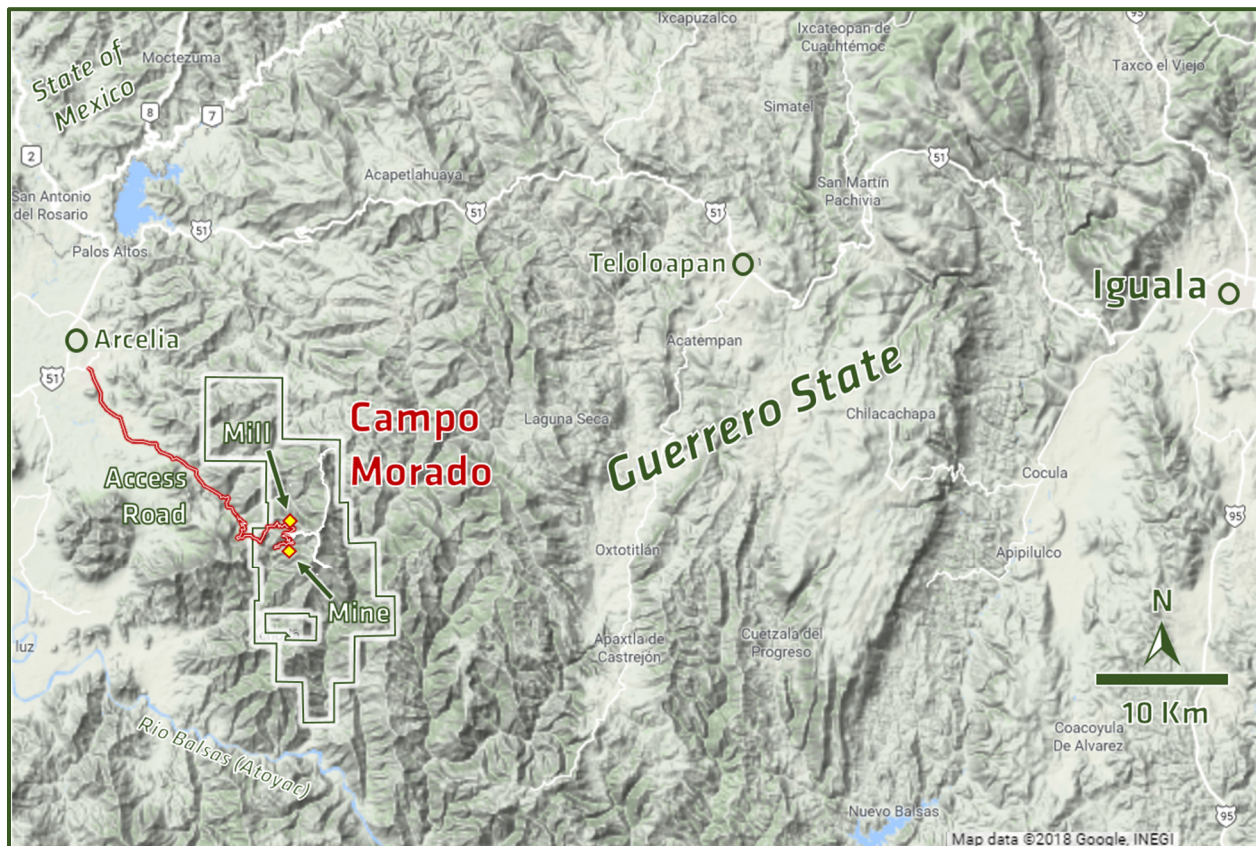


## 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 ACCESSIBILITY

Road access to the site from Mexico City is by Highway 95, a major corridor linking the capital and Acapulco on the Pacific coast, south to the city of Iguala. From there, Highway 51 west connects to Arcelia. This all-weather asphalt two-lane road is the main east-west highway in Guerrero State. The western boundary of the Mine Property is located 25 kilometres southeast of the city of Arcelia on a municipal road that is mostly unpaved (Figure 5-1). The Campo Morado process plant is a further five kilometres east of the mining concession boundary on an unpaved mine road. The total driving distance from Arcelia is 30 kilometres. Driving distance from Mexico City to Campo Morado is 360 km via the Arcelia route and driving time is typically five to six hours.

**Figure 5-1 Campo Morado Project Location and Access**





Mexico City International is the nearest major airport.

Helicopter access from the Mexico City heliport takes one hour. An 800 m long airstrip to service the mine and processing plant has been permitted but not constructed. Estimated flight time from Mexico City is 30 minutes.

Additional information on accessibility is included in Section 18 of this Report.

## **5.2 CLIMATE**

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The climate of the project area is temperate with dry winters. Most rainfall occurs between June and October, ranging from about 600 to 1200 mm per year. Individual rainstorms can be heavy, but flooding problems are not experienced due to the nature of the topography. The dry season extends from November to May, during which time surface water disappears from most gullies. Surface water can however, be found in numerous small springs, many of which are situated in or near limestone deposits around the Project area. The average annual temperature is in the 20 to 25 degree Celsius range with nighttime lows in January below 10 degrees and daytime highs in May in excess of 35 degrees Celsius. Operating season for mining operations is year round.

## **5.3 LOCAL RESOURCES AND INFRASTRUCTURE**

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A concerted effort is being made by Telson to hire and train local workers to perform many Project-related tasks. This policy was initiated by Farallon when their mineral exploration programs commenced in 1996. It continued during the six years of operation, by Farallon and Nyrstar, of the G9 Mine and Mill complex, which opened in 2009. A number of workers and trainees were drawn from the local area. This continues to be the case. As a result, there are personnel with mining related skills within the nearby local communities.

Goods and services in support of mining operations are generally sourced from Mexico City. The Company has sufficiency of surface rights and availability of power and water for mining operations. Additional information on infrastructure is provided in Section 18 and Section 20.

## **5.4 PHYSIOGRAPHY**

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Campo Morado is in the physiographic province of the Sierra Madre del Sur. Deeply incised drainages and steep hillsides cut the local terrain and with elevations ranging from 600 to 1700 metres. Dry-land grasses and shrubs, cultivated fields, and patches of scrub forests dominated by oak with some stands of pine cover the local hillsides.



## 6.0 HISTORY

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### 6.1 EARLY HISTORY

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#### 6.1.1 1810 TO 1821

During the Mexican War of Independence from Spain between 1810 and 1821, General Guerrero paid his soldiers with copper pesos that have the words "8 reales" stamped on them. These coins were hammered out from crudely smelted and refined copper ore derived from near-surface oxidized mineral deposits at Campo Morado.

#### 6.1.2 1885 TO 1940

In 1885, Don Vicente Ortiz obtained the mineral rights in the vicinity and named the area Campo Morado ("Purple Camp"). Early exploration at Reforma consisted of drifting and underground development rather than drilling. Reforma Mining and Milling Co. developed six adit levels over a 180-metre vertical and 900-metre horizontal span on the Reforma deposit. Initially, mining took place on a small high-grade silver vein near the current third level. Following the 1903 discovery of more massive gold and silver-bearing oxide material during tunnelling at that original level, a 25 tonne per day smelter was put into operation. Production capacity ramped up to 50 tonnes per day in 1904. By 1907, production was 90 tonnes per day. The mined and smelted material from the Reforma deposit was smelted with small contribution from the Naranjo oxide deposit, discovered in 1900. The 1903 through 1910 production totalled 3,387 kilograms gold, 125,230 kilograms silver and 4,157 tonnes lead; a minor part of which came from the Naranjo oxide deposit. Mining halted around 1912 at the time of the Mexican revolution. From 1914 to 1916, coins were minted at Campo Morado under the revolutionary General Jesus H Salgado.

A total mining and direct smelting volume of 135,000 tonnes of ore has been inferred from an analysis of the slagheap below the Reforma smelter. In 1920, a road was built up to the mine from the Rio Balsas and intermittent mining operations occurred from 1920 through 1927. From 1937 through 1940, sporadic mining and development of oxide and minor sulphide ore took place. Figure 6-1 is an aerial photograph of the Reforma Mine showing the historic workings and the village of Campo Morado.

#### 6.1.3 LA TRINIDAD CONCESSION 1890 TO 1996

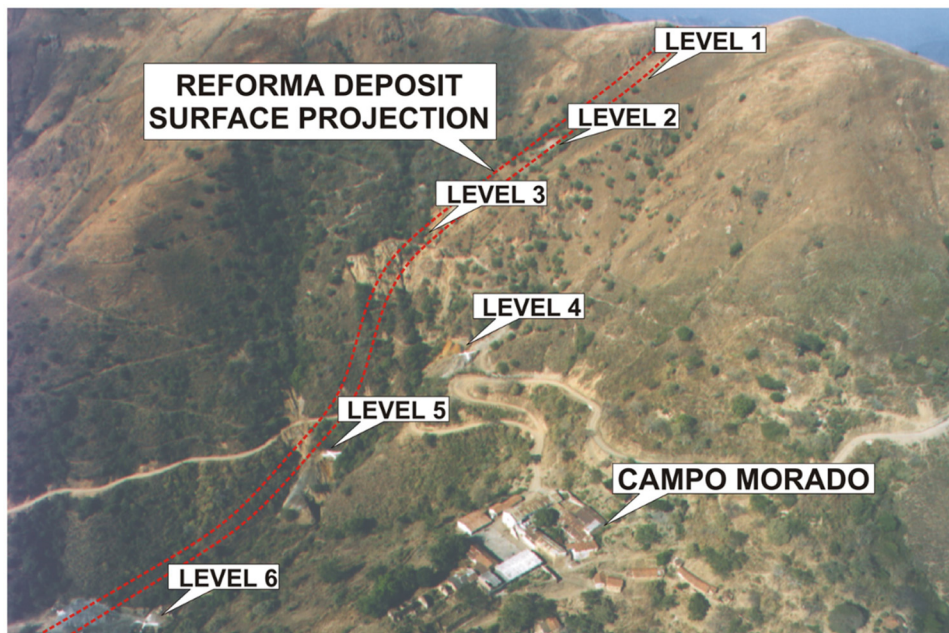
La Trinidad concession located 9 kilometres northwest of the main Campo Morado district hosts four polymetallic massive sulphide occurrences known from historical records. La Libelula showing discovered in 1890 was the main source of ore for a small onsite smelter that operated until 1910. Ore transport from La Libelula to the smelter was by aerial tramway. Additional ore was obtained from the Luisa and Luisita massive sulphide showings located close to the smelter site.



The Consejo de Recursos Minerales, a Mexican government agency, explored the claim in cooperation with and funded by the Metal Mining Agency of Japan from 1994 to 1996. Geological mapping, geochemical surveys and geophysical surveys were carried out followed by completion of an 11 hole diamond drill program, totaling 2,526 metres.

This was followed by a 1 : 50,000 scale regional mapping and air photo interpretation program by the Consejo de Recursos de Minerales (Government of Mexico Mineral Resources Council) in 1996 on areas that included 16 prospects in and around Campo Morado and another 17 around the community of Ashotla.

**Figure 6-1 Photograph of Historic Reforma Deposit Area & Village of Campo Morado Circa 1995**



#### 6.1.4 UNION OIL SUBSIDIARY MINERALS EXPLORATION COMPANY AND MOLY CORP 1973 TO 1977

Union Oil subsidiary Minerals Exploration Company and its successor, Moly Corp, rehabilitated 3.7 km of underground workings and drilled 840 metres of core from underground at the historic Reforma and Naranjo Oxide deposits between from 1973 to 1977. The author was unable to locate any information regarding these drill holes and they are not listed in the drilling tables in Section 10.



## 6.2 RECENT HISTORY

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### 6.2.1 FARALLON RESOURCES LIMITED 1995 TO 2010

Farallon Resources Limited optioned the Campo Morado and La Alina concessions through its wholly owned Mexican subsidiary, Farallon Minera Mexicana S.A. de C.V. (collectively Farallon) and began exploration around the old Reforma Mine deposit area in November 1995.

Exploration for polymetallic mineral deposits by surface diamond drilling on the Campo Morado mineral concession was a major focus for Farallon between 1996 and 1998 and from 2004 to 2010. The first drill hole was completed on the Reforma Deposit in June 1996 and within 24 months, several previously unknown massive sulphide bodies were either discovered or delineated by drilling between 1996 to 1998, including the:

- Naranjo sulphide body discovered September 1996, laterally below and offset from the historical Naranjo oxide workings, it was subsequently delineated;
- El Rey discovered November 1996 and partially delineated;
- El Largo discovered March 1997 and partially delineated;
- G9 discovered November 1997;
- Estrella de Oro discovered May 1998.

Farallon completed 333 drill holes totalling 64,321 metres in this program to 1998.

Camp construction and the rehabilitation of roads was an early focus of work by Farallon. During the first three years of exploration by Farallon, several exploration programs were undertaken in addition to diamond drilling. Orthophotographic and topographic maps were created. Detailed surface geological mapping at 1:5,000 and 1:2,000 scale was conducted from the Rio Balsas in the south to La Trinidad in the north comprising 150 square kilometres. Soil geochemical surveys comprising 29,221 samples collected in a broad area from El Faisan in the south to La Trinidad in the north were analyzed at ALS Laboratory in Vancouver BC by aqua regia digestion multi-element ICP-AES methods. Ground geophysical surveys, consisting of UTEM over the core of the Campo Morado area, gravity surveys over the central portion of the soil survey area and a test real section IP survey over the deposit areas were completed. Flotation testwork designed to produce selective zinc, copper and lead concentrates from samples of Naranjo and Reforma mineralization was done. Preliminary geologic mapping of the La Trinidad area was conducted in 1998 and it was determined from this work that La Trinidad has a similar geologic and stratigraphic setting to the Campo Morado deposits located nine kilometres to the southeast. However, Farallon or Nyrstar carried out no drilling on La Trinidad Concession.

Then in late 1998, exploration work was put on hold for six years due to unfavourable metal prices.

In November of 1999, Farallon Minera Mexicana acquired the 2,750-hectare La Trinidad concession, in an open bid process from the Mexican government Dirección General de Minas. This concession is located 9 km northwest of the Reforma deposit and is accessible by a series of gravel roads from the village of Campo Morado.

Exploration resumed in August of 2004 and the extensive diamond-drilling program continued. In June 2005, a surface drill hole intersected a high-grade zone of the G9 deposit, which led to a refocus of interest to this area and delineation of the G9 deposit. This program led to the discovery of several similar deposits nearby.

A metallurgical test program was initiated in 2005. Various companies were commissioned to carry out metallurgical and processing test programs on samples of G9 mineralization from the zones to be mined. Tests were also carried out on the resultant flotation products. By the end of that year, a pilot plant test program had been completed. Test work continued in 2006 and 2007 and expanded in scope.

Excavation of the 4.5 metre by 5.0 metre San Augustin decline with a design capacity of 1,500 tonnes per day was initiated in August 2006 from a surface portal at an elevation of 1,040 metres amsl to facilitate development of these deposits and for underground drilling. A parallel ventilation ramp was excavated to provide the main air exhaust for the mine.

By July 2008, the first drill hole collared from the underground was completed. Stopping started in the North Zone of the G9 deposit in September 2008 and on April 1, 2009 Farallon announced commercial production at the G9 Mine, (subsequently called the Campo Morado Mine by Nyrstar). Most ore production was by underhand bench mining, open stopping methods using jumbo drills and LHD equipment with ore transported to surface by truck.

In April 2007, the company received its primary mine permit, or Manifestación de Impacto Ambiental (MIA), required for full mine and mill construction and operation of its G9 project at Campo Morado. During this time, agreements with the Municipality of Arcelia and local landowners were put in place to allow for construction of the mine access road and routing of the transmission line to the project. Acquisition of equipment to build the G9 mill started in 2007 and by the latter half of the year, construction of the mill was underway. Commissioning of the mill took place in September 2008. By the end of that month, both the mine and mill were fully operational. The first zinc concentrates were shipped in bulk by truck on October 12, 2008 to the port of Manzanillo in Colima State.

A total of 480,000 tonnes (average of 1,300 tonnes per day) from the North and Southeast Zones was mined and milled during 2009. The average grades of the material milled during 2009 was 10.0% Zn, 1.3% Cu, 2.5 g/t Au, 180 g/t Ag and 1.1% Pb. By March 2010, Farallon had mined 640,000 tonnes of ore at 10.5% Zn, 1.40% Cu, 200 g/t Ag and 2.59 g/t Au.

During the period of mine and mill construction, exploration drilling continued apace. Overall, between 1996 and 2010, Farallon drilled 353,626 metres in 1,365 core holes and discovered several new mineral deposits. This program included 897 surface drill holes, drilled to an average depth of 339 metres, for a total of 303,856 metres, and 468 underground drill holes totalling 49,770 metres with an average depth of 106 metres.

Farallon changed its name from Farallon Resources Ltd to Farallon Mining Ltd on May 22, 2009.

## 6.2.2 NYRSTAR 2011 TO 2017

On November 15, 2010, Farallon announced that it had entered into an agreement whereby Nyrstar Canada (Holdings) Ltd. a wholly-owned subsidiary of Nyrstar NV (collectively Nyrstar) agreed to acquire a 100% interest in Farallon and the Campo Morado property and the Campo Morado mine, then known as the G-9 Mine, in a friendly take-over. By January 5, 2011, Nyrstar had acquired almost 94% of the outstanding shares of Farallon, thereby taking control of Campo Morado.

Under Nyrstar, the Campo Morado Mine was in production from the time of its purchase until January 2015. During 2014, the last year of commercial production, the mine processed 657,000 tons of ore with an average grade of 1.2g/t Au, 115.7 g/t Ag, 4.6% Zn, 1.2% Cu and 0.9% Pb. The concentrates produced in the same year were 48,000 tons of Zn concentrate at 47% Zn and 29,000 tons of Cu concentrate at 13%, including 6,000 ounces of Au and 0.9 million ounces of Ag. There was no mill throughput in 2015 due to the suspension of operations at the beginning of that year.

Nyrstar drilled a total of 232,711 metres in 1,734 holes, including 131 holes drilled from surface to an average depth of 264 metres, for a total of 34,528 metres, and 1,603 drill holes collared from underground workings with an average depth of 124 metres totalling 198,183 metres.

In January 2015, mining operations at Campo Morado were suspended and the mine placed on care and maintenance due to deteriorations in metal prices and security concerns in the State of Guerrero. Nyrstar formalized the temporary suspension of activities at both Campo Morado and at its mining operations at Myra Falls in central Vancouver Island, BC, Canada on April 29, 2015. The closure at Campo Morado and care and maintenance status remained in effect until the property was sold to Telson.

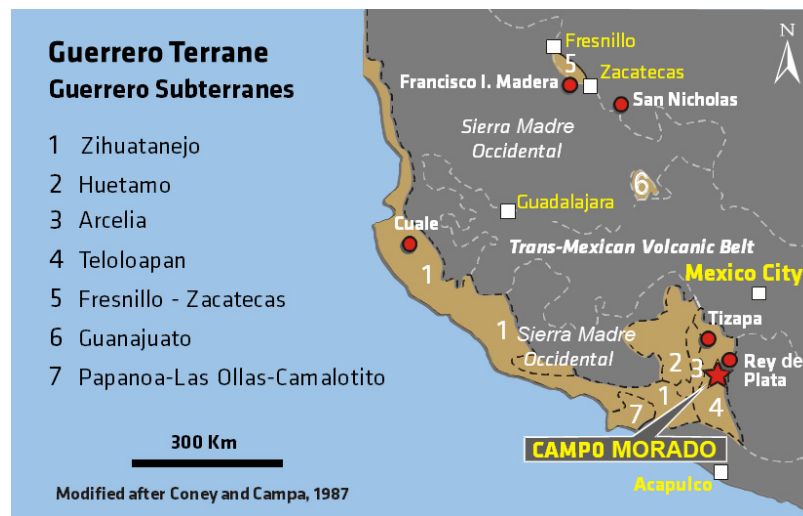
## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 REGIONAL GEOLOGY

The following text was compiled from previous Technical Reports on the Campo Morado property.

The Campo Morado area lies in the Eastern part of the Teloloapan Subterrane of the Guerrero Terrane close to its margins with the Mixteco Terrane to the east, the Sierra Madre Occidental to the west, and the Trans-Mexican Neogene Volcanic belt to the north (Figure 7-1). An elongate, fault bounded, composite terrain, the Guerrero Terrane sits along the Mexico's southwestern edge, with the Pacific Ocean and the Cocos plate to its west (Coney, 1985). It primarily consists of submarine, or rarely, subaerial volcanic and sedimentary successions ranging from Upper Jurassic to Middle Upper Cretaceous in age (Centeno-García et al., 2003).

**Figure 7-1 Geologic Terrane Setting**



A complex, east-verging thrust fault system, the Teloloapan Subterrane was strongly deformed by folding and thrusting from the south-southwest and is metamorphosed in low-grade greenschist facies (Miranda-Gasca, 1995). It consists of shallow marine, arc-related basaltic to andesitic lava flows, tuffs, epiclastics, and limestone; alternating with interbedded shale and sandstone packages at the top of the sequence (Guerrero-Suastegui, 2004).

Closer to the Campo Morado area, broad outcrops of massive, cliff-forming, grey limestone of the Guerrero-Morelos platform carbonate sequence exist near the city of Teloloapan. To the west of the town the erosion of these carbonate rocks has produced a time-equivalent discontinuous belt of coarse, proximal, turbiditic calcarenite up to 200 metres



thick (Monod et al, 1994). To the west, near Acapetlahuaya, several similar zones of fine-grained calcarenite conformably overlie argillite-wacke-limestone from the upper part of the volcanic/sedimentary sequence and may represent a distal facies of the calcarenite. These shallow basin and slope facies mark the edge of a deeper basin to the west of the Guerrero-Morelos platform. The Campo Morado project area lies in this basin, immediately to the west of its margin.

## **7.2 PROPERTY GEOLOGY**

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The Campo Morado property hosts several precious metal-rich volcanic associated massive sulphide deposits, which occur in a sequence of felsic to intermediate flows and tuffs, and heterolithic fragmental rocks. Most are in the upper part of the felsic pile or at the contact with stratigraphically overlying, fine-grained, chemical and clastic sedimentary rocks. The five major lithostratigraphic units from oldest to youngest are the Guerrero Ridge intermediate volcanic-subvolcanic unit, the Naranjo sedimentary unit, the Campo Morado felsic volcanic unit, the La Canita volcanic unit and, the Reforma sedimentary unit. Two stages of magmatic pulses intrude all of these units except La Canita. One is associated with the Campo Morado felsic unit, the other being of Tertiary age. Figure 7-1 is a plan map of the Campo Morado Project area geology showing deposit locations.

## **7.3 DEPOSIT GEOLOGY**

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### **7.3.1 REFORMA DEPOSIT**

The Reforma deposit is located in the northern part of the local deposit trend. It occurs at the top of the overturned Campo Morado felsic volcanic unit. Geological modelling shows that the main Reforma sulphide body has a tabular shape with a maximum horizontal dimension of 760 metres. It extends for 60 to 350 metres along the dip of the rock units and is between two and 50 metres thick.

The deposit consists predominantly of pyrite with variable amounts of quartz and other gangue minerals, as well as minor to moderately abundant zinc, copper and lead sulphides. Three distinct zones of mineralization have been identified, including: an upper lead-zinc sulphide-rich zone; a central iron sulphide-rich zone grading upwards to an iron-zinc sulphide zone; and a lower copper-rich zone. Significant gold and silver mineralization occurs in the upper zone.

### **7.3.2 EL REY DEPOSIT**

The El Rey deposit is 200 metres southwest of the Reforma deposit. The geological setting is similar to that of the Reforma deposit as the rock sequence appears to be overturned (the massive sulphides occur structurally beneath the felsic volcanic unit). The primary El Rey sulphide body is tabular in shape and nearly horizontal; it is approximately 250 metres wide in the east-west direction, 200 to 250 metres wide in a north-south direction and it is between two to 35 metres thick. Several faults with offsets of up to a few tens of metres cut the deposit. The El Rey massive sulphide is also zoned. As in the Reforma deposit, a gold, silver, lead and zinc-bearing zone is found near the base of the deposit.

### **7.3.3 NARANJO DEPOSIT**

The Naranjo deposit is located approximately 700 metres south of the El Rey deposit. It is comprised of two main sulphide bodies, the largest of which is 75 to 240 metres wide in the east-west direction, about 500 metres long and about five to 75 metres thick. Although not as sharply developed as in the Reforma deposit, three distinct zones of mineralization have been identified at Naranjo, including: an upper lead-zinc sulphide-rich zone with high gold and silver values; a central zone with low to moderate copper and zinc values; and a lower zone of predominately copper or less commonly zinc and gold values. There is additional copper and zinc sulphide mineralization within veins beneath the main sulphide lenses.

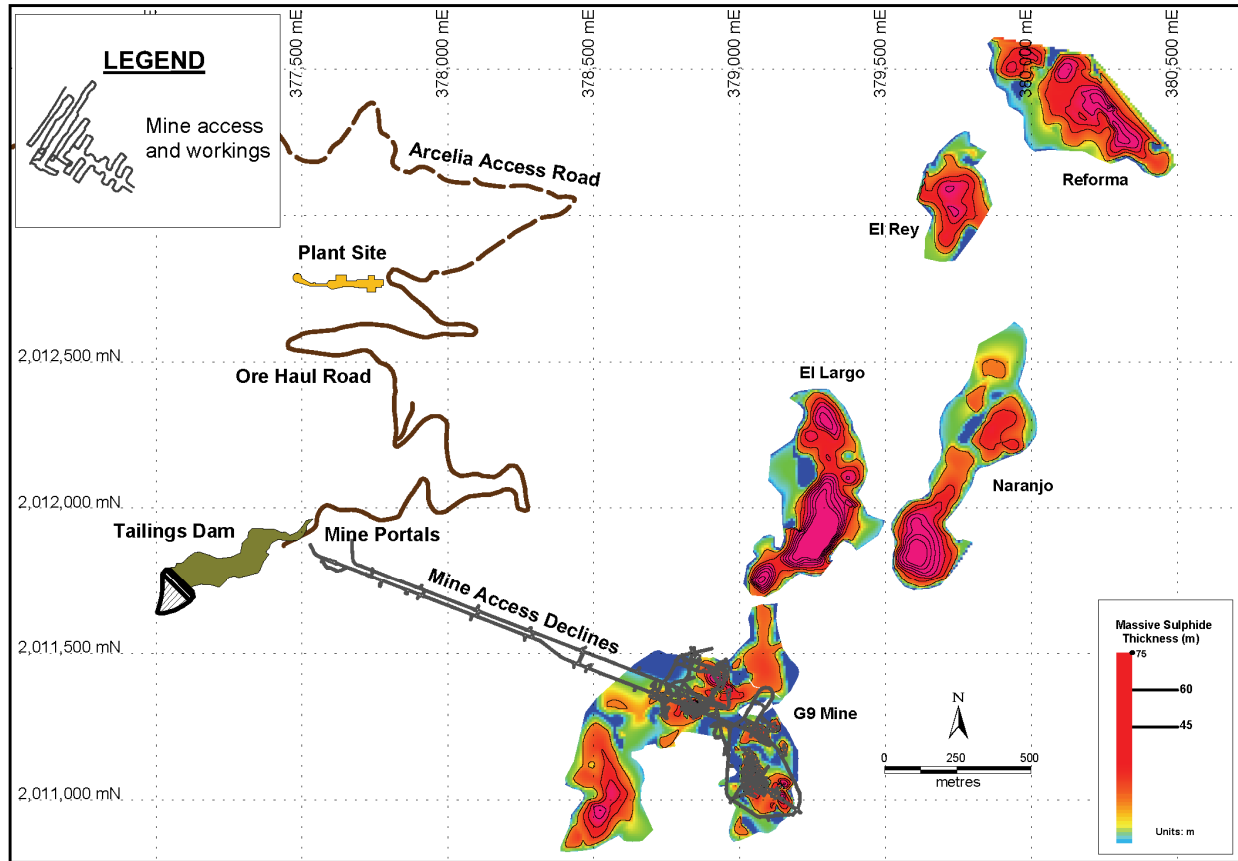
### **7.3.4 EL LARGO DEPOSIT**

The El Largo deposit is located near the southern end of a 1.5 kilometre long ridge, about 100 metres west of the Naranjo deposit. It is comprised of one primary sulphide body and nine smaller mineralized bodies. The primary sulphide body has excellent continuity: it is over 700 metres long, 50 to 200 metres wide and between ten and more than 100 metres thick.

### **7.3.5 G9 DEPOSIT**

The G9 massive sulphide deposits occur at the top of a felsic volcanic sequence that consists of felsic domes, flows, lapilli tuff and tuff with interlayers of argillite. In the footwall rocks there are a few centres of strong hydrothermal alteration that are marked by abundant quartz-pyrite stringer mineralization that in places contains abundant sphalerite and/or chalcopyrite. The zones of high sphalerite and chalcopyrite in the stringer zones are near the major deposits of high-grade massive sulphide. The grades of the massive sulphide deposits vary both laterally and vertically, with few overall patterns of zonation.

**Figure 7-2 Map Showing Mineral Deposit Massive Sulphide Thickness - Mine & Mill Infrastructure**



Above the G9 deposit is a sedimentary sequence, the lowest part of which is dominated by calcareous argillite and siltstone that were deformed strongly by shear folding during regional deformation. Within this unit are a few domes, stubby flows and lapilli tuff of a younger felsic volcanic unit. This sequence also includes scattered zones of distal, reworked, intermediate and felsic tuffaceous rocks of the explosive Nuestro Amigo unit that are inter-layered with argillite. The upper part of the sedimentary sequence consists of interbedded argillite and quartzite, some of which shows soft-sediment deformation textures. Chert and cherty argillite are common in stratabound lenses immediately above and lateral to the massive sulphide deposits. They also occur above the younger volcanic rocks in several places. This suggests that some of the hydrothermal centres were rejuvenated a number of times.

The G9 deposit comprises four main zones of massive sulphide: the so-called Southeast, Southwest, North and Abajo Zones:

- Southeast, Southwest and North Zones are above the major southwest-dipping San Rafael thrust fault, whereas the Abajo Zone is below the fault;



- Southeast and North Zones occur on and near a northwest-trending felsic ridge, whereas the Southwest Zone is in a shallow basin southwest of the ridge; and
- Abajo Zone is at the top of a felsic pile that appears to be at a lower stratigraphic level than the El Largo deposit a few hundred metres to the north.

The Southeast Zone extends for about 300 metres by 200 metres, in plan view. It is defined by numerous drill intersections of well-banded, massive sulphide dominated by sphalerite with lesser chalcopyrite and minor pyrite. Galena is concentrated locally in bands that are parallel to the bedding. Elsewhere, pyrite is more abundant and both sphalerite and chalcopyrite are correspondingly less abundant.

The Southeast Zone occurs in steep-sided basins that are up to 20 metres thick. These basins extend to marginal zones of similar massive sulphide that are less than two metres thick. The southern part of the Southeast Zone contains two stacked massive sulphide lenses. In the lower lens, there are a few sub-zones, of up to four metres in thickness, which contain galena-rich areas containing high gold and silver values. Areas of strong, stringer mineralization are developed below the main massive sulphide body, which stringer zones contain moderately abundant veinlets and replacement zones with concentrations of one to five percent zinc and 0.3 to 0.6 percent copper over one metre sample widths.

The southwest side of the Southeast Zone is partially truncated by an intrusive dome/plug of felsite. Along its northern side it is cut by three curved sub-vertical faults, the northeast sides of which are displaced downwards relative to the southwest sides of the fault planes. The faults explain the sudden disappearance of the felsic rocks and Southeast Zone to the northeast, just above the San Rafael fault. The sub-vertical faults probably were formed during thrust movement associated with, and above, the leading edge of the San Rafael fault.

The North Zone extends for approximately 500 metres by 200 metres in plan view. It is similar in nature and thickness to the Southeast Zone, but it contains lesser areas of high-grade sphalerite and chalcopyrite. In places, the North Zone also contains two or more stacked massive sulphide lenses. Locally, at the base of the lower lens, is a six metre zone of high-grade gold and silver (up to 76 g/t Au and 3,570 g/t Ag over one metre), with only two percent zinc, one percent lead and 0.2 percent copper. Beneath the massive sulphide, deposits are regions of strong stringer and replacement mineralization with concentrations of up to five percent sphalerite and three percent chalcopyrite.

The Southwest Zone occurs as a thin sheet that is up to 17 metres thick along its axis and covers an area of approximately 400 metres by 200 metres in plan view. It formed in a shallow basin, southwest of the felsic volcanic ridge. The basin extends beyond the zone of felsic volcanic rocks into a zone of argillite and quartzite. The massive sulphide mineralization is dominated by pyrite with lesser sphalerite and quartz and much lesser chalcopyrite.

The Abajo Zone forms a moderately continuous sheet that is five metres to 20 metres thick, over an area of 200 metres by 300 metres. It sits on top of a felsic volcanic pile and below a thick zone of chert and cherty argillite. It contains well-banded zones that are rich in sphalerite with lesser chalcopyrite and only minor pyrite, with other zones that are dominated by pyrite with lesser sphalerite and much lesser chalcopyrite and galena. The felsic rocks contain a

moderately developed stringer zone beneath the main massive sulphide body. This stringer zone locally contains up to three percent sphalerite and three percent chalcopyrite. The stringer zone has not been tested at depth by drilling.

### 7.3.6 G9 COMPARISONS

The G9 deposit is somewhat different to the deposits located to the north of the San Rafael fault. To the north, the massive sulphide lenses are found at the top or base of the felsic volcanic rocks, depending on whether the section is upright or overturned. At G9, there are accumulations at a number of stratigraphic levels in stacked basins. Stringer mineralization is widespread and strong and both contiguous to and surrounding the G9 massive sulphide lenses. At El Largo, for example, stringer mineralization in the footwall of the lens is very limited.

The overall higher copper and anomalously high gold grades compared to other identified, massive sulphide deposits at Campo Morado suggest that the G9 sulphides intersected to date are more proximal to their source than those drilled at El Largo. The northern sulphide lenses accumulated in basins that were up to 700 metres long, 100 metres wide and 100 metres deep, with steep sides formed by felsic flows. At G9, the massive sulphides are on the flank of a major felsic flow complex and are related to a series of smaller-scale felsic domes surrounded by fragmental and tuffaceous rocks interbedded with argillite.

Relations between the Abajo Zone and the El Largo deposit suggest that Abajo Zone is at a lower stratigraphic level than El Largo. This opens the area below El Largo to exploration for a massive sulphide body at the top of the northern extension of the Abajo Zone volcanic pile.

### 7.3.7 STRUCTURE

In parts of the region, a major deformation event (D1) is characterized by north-northeast verging, upright to slightly over-turned D1 folds and thrust faults. The axial surface of the largest D1 anticline lies between the inverted Reforma and upright Naranjo stratigraphic sections and typically trends northwest, with dips mainly from 25 degrees to 40 degrees to the southwest.

Three thrust faults have been identified at Reforma: the Hinge, Footwall and Reforma faults that separate the overturned from the upright rock units. The San Rafael fault separates the Naranjo and El Largo deposits from the San Rafael, La Lucha and G9 deposits. Upright folds include a broad syncline and tighter anticline pair between the Reforma and Naranjo deposits and display an east-southeast-trending axis and shallow plunge to the southeast.

Extensional faults appear to offset all stratigraphic and other structural elements. Slickensides indicate predominant dip-slip movement. The Naranjo fault drops the stratigraphic section of the southern segment of the Naranjo deposit by 60 to 80 metres and has up to 100 metres dextral/right-lateral, strike-slip movement. The extensional north-dipping El Rey fault drops the northern side of the El Rey massive sulphide deposit 30 metres to 60 metres, relative to the southern side. The strike orientations of the Naranjo and El Rey faults are similar to the Footwall and Hinge faults at the Reforma deposit. The West Naranjo fault, which trends north south and dips steeply to the east, drops the western edge of El Rey by at least 50 metres.



## 7.4 MINERALIZATION

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Mineralization at Campo Morado mine consists of polymetallic volcanogenic massive sulphide deposits hosted within an Upper Jurassic to Lower Cretaceous sequence of felsic to intermediate flows, tuffs and fragmental volcanic rocks. There is strong continuity of the mineralization as demonstrated in the extensive diamond drilling and underground development.

Mineralization is of the volcanogenic massive sulphide (VMS) type. The massive sulphide horizons host polymetallic (base metal and precious metal) mineralization within a complex, layered sequence of felsic to intermediate volcanic rocks. The metals of interest include zinc, copper, gold, silver and lead.

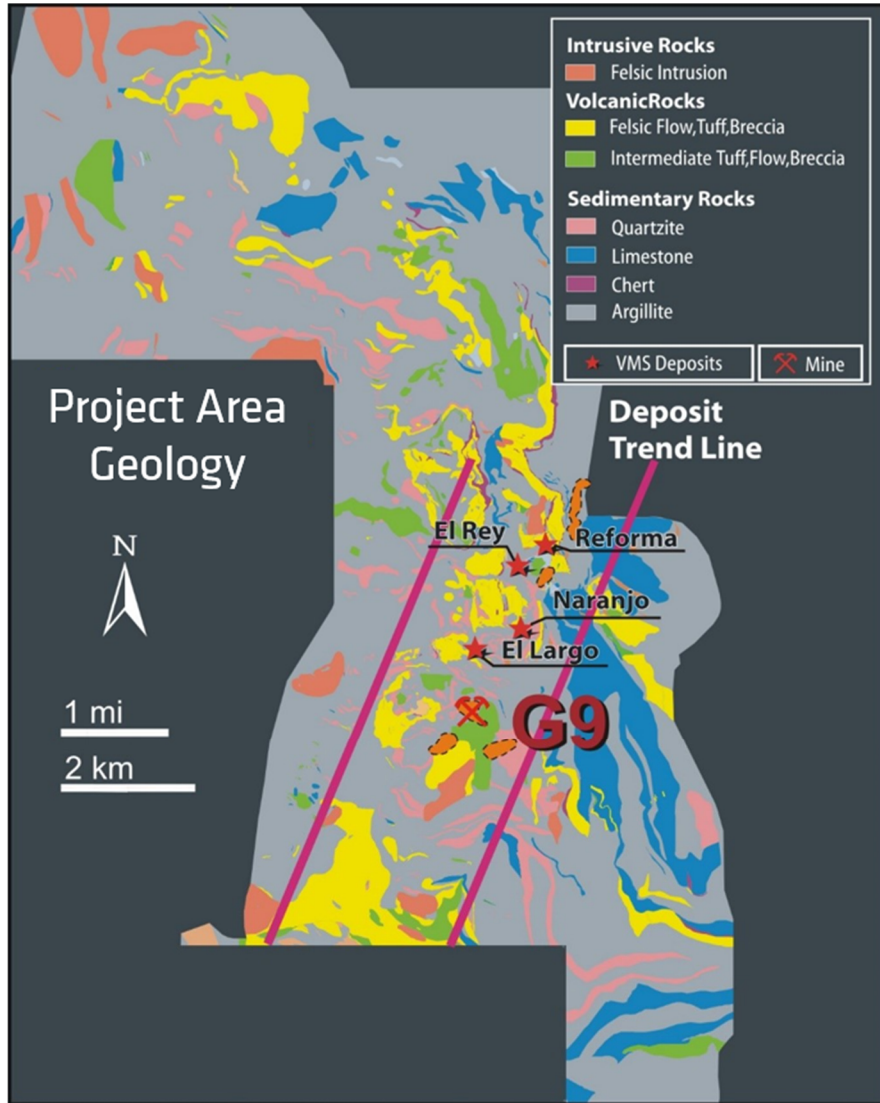
The massive sulphide horizons of the Campo Morado deposits are mainly comprised of fine grained pyrite (iron sulphide) with a variety of other sulphide minerals that include, in descending order of occurrence, sphalerite, chalcopyrite, galena, tetrahedrite-tennantite, arsenopyrite, marcasite and pyrrhotite, traces of tin minerals, electrum (gold alloy containing 20 percent or more silver) and gold.

The base metal sulphides are found as discreet mineral grains, or more frequently, as infill mineralization between or within pyrite grains. Gold occurs in liberated form or as gold present as adhesions/binary structures with chalcopyrite and galena. This binary form comprises approximately one third of the gold content in the G9 deposit. The remaining gold is present as small adhesions or inclusions with pyrite or as multi-phase occurrences contained mainly in pyrite, in which form it is not amenable to flotation. Approximately half the silver content of G9 mineralization is closely associated with tetrahedrite, about 40 percent with pyrite and the balance with galena and various minor minerals.

Felsic flows at La Trinidad contain zones of brecciation, sulphide mineralization and alteration similar to that in the main Campo Morado area.



**Figure 7-3 Campo Morado Property Area Geology**





## 8.0 DEPOSIT TYPES

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Campo Morado hosts volcanogenic massive sulphide or “VMS” type mineralization. VMS deposits are the terrestrial analogues of the black smokers seen in volcanically active hotspots in the modern seafloor and are composed primarily of stratiform accumulations of sulphide minerals. These accumulations precipitate out of the sulphurous brines emanating from ancient hydrothermal chimneys and accumulate in depressions on the seafloor, usually in areas adjacent to felsic volcanic centres. Although hybrid VMS-SEDEX deposits do exist, VMS deposits are distinguished from sedimentary exhalative (SEDEX) deposits in that their formation is closely linked to volcanism and usually independent of sedimentary processes.

Besides the hybrid-type deposits, VMS deposits are also usually broken up into several different categories named after historically significant modern type-locales, which represent different tectonic settings and rock type associations (Piercey and Galley, 2015). Camp Morado’s G9 deposit is a Kuroko type VMS, a category defined by bimodal-felsic rock types and polymetallic zinc-copper-lead deposits related to Volcanic Arc settings. Other deposits to the north are felsic and siliciclastic, and may represent other depositional environments, such as seafloor exhalative, or sub-seafloor open-space filling styles of VMS deposits (Weston, 2001).

The Campo Morado district is home to several distinct deposits occurring mainly in the Campo Morado felsic volcanic unit near its upper contact. Most of these deposits occur in a roughly four kilometre long, southwest-northeast trending grouping within the central part of the Campo Morado mining concessions and are locally offset tens to hundreds of metres from one another by late extensional faults. To the northeast, the overturned Reforma and El Rey deposits are separated from the Naranjo and El Largo deposits by a major thrust fault along the axial zone of a recumbent anticline. To the southwest of these latter two deposits, the La Lucha, San Rafael and G9 deposits occur as metre scale auriferous massive sulphide lenses with associated small stringer zones at the same stratigraphic level as the Naranjo deposit. Several other massive sulphide and stringer zones occur elsewhere along a 25 kilometre long belt that extends north-northeast and south-southwest from the central district. These include La Suriana district deposits, found in a faulted sequence of strongly altered felsic to intermediate volcanic rocks about 1,000 metre higher in structural section and several kilometres to the south of the Campo Morado district.

## 9.0 EXPLORATION

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Telson has not conducted any exploration work at Campo Morado. All recent exploration work to date was completed by previous Project operators namely, Farallon and Nyrstar and is detailed in Section 6, History and Section 10 Drilling.



## 10.0 DRILLING

The Campo Morado property has been extensively explored over a broad area with modern surface and underground core drilling equipment during 16 of the previous 22 years. Drill results provide much of the information used to support the detailed geological descriptions of the deposit geology and mineralization in Section 7. Drill results have also provided material for some of the metallurgical sampling programs of Farallon described in Section 13. The results of the extensive drill programs, in particular, the sampling, assaying and geological components, provide critical support for the geological models of the metal-bearing mineralized bodies and block grades used in the mineral resource estimates described in Section 14.

A total of 3,069 core holes with a total drilled length of 580,886 metres have been completed on the property for exploration and mine development purposes between 1995 and 2014 by previous operators. Telson has not completed any drilling at the Campo Morado since taking over the property in 2017.

Farallon performed the bulk of the surface exploration diamond drilling between 1996 and 2008 and initiated an underground drill program in 2008. Nyrstar continued and significantly expanded the underground drilling and completed a number of surface holes. Almost all of the surface and underground drilling that intersected mineralization was NQ (47.6 millimetre diameter) core. No surface drill holes have been completed on the property since 2011. Tables 10-1 through Table 10-3 summarize drilling by company, by surface or underground, and by year drilled and company respectively.

**Table 10-1 Drilling by Company**

Company	Hole ID	No. of Holes	Total (m)	Avg (m)
Consejo*	MJMC-A to MJMC-15	13	279	21
Farallon	96001 to 10880 UG080001 to UGM10-220	1,320	347,568	263
Nyrstar	11881 to 111000 UGM11-221 to UGM13-1471	1,736	233,039	134
<b>All</b>	<b>All</b>	<b>3,069</b>	<b>580,886</b>	<b>189</b>

\* Drilling completed by Consejo de Recursos Minerales. Information received after Farallon acquired La Trinidad concession from Dirección General de Minas in 1999. The total depth of some of MJMC series holes is unknown.



Farallon drilled 45 holes totalling 6,058 m on La Suriana concession in 1997 that is no longer part of the Campo Morado Property. These holes and are not listed here. Successfully wedged holes are listed as separate holes.

**Table 10-2 Drill Holes by Type – Surface or Underground**

Type	Company	Hole ID	No. of Holes	Total (m)	Avg (m)
Surface	Consejo	MJMC-A to MJMC-15	13	279	21
	Farallon	10804 to 98320	852	297,798	350
	Nyrstar	111000 to 11999	131	34,527	131
<b>Surface</b>	<b>Total</b>		<b>996</b>	<b>332,604</b>	<b>334</b>
Underground	Farallon	UG080001 to UGM10-220	468	49,770	106
	Nyrstar	CA14-01 to UGM13-1471	1,605	198,510	124
<b>Underground</b>	<b>Total</b>		<b>2,073</b>	<b>248,280</b>	<b>120</b>
<b>Both Types</b>	<b>Grand Total</b>		<b>3,069</b>	<b>580,884</b>	<b>189</b>

The March 31, 2010 Technical Report on the January 2010 Mineral Resource and Mineral Reserve Estimates for the G9 Polymetallic Mine (Au, Ag, Cu, Pb, Zn) Campo Morado Project presents a number of composited assay summaries of significant mineralized drill hole intersections at Campo Morado.

Figure 10-1 and Figure 10-2 show the drill hole locations and orientations relative to the underground development, and modeled mineralized zones in the vicinity of the Mineral Resource block models in plan and 3D view respectively.

### 10.1.1 SURVEYS

Company personnel surveyed the collar positions, elevations and orientations of each hole using total station transit and electronic distance measurement devices or GPS instruments. The drill contractor completed the downhole surveys. Collar and downhole orientations of surface holes were measured using a single shot magnetic survey instrument. Downhole measurements of surface holes were typically taken every 60 metres from 1996 to 2008, and every 50 metres from 2009 to 2011. Underground holes were downhole surveyed with a single shot instrument. The distance between downhole survey measurements in an underground hole is typically 75 to 100 metres. They may be more closely spaced, depending on the total depth of the hole. All of the instruments used were considered industry-standard at the

time they were in use. They are all capable of sufficient accuracy and precision to support Mineral Resource estimation and mine planning.

### **10.1.2 RECOVERY**

Overall core recovery from 73,912 drill run intervals measured at Campo Morado between 1996 and 2014 is 92.8%. Three quarters of these intervals have greater than 95% recovery. The most notable cases of very poor recovery occurred in several holes drilled into the upper part of the Reforma deposit during the first year of drilling by Farallon in 1996. Some of these holes intersected historical mine workings of the old Reforma Mine and as a result, had very poor recovery. The Reforma underground workings were mapped in 1996 and a digital model was created to enable subsequent drilling to avoid these openings.

## **10.2 SURFACE DRILLING**

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Surface drilling was done: to find new deposits hidden at depth such as G9, to test prospective areas as identified by geological, geochemical and geophysical surveying and modeling, to delineate and infill mineralized bodies in and around previously recognized near-surface massive sulphide occurrences such as Reforma and for metallurgical, geotechnical, environmental and mine development purposes. As exploration at Campo Morado continued, the distances between drill setups on surface and the targeted mineralized bodies at depth became greater and in some cases exceeded several hundred metres. Drilling through extensive waste wall rock proved to be expensive. There were a number of technical issues in keeping a drill string and wedged holes oriented so that they effectively intercept the deep targets. By 2009, the bulk of the drill collars shifted to underground as a more rapid and cost-effective way to delineate and infill drill the Campo Morado mineral deposits.



**Table 10-3 Drilling by Year and Company**

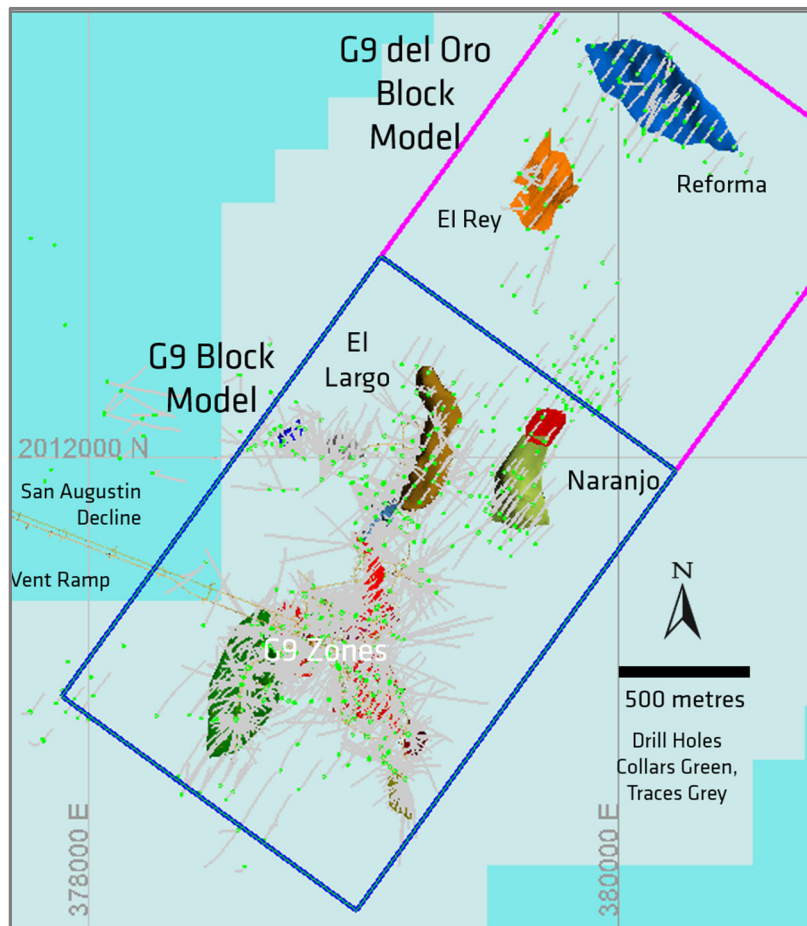
Year	Company	Hole ID	No. of Holes	Total (m)	Avg (m)
1995	La Trinidad	MJMC-A to MJMC-08	6	25	4
1996		MJMC-09 to MJMC-15	7	254	36
1996	Farallon	96001 to 96165	165	29,674	180
1997		97166 to 97309	99	25,111	254
1998		98310 to 98320	11	3,199	291
2004		4321 to 4373-D1	66	17,700	268
2005		5374 to 5514	144	50,128	348
2006		6515 to 6591	77	37,170	483
2007		7592 to 7699	108	50,455	467
2008		8700 to UG080059	155	52,201	337
2009		9793 to UG090182	134	18,364	137
2010		10806 to UGM10-220	361	63566	176
2011		Nyrstar	111000 to UGM11-580	494	81,612
2012	UGM12-581 to UGM12-1118		538	66,604	124
2013	N13-01 to UGM13-1471		429	55,028	128
2014	CA14-01 to UGM12-1057		275	29,793	108
<b>All</b>	<b>All</b>	<b>Total</b>	<b>3,069</b>	<b>580,884</b>	<b>189</b>

Drilling in 1996 through 1998 was performed by Major Drilling of Smithers, BC, using skid-mounted Longyear 44 and JT2000 equipment in two 10 hour shifts each day. Core diameters of 6.35 cm (HQ) and 4.76 cm (NQ) were recovered, with minor 4.0 cm (BQTK) in less accessible areas.

### 10.3 UNDERGROUND DRILLING

The first underground drill arrived in July 2008. The focus of the underground drilling programs was to delineate and enhance the mineral resource base by diamond drilling closely spaced (generally 15 metre) infill patterns, both to upgrade the mineral resource category and to provide sufficient definition for detailed mine planning.

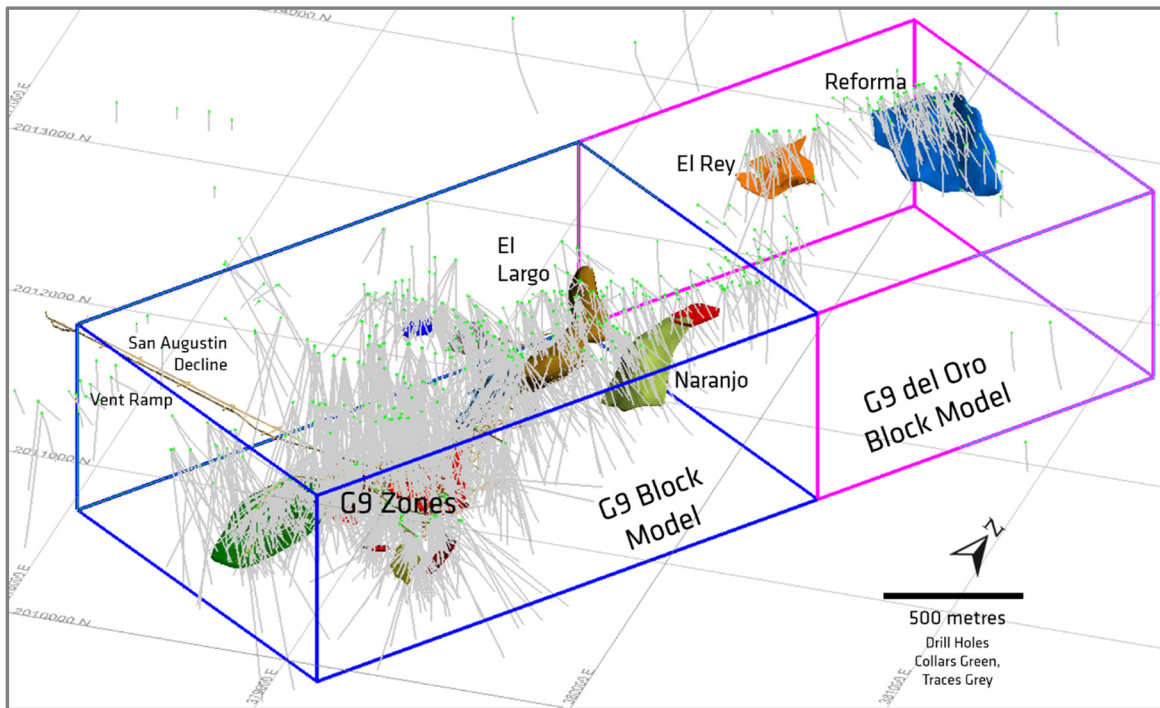
**Figure 10-1 Drill Plan Showing Underground Access, Mineralized Zones & Block Model Boundaries**



**10.3.1 CORE STORAGE**

Surface and underground drill core remaining after sampling was stored at a core storage facility at Nuevo Campo Morado, the original Farallon exploration camp, on the ridge immediately north of the Reforma deposit between 1996 and 2014. After Nyrstar put the mine operations on care and maintenance, the Nuevo Campo Morado site was left unguarded for a number of months. Unfortunately, the contents of the core storage facility were vandalized and several structures in the old exploration camp were destroyed. It may be possible to restore some of this historical drill core archive; however this work has not yet been undertaken.

**Figure 10-2 Drill Holes, Underground Access, Mineralized Zones & Block Model Extents in 3D View**



## 11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

The Campo Morado mineral deposits have been extensively explored and sampled by core drilling and over 80,000 core samples have been taken for assay analysis. Farallon and Nyrstar systematically sampled and analyzed all potentially mineralized sections of drill core by halving in 1 to 2 metre lengths. Both companies submitted control samples for QAQC purposes with all sample batches sent to external, independent off-site laboratories and to the Campo Morado Mine laboratory that were used for assay work on the project. Long sections of visibly barren wall rock samples were typically not split, sampled or analyzed. The sample preparation, primary analytical and check assay laboratories used at Campo Morado by Farallon and Nyrstar since 1996 are listed in Table 11-1.

The proportion of total drill core samples analyzed at Campo Morado by the five primary analytical laboratories is as follows: Acme 32.5%, Mine 25%, ALS 23%, Min-En 17% and ERSA 2.5%.

**Table 11-1 Sample Preparation, Primary and Check Assay Laboratories**

Years	Sample Preparation Laboratory	Primary Analytical Laboratory	Check Assay Laboratory
1996 to 1998	ALS Chemex Guadalajara, Jal.	Min-En N. Vancouver, BC	Eco-Tech Kamloops, BC
2004 to 2008		ALS Chemex N. Vancouver, BC	Acme Analytical Vancouver, BC
2008 to 2010	Acme Analytical Guadalajara, Jal.	Acme Analytical Vancouver, BC	ALS Chemex N. Vancouver, BC
2010 to August 2012			Campo Morado Mine Laboratory Campo Morado Gro. (Primary & Check Assay Laboratory)
Sept. - Dec. 2012	ERSA Global Torreon, Coa.		
Dec. 2012 Jan. – Feb. 2013	ALS Minerals Guadalajara, Jal.		
March 2013 to Sept. 2014	Acme Analytical Guadalajara, Jal.		

## 11.1 SAMPLING METHOD AND APPROACH

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### 11.1.1 CORE SAMPLING

Drill core sampling was completed by Farallon and Nyrstar personnel under the supervision of staff geologists or engineers in a secure on-site drill core logging and storage compound at the Nuevo Campo Morado (Campo Farallon) exploration camp (Figure 11.1). Sample lengths varied from 1.0 to 2.0 metres of core, depending on the geology and mineralization features identified by the core logger. Mineralized samples were typically one metre in length. Host rock, also described as wall rock, samples adjacent to the mineralized zones, were typically two metres in length. The overall average sample length for surface exploration drill holes was 1.5 metres. Typical underground sample lengths are 1.0 metre, but varied from 0.5 to 3 metres in length, depending on the geology, mineralization and core recovery as noted by the core logger.

Sampling was performed by sawing the drill core in half lengthwise using a diamond blade rock saw. One half of the core was placed into plastic sample bags and the other half back into its original position in the core box for reference purposes. A numbered sample tag matching the sample interval noted in the core log was placed in the corresponding sample bag.

The sampled material ranged from high-grade massive sulphide rock in mineralized zones, to low-grade background-level material in the surrounding host rock. Farallon and Nyrstar used two separate analytical streams, designated as 'ore' and 'host' for analysis to differentiate the two samples types, particularly for the surface exploration programs. This ensured that an analytical method appropriate for the material being analyzed was used for most samples based on sulphide content. The 'ore' designation was used if there was any question about which designation the use. As the project advanced, project focus shifted to closely-spaced delineation and infilling drilling of well-mineralized zones. As the volume of wall rock drilled and sampled decreased, a single high-grade sampling and analytical protocol was applied so that all samples in the vicinity of mineralized zones were analyzed by this method.

The flow charts illustrated in Figure 11.2 and Figure 11.3 show the sampling and analytical protocols used by Farallon for the 1996 to 1998 host samples, the 1996 to 1998 mineralized ('ore') samples and the 2004 to 2008 drill holes ('ore' and 'host'), respectively. Figure 11.4 shows the sampling and analytical protocol used by Nyrstar for the 2010 through 2014 drill programs where Acme was the primary analytical laboratory. The same overall protocol was used for other laboratories.

Mineralized samples were typically one metre in length. About half the host rock samples were two metres in length and the overall average sample length was about 1.5 metres. During sampling, attention was paid to recovery and core size to ensure that material volume was equally representative within a given sample interval.





**Figure 11-1 Farallon Core Logging & Core Storage Facility Circa 2007**



#### **11.1.1 CHAIN-OF-CUSTODY**

Drill crews boxed the core at the drill rig. Boxed core was transported to the secure on-site drill core logging and core storage compound at Nuevo Campo Morado by drill crews or company staff. There the core was logged and the sample intervals designated by a company geologist or engineer. Core for the designated sample intervals were cut in half and placed in plastic sample bags by company personnel. Bags containing the half core samples were sealed with plastic cable ties and tightly wrapped in packing tape, in a manner that allowed either company staff or laboratory workers to recognize if the samples had been tampered with. Four to six individual samples were placed into shipping sacks for transport. Sample sacks awaiting shipment were kept in a locked enclosure within the drill core logging and storage compound, prior to being picked up by the laboratory's truck for delivery to the off-site laboratories.

Figure 11-2 Sampling and Analytical Flow Charts 1996 to 1998

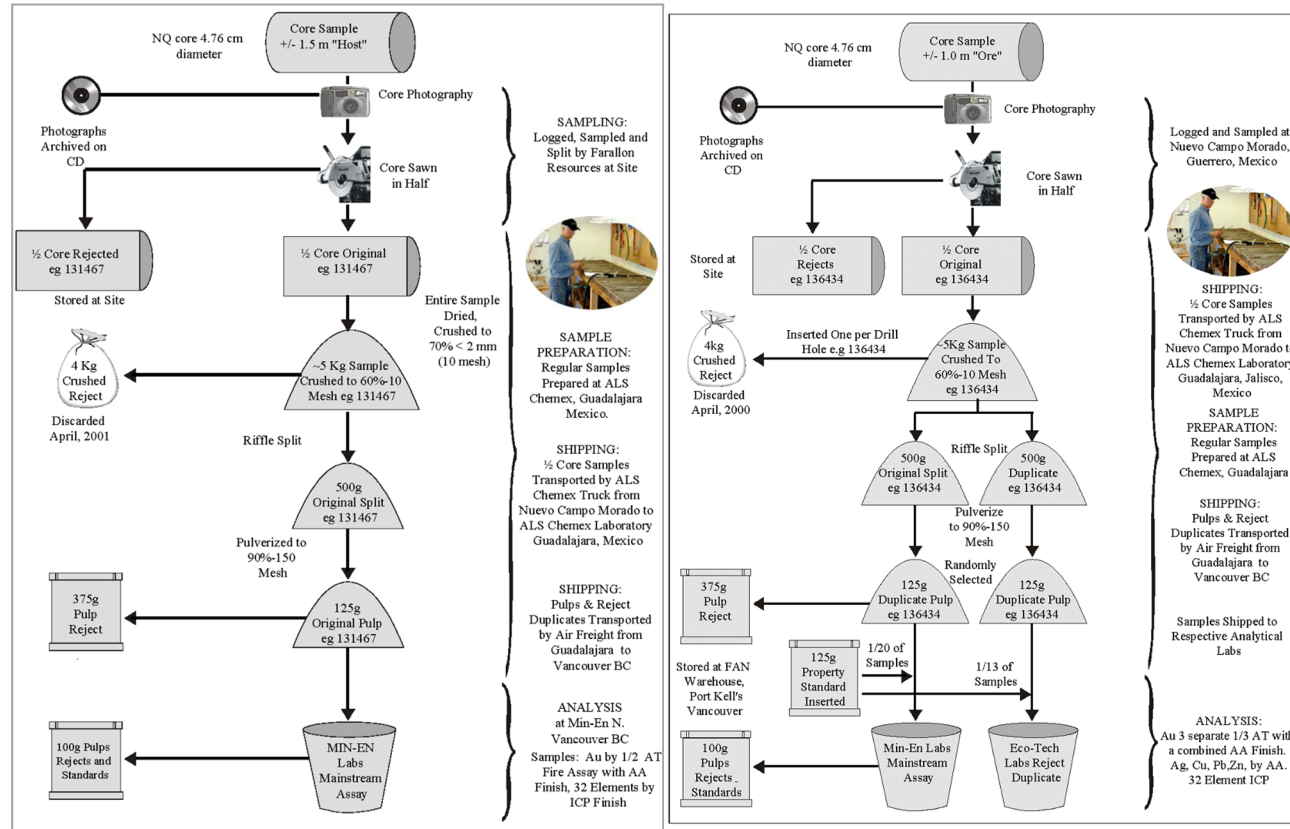


Figure 11-3 Sampling and Analytical Protocols 2004 – 2008

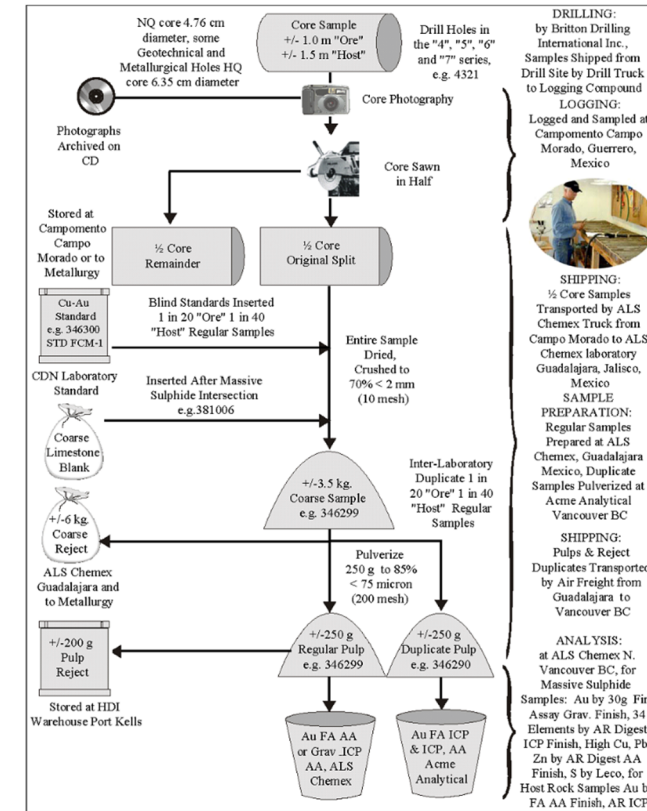
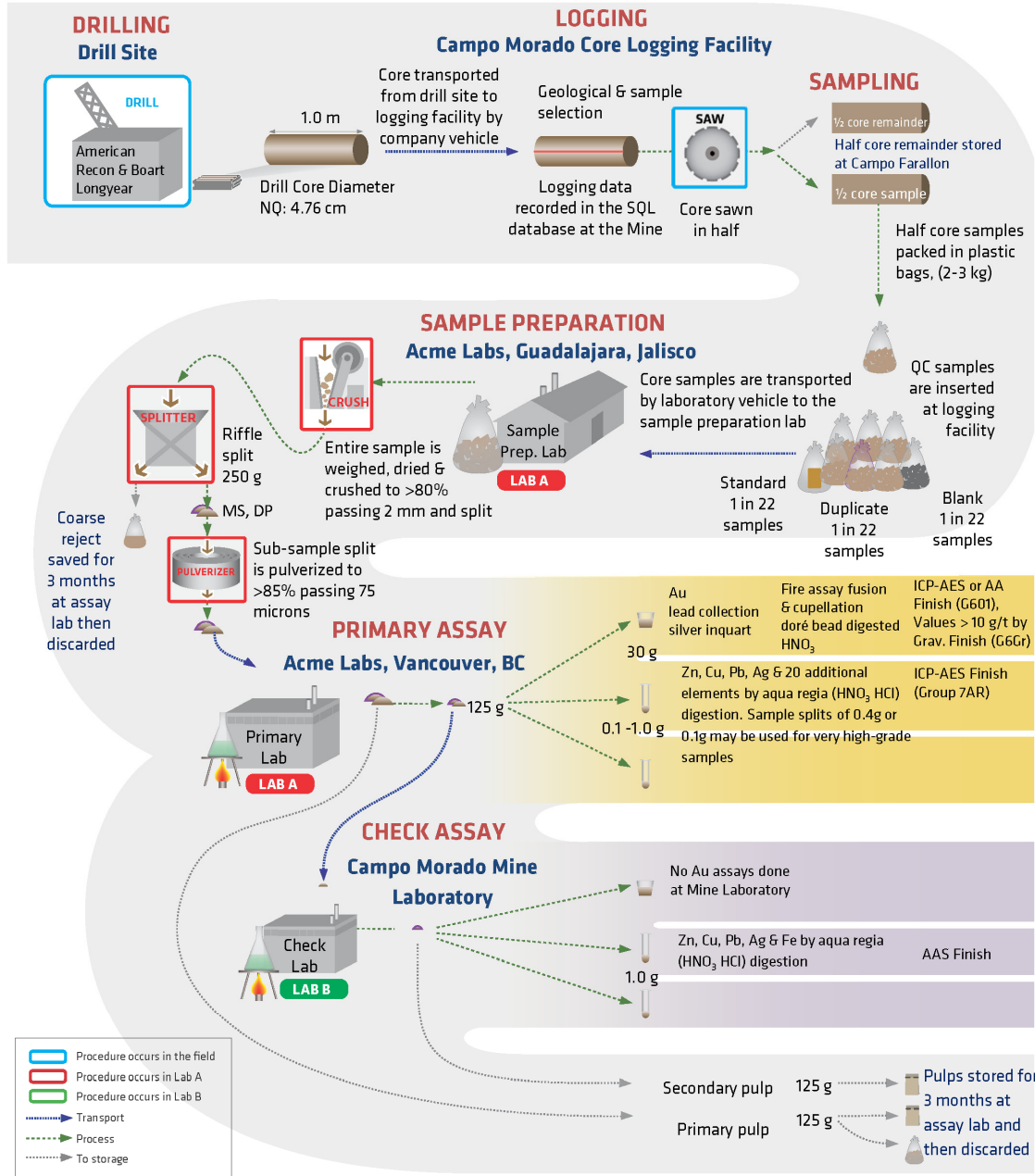




Figure 11-4 Nyrstar Typical Activity Flow for Drill Core Sampling



## 11.2 SAMPLE PREPARATION

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### 11.2.1 1996 TO 2008 SAMPLE PREPARATION

ISO 9001-2000 accredited Chemex Labs. S.A. de C.V (now ALS Minerals), prepared the samples from the 1996 through May 2008 drill programs at their sample preparation facility in Guadalajara, Jalisco State. At ALS Guadalajara, the samples were prepared using ALS method PREP-31. Samples were logged into the laboratory database system, dried, weighed and crushed to 70% passing 2 mm (10 mesh) to yield approximately 3.5 kg of coarse sample. An assay was split riffled from the crushed material and pulverized to 85% passing 75 micron. From 1996 to 1998, a 500 g pulp was pulverized. From 2004 through 2008, a 250 g pulp was pulverized. For the inter-laboratory duplicate samples, a 500 g assay split was riffled from the coarse reject for shipment to the check laboratory. Regular pulp samples, inserted QAQC samples and coarse duplicate samples for inter-laboratory analysis were shipped by airfreight to the ALS laboratory in North Vancouver, BC for delivery to the appropriate analytical laboratory. All coarse crushed rejects, remaining after sample preparation and analysis were held at the off-site laboratory for several months. After all QAQC procedures were completed, they were discarded. Farallon kept the assay pulps from all 1996 through 2010 drill programs in long-term storage. After Nyrstar purchased the Campo Morado Project, the pulps were recycled and made into assay standards.

### 11.2.2 2008 TO 2014 SAMPLE PREPARATION

From June 2008 through August 2012 and from March 2013 to September 2014, drill core samples were prepared by the Acme sample preparation laboratory in Guadalajara, Jalisco under Acme method code R150. Core samples were crushed to 80% passing 10 mesh (2 mm), homogenized and sub-sampled using a riffle splitter. A 250 g split was taken and pulverized to 85% passing 200 mesh (75 microns). Between each sample, the crusher and pulverizer preparation equipment was cleaned by brush and compressed air and then glass was crushed and pulverized to wash out any remaining sample fragments.

ERSA Global Laboratories (ERSA), of Torreón, Coahuila State did sample preparation on drill core from September to December 2012. Samples were picked up at the Mine by company truck and transported to the laboratory in Torreón. The samples were prepared using similar specifications to Acme and ALS.

ALS Minerals laboratory in Guadalajara performed the sample preparation on drill core from December 2012 through February 2013 using the same methods as described for 2004 through 2008 above.

The Campo Morado Mine laboratory also performed sample preparation on drill core samples between 2010 and 2014. The samples were prepared using similar specifications to Acme and ALS.





## 11.3 SAMPLE ANALYSIS

### 11.3.1 1996 TO 1999 SAMPLE ANALYSIS

#### *Min-En Laboratory*

From 1996 through 1998, the primary analytical laboratory for the Campo Morado drill core samples was Mineral-Environments Laboratories Ltd (Min-En) of North Vancouver, BC. All samples were assayed for gold by fire assay fusion with a gravimetric or atomic absorption spectroscopy (AAS) finish. Zinc, copper, silver and lead were determined aqua regia (HNO<sub>3</sub>-HCl acid) digestion with an AAS finish for well-mineralized samples of 'ore' designation. The Min-En analytical methods for gold and well-mineralized samples are summarized in Table 11-2. Both 'ore' and 'host' sample types were analyzed by an aqua regia (HNO<sub>3</sub>-HCl acid) digestion trace level multi-element method followed by an inductively coupled plasma - atomic emission spectroscopy (ICP-AES) finish. The 30 elements determined by this method are listed in Table 11-3.

**Table 11-2 Min-En Analytical Methods**

Element	Symbol	Method	Units	Lower Limit	Upper Limit*
Silver	Ag	Aqua Regia AAS	ppm	0.1	5,000
Silver	Ag	Fire Assay Gravimetric	ppm	5	20,000
Gold	Au	Fire Assay AAS	ppm	0.005	30
Gold	Au	Fire Assay Gravimetric	ppm	30	1,000
Copper	Cu	Aqua Regia AAS	%	0.001	40
Lead	Pb	Aqua Regia AAS	%	0.01	20
Zinc	Zn	Aqua Regia AAS	%	0.01	30

\* Assumed detection limits based on data received.

#### *Eco-Tech Laboratory*

Eco Tech Laboratories Limited (Eco-Tech) of Kamloops, BC, analyzed the inter-laboratory duplicate check samples from 1996 to 1998 on the 'ore' designated samples using analytical methods similar to Min-En. Duplicate samples received as a 500 g coarse reject split were pulverized. Gold was analyzed by 30 g fire assay fusion with gravimetric finish. For silver, copper, lead and zinc determinations, samples were digested by aqua regia and analyzed by AAS.

**Table 11-3 Min-En Multi-Element ICP-AES Method**

Element	Symbol	Units	Lower Limit	Upper Limit	Overlimit Method
Silver	Ag	ppm	0.1	200	Min-En AAS Method
Aluminum	Al	%	0.01	25	



Arsenic	As	ppm	1	10,000	
Barium	Ba	ppm	1	10,000	
Beryllium	Be	ppm	0.5	500	
Bismuth	Bi	ppm	1	10,000	
Calcium	Ca	%	0.1	25	
Cadmium	Cd	ppm	1	100	
Cobalt	Co	ppm	1	10,000	
Chromium	Cr	ppm	1	10,000	
Copper	Cu	ppm	1	10,000	Min-En AAS Method
Iron	Fe	%	0.01	15	
Gallium	Ga	ppm	1	10,000	
Potassium	K	%	0.01	10	
Lanthanum	La	ppm	50	10,000	
Magnesium	Mg	%	0.01	25	
Manganese	Mn	ppm	1	10,000	
Molybdenum	Mo	ppm	2	10,000	
Sodium	Na	%	0.01	10	
Nickel	Ni	ppm	1	10,000	
Phosphorus	P	ppm	10	10,000	
Lead	Pb	ppm	1	10,000	Min-En AAS Method
Antimony	Sb	ppm	1	10,000	
Tin	Sn	ppm	10	500	
Scandium	Sc	ppm	1	10,000	
Strontium	Sr	ppm	1	10,000	
Titanium	Ti	%	0.01	10	
Thallium	Tl	ppm	1	10,000	
Uranium	U	ppm	1	10,000	
Vanadium	V	ppm	0.1	10,000	
Tungsten	W	ppm	10	10,000	
Yttrium	Y	ppm	1	500	
Zinc	Zn	ppm	1	10,000	Min-En AAS Method
Zirconium	Zr	ppm	1	500	



### *ALS Chemex Laboratory*

ALS Chemex laboratory of North Vancouver, BC also performed a number of gold check assays, bulk density, specific gravity measurements and whole rock analysis of drill core between 1996 and 1998. Gold check assays were by 30 g fire assay with an AAS or gravimetric finish (ALS Chemex code Au\_ME-GRA21). Bulk densities were determined using a weight in air / weight in water method (ALS Chemex method code 441). Specific gravities were determined using a pycnometer (ALS Chemex method code 444). Samples for whole rock analysis to determine major oxides were subject to lithium borate – lithium metaborate fusion ( $\text{Li}_2\text{B}_4\text{O}_7 - \text{LiBO}_2$ ) with an X-ray fluorescence spectroscopy (XRF) finish. Barium, rubidium, strontium, niobium, zirconium and yttrium were also determined by a pressed pellet method with an XRF finish.

### *Surface Samples*

A major surface sampling program, consisting of 30,000 soil, rock and other surface sample types was completed by Farallon on the Campo Morado Property and surrounding region from 1996 through 1999. ALS Chemex analyzed most of the surface samples by a 32-element aqua regia digestion trace level multi-element ICP-AES method. This method included silver, copper, lead, zinc determinations, and is suitable for the analysis of soil and rock samples (ALS Chemex method codes 2118-2149). The 32 elements determined by this method are silver, aluminum, arsenic, barium, beryllium, bismuth, calcium, cadmium, cobalt, chromium, copper, gallium, mercury, iron, lanthanum, potassium, magnesium, manganese, molybdenum, sodium, nickel, phosphorus, lead, antimony, scandium, strontium, titanium, thallium, uranium, vanadium, tungsten and zinc. A large number of gold analyses by 30 g fire assay fusion AAS finish (ALS Chemex method 983) were performed on samples taken in this program. Gold assays >10,000 ppb were by one assay ton fire assay with gravimetric finish (ALS Chemex method 997).

#### **11.3.2 2004-2008 SAMPLE ANALYSIS**

### *ALS Chemex Laboratory*

The primary analytical laboratory used for the 2004 through May 2008 Farallon drill programs was the ALS Chemex facility of ALS Canada Ltd (now ALS Minerals) in North Vancouver, BC, an ISO 17025 and ISO 9001-2000 accredited laboratory.

All samples in the 'ore' sample stream in 2004 and 2005 were assayed for gold and silver by fire assay fusion with a gravimetric finish (ALS method ME-GRA21 for ore analysis Table 11-4). All 'ore' designated samples were analyzed by a multi-element method. Aqua regia digestion of a 0.4 g sample was followed by ICP-ES finish (ALS method ME-ICP41a for analysis of high grade). The 33 elements determined by this method, units, upper and lower limits and overlimit method are listed in Table 11-6.

Total sulphur was determined for the 'ore' designated samples by Leco furnace (ALS method S-IR08, Table 11-4).



Samples in the 'host' rock sample stream were analyzed for gold by 30 g fire assay fusion with an AAS finish (ALS method Au-AA23, Table 11-4). Host rock samples were analyzed by a trace level multi-element analysis procedure, aqua regia digestion of a 0.5 g sample followed ICP-AES finish (ALS method ME-ICP41, geochemical procedure for trace levels). The 34 elements determined by this method, reporting units, upper and lower limits are listed in Table 11-7.

**Table 11-4 ALS GRA21 Methods for Au and Ag**

Method Code	Element	Symbol	Units	Sample Weight (g)	Detection Limit	Upper Limit
Ag_ME-GRA21	Silver	Ag	ppm	30	5	10,000
Au_ME-GRA21	Gold	Au	ppm	30	0.05	1,000
Ag-GRA21	Silver	Ag	ppm	30	5	10,000
Au-GRA21	Gold	Au	ppm	30	0.05	1,000
Au-AA23	Gold	Au	ppm	30	0.005	10

For both 'ore' and 'host' designated samples, copper, lead or zinc values >10,000 ppm were determined by digestion of a 0.4 g sample by aqua regia with and AAS finish, (ALS methods Ag-AA46, Cu-AA46, Pb-AA46 and Zn-AA46 respectively, describe by ALS as for the evaluation of ores and high-grade materials Table 11-5).

**Table 11-5 ALS Methods ME-AA46 and S-IR08**

Method Code	Element	Symbol	Units	Lower Limit	Upper Limit
Ag-AA46	Silver	Ag	ppm	1	1,500
Ag-AA62	Silver	Ag	ppm	1	1,000
Cu-AA46	Copper	Cu	%	0.01	50
Pb-AA46	Lead	Pb	%	0.01	30
Zn-AA46	Zinc	Zn	%	0.01	30
S-IR08	Sulphur	S	%	0.01	50

From 2006 through 2008, a different analytical protocol was used for gold and silver determinations on 'ore' designated samples. Gold was determined by 30 g fire assay fusion followed by an AAS finish (ALS method Au-AA23, Table 11-4). Silver was determined by four acid digestion (HNO<sub>3</sub>-HClO<sub>4</sub>-HF-HCl) followed by and AAS finish (ALS method Ag-AA62, Table 5). The other 'ore' and 'host' analytical methods remained the same.

**Table 11-6 ALS Analytical Method ME-MS41a**

Element	Symbol	Units	Lower Limit	Upper Limit	Overlimit Method
Silver	Ag	ppm	1	200	Ag-AA46
Aluminum*	Al	%	0.05	50	
Arsenic	As	ppm	10	100,000	
Barium*	Ba	ppm	50	50,000	
Beryllium*	Be	ppm	5	500	





Bismuth	Bi	ppm	10	50,000	
Calcium*	Ca	%	0.05	50	
Cadmium	Cd	ppm	5	2,500	
Cobalt	Co	ppm	5	50,000	
Chromium*	Cr	ppm	5	50,000	
Copper	Cu	ppm	5	50,000	Cu-AA46
Iron	Fe	%	0.05	50	
Gallium	Ga	ppm	50	50,000	
Mercury	Hg	ppm	5	50,000	
Potassium*	K	%	0.05	50	
Lanthanum	La	ppm	50	50,000	
Magnesium*	Mg	%	0.05	50	
Manganese	Mn	ppm	25	50,000	
Molybdenum	Mo	ppm	5	50,000	
Sodium*	Na	%	0.05	50	
Nickel	Ni	ppm	5	50,000	
Phosphorus	P	ppm	50	50,000	
Lead	Pb	ppm	10	50,000	Pb-AA46
Sulfur	S	%	0.05	50	
Antimony	Sb	ppm	10	50,000	
Scandium*	Sc	ppm	5	50,000	
Strontium*	Sr	ppm	5	50,000	
Titanium*	Ti	%	0.05	50	
Thallium*	Tl	ppm	50	50,000	
Uranium	U	ppm	50	50,000	
Vanadium*	V	ppm	5	50,000	
Tungsten*	W	ppm	50	50,000	
Zinc	Zn	ppm	10	50,000	Zn-AA46

\* Digestion will be incomplete for most sample matrices



**Table 11-7 ALS Analytical Method ME-MS41**

Element	Symbol	Units	Lower Limit	Upper Limit
Silver	Ag	ppm	0.01	100
Aluminum*	Al	%	0.01	25
Arsenic	As	ppm	0.1	10,000
Boron*	B	ppm	10	10,000
Barium*	Ba	ppm	10	10,000
Beryllium*	Be	ppm	0.05	1,000
Bismuth	Bi	ppm	0.01	10,000
Calcium*	Ca	%	0.01	25
Cadmium*	Cd	ppm	0.01	1,000
Cobalt	Co	ppm	0.1	10,000
Chromium	Cr	ppm	1	10,000
Copper	Cu	ppm	0.2	10,000
Iron	Fe	%	0.01	50
Gallium*	Ga	ppm	0.05	10,000
Mercury	Hg	ppm	0.01	10,000
Potassium*	K	%	0.01	10
Lanthanum*	La	ppm	0.2	10,000
Magnesium*	Mg	%	0.01	25
Manganese	Mn	ppm	5	50,000
Molybdenum	Mo	ppm	0.05	10,000
Sodium	Na	%	0.01	10
Nickel	Ni	ppm	0.2	10,000
Phosphorus	P	ppm	10	10,000
Lead	Pb	ppm	0.2	10,000
Sulfur	S	%	0.01	10
Antimony	Sb	ppm	0.05	10,000
Scandium*	Sc	ppm	0.1	10,000
Strontium*	Sr	ppm	0.2	10,000
Titanium*	Ti	%	0.05	10
Thallium*	Tl	ppm	0.02	10,000
Uranium	U	ppm	0.05	10,000
Vanadium	V	ppm	1	10,000
Tungsten*	W	ppm	0.05	10,000
Zinc	Zn	ppm	2	10,000

\*Elements for which the digestion is possibly incomplete.

### *Acme Analytical Laboratory*

Inter-laboratory duplicate samples were prepared from a coarse reject split that was pulverized and analyzed by ISO 9001-2000 accredited Acme Analytical Laboratories Limited (Acme) in Vancouver, BC for the 2004 through 2008 programs. Acme determined gold by their method Group 3B, fire assay fusion method on either a 30 g or 15 g (if high sulphide) sample followed by an ICP-AES finish. Acme determined 23 elements, including silver, copper, lead and zinc by Acme group 7AR method, by digestion of a 1 g (or smaller if high sulphide) sample by aqua regia followed by an ICP-AES finish. The 23 elements determined by this method are listed in Table 11-9. Overlimits for copper, lead, zinc and silver were reweighed at 0.5 g or 0.1 g and reanalyzed by the same procedure (Acme Group 7AR.1).

#### 11.3.3 2008-2014 SAMPLE ANALYSIS

### *Acme Analytical Laboratory*

From June 2008 through August 2012 and from March 2013 to September 2014, ISO 17025:2005 accredited Acme Analytical Laboratories (now Bureau Veritas Commodities Canada Ltd.) in Vancouver BC was the primary analytical laboratory for the Project.

Samples were analyzed for gold by 30 g fire assay fusion with an ICP-AES or AAS finish (Acme method G602). For samples containing high sulphides, a 15 g sample was fire assayed. Samples greater than 10 g/tonne gold were reanalyzed for gold by a 30 g fire assay fusion with a gravimetric finish (Acme method G6Grav, Table 11-8). Zinc, copper, silver, lead and 20 additional elements were determined by aqua regia digestion of a 1 g (or smaller if high sulphide) sample followed by an ICP-AES finish (Acme Group 7AR). Silver values in excess of 300 g/tonne were reanalyzed by fire assay with a gravimetric finish, (Acme method G6Grav). Sample splits of 0.4 g or 0.1 g were used for very high-grade samples to accommodate analysis up to the upper limit.

**Table 11-8 Acme Analytical**

Method Code	Element	Symbol	Units	Sample Weight (g)	Detection Limit	Upper Limit
G6Grav	Silver	Ag	ppm	30	50	1,500
Group 3B	Gold	Au	ppb	30	2	10,000
G6Grav	Gold	Au	ppm	30	0.17	1,000

### *ALS Minerals Laboratory*

ALS Minerals was the primary analytical laboratory for part of the month of December 2012 through to February 2013 and was the check assay laboratory in 2008 and 2009. Silver, copper, iron, lead and zinc were determined by four acid digestion followed by an ICP-AES or AAS finish (ALS code ME-OG62). ALS characterizes this method as being suitable for the evaluation of ores to ensure high-grade materials are optimized for accuracy and precision at high concentrations (Table 11-10). Gold was analyzed by ALS method Au-AA23, a 30 gram lead collection fire assay fusion with an AAS finish. Gold results >10 ppm by Au-AA23 and silver results > 1000 ppm by Ag-OG2 were analyzed by 30 g

fire assay with a gravimetric finish (Au\_Ag-GRA21, Table 11-4). ALS high-grade aqua regia digestion ICP-AES multi-element analytical method ME-ICP41a, listed in Table 11-6, was used to analyze well-mineralized samples. ALS trace level aqua regia digestion ICP-AES multi-element analytical method ME-ICP41, described above, was used to analyze 'host' rocks (Table 11-7).

If ICP-AES analysis reported zinc grades higher than 10% Zn, the samples were assayed for sulphur, by Leco furnace (ALS method S-IR08, Table 11-5).

**Table 11-9 Acme Analytical Method Group 7AR**

Element	Symbol	Units	Lower Limit	Upper Limit	Overlimit Method
Silver	Ag	%	2	300 g/t	G6Grav
Aluminum*	Al	%	0.01		
Arsenic	As	%	0.01		
Bismuth*	Bi	%	0.01		
Calcium*	Ca	%	0.01		
Cadmium	Cd	%	0.001		
Cobalt*	Co	%	0.001		
Chromium*	Cr	%	0.001		
Copper	Cu	%	0.001	10%	7AR.1 re-weigh
Iron*	Fe	%	0.01		
Mercury	Hg	%	0.001		
Potassium*	K	%	0.01		
Magnesium*	Mg	%	0.01		
Manganese*	Mn	%	0.01		
Molybdenum	Mo	%	0.001	20%	7AR.1 re-weigh
Sodium*	Na	%	0.01		
Nickel*	Ni	%	0.001		
Phosphorus	P	%	0.001		
Lead	Pb	%	0.01	4%	7AR.1 re-weigh
Antimony	Sb	%	0.001		
Strontium*	Sr	%	0.001		
Tungsten*	W	%	0.001		
Zinc*	Zn	%	0.01	20%	7AR.1 re-weigh

\* Indicates partial digestion if refractory minerals are present.

**Table 11-10 ALS Analytical Method ME-OG62**

Element	Symbol	Units	Lower Limit	Upper Limit
Silver	Ag	ppm	1	1,500
Copper	Cu	%	0.001	40
Lead	Pb	%	0.001	20



Zinc	Zn	%	0.001	30
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### *ERSA Global Laboratory*

From September through December 2012, the main laboratory of ERSA Global in Torreón, Coahuila was the primary analytical laboratory for the Campo Morado Project. ISO/IEC 17025:2005 certified ERSA performed gold analyses by fire assay, and silver, copper, lead, zinc and iron analyses by aqua regia digestion with an AAS finish.

Results of control samples inserted by Nyrstar with the 2,300 samples sent to ERSA in the latter part of 2012 were reviewed by Campo Morado technical staff. It was noted that, although the zinc results were generally close to the anticipated value and within the control limits, copper and lead tended to be low and silver and gold results tended to be erratic. A number of high blanks and differing results for duplicate pairs were also noted. After late December 2012, no more samples were sent to ERSA for analysis from Campo Morado. The percentage of drill core samples analyzed by ERSA represents about 2.5% of the overall number analyzed at Campo Morado.

### *Campo Morado Mine Laboratory*

The Campo Morado Mine laboratory started operating in early 2010 and performed primary analysis and check assays on drill core samples from 2010 through 2014. The pulverized drill core samples were digested in aqua regia and analyzed for silver, copper, lead, zinc and iron by AAS analysis. Inter-laboratory duplicate samples were also analyzed at the Campo Morado Mine on-site laboratory for silver, copper, lead and zinc by aqua regia digestion followed by an AAS finish. In the case of silver, a second round of Aqua Regia digestion at a low sample size, followed by an AAS finish, was carried out when primary analysis reported a grade higher than 300 g/t Ag. The mine laboratory does not have the equipment to perform gold fire assays or multi-element analyses. The Mine laboratory results compared to the independent off-site laboratory of Acme and ALS generally had a somewhat higher failure rate for zinc and lead and had more difficulty obtaining consistently accurate silver results.

#### **11.3.4 BULK DENSITY**

For the 1996 through 2008 drill programs, whole core bulk density (specific gravity or SG) measurements were performed by Farallon staff. All competent massive sulphide sample intervals and from selected wall rock intervals were measured prior to the core being cut in half for sampling purposes. Density measurements were taken every five to ten metres down hole, using an electronic balance with a submerged basket suspended below a worktable. Samples were dried before weighing in air. The samples were then weighed in water, in the submerged basket. Bulk density estimations were carried out on site, using the weights obtained.

## **11.4 QUALITY ASSURANCE AND QUALITY CONTROL**

Farallon implemented an effective external QAQC program consistent with industry best practice and applied it to their 1996 through 1998 and 2004 through 2010 drill programs. Nyrstar continued this system in their 2011 through 2014 drill programs.

QAQC samples were designated by the core-logging geologists at the core logging facility on site and appropriate QC samples were inserted within the regular sample stream prior to shipment of samples to the sample preparation and analytical laboratories. This external QAQC system is in addition to the QAQC procedures used internally by the analytical laboratories. Table 11-11 lists the QAQC sample types used by Farallon and Nyrstar.

**Table 11-11 QAQC Sample Types Used by Nyrstar and Farallon**

QC Code	Sample Type	Description	Percent of Total
MS	Regular Mainstream	<ul style="list-style-type: none"> <li>Regular samples submitted for preparation and analysis at the primary laboratory.</li> </ul>	88.5%
DX DP	Duplicate or Replicate	<ul style="list-style-type: none"> <li>An additional split taken from the remaining pulp reject ("DP") and coarse reject ("DX").</li> <li>Random selection using pre-numbered sample tags.</li> </ul>	5%
ST SD	Standard or Certified Reference Material	<ul style="list-style-type: none"> <li>Mineralised material in pulverised form with a known concentration and distribution of element(s) of interest. Inserted at primary laboratory ("ST") and check laboratory ("SD")</li> <li>Randomly inserted using pre-numbered sample tags.</li> </ul>	5%
BL	Blank	<ul style="list-style-type: none"> <li>Basically a standard with no appreciable grade used to test for contamination. (Used from 2007 onwards).</li> </ul>	1.5%

Approximately one sample in every 20 'ore' samples was a duplicate and one sample in every 40 'host' rock samples is a duplicate. Standards were inserted at a rate of one in every 20 'ore' regular samples, or one in 40 'host' rock samples. Standards were selected for insertion based on the anticipated grade range of the surrounding regular samples and their identities were kept anonymous to the analytical laboratory. Coarse limestone or pure quartzite blanks were inserted at the end of each significant mineralized interval starting in 2007. The protocol for blanks was modified in 2010 to include one blank sample in every 20 regular samples with flexibility for inclusion immediately after visibly identified high-grade.

The zinc, copper, silver, gold and lead results of the control samples were monitored for QAQC purposes by Farallon or Nyrstar technical staff. Results of standard samples outside the control limits, duplicate sample pairs that did not agree, and high blanks, were reviewed to determine if there were any non-analytical logging or coding errors. If there were no obvious non-analytical errors, reruns were requested from the laboratory on the failed batches. The rerun results were in turn reviewed for QAQC pass/fail criteria. Reruns that passed QAQC were used to replace the data in the failed batches.

The results of the ongoing QAQC programs were summarized in regular timely reports to management.



#### 11.4.1 STANDARDS

The results for Zn, Cu, Au, Ag and Pb were monitored based on limits determined for the inserted standards from round-robin analysis at a number of independent laboratories as follows:

##### **Mean $\pm$ 3 Standard Deviations**

A standard was deemed to have failed when the result falls outside the control limits for the element of interest. The laboratory was notified and the affected range of the samples was re-run for that element until the included standard passed (falls within the control limits). The data from the affected range was then replaced by the data that passed QC.

Fourteen different multi-element standards and five host rock standards were used between 1996 and 2014. The mean grades and control limits for the 14 multi-element assay standards used at Campo Morado from 1996 through 2014 are listed in Table 11-12.

##### ***Project Based Standards***

Seven of the 14 multi-element standards used are based on mineralized material derived from the Campo Morado deposits. These standards are matrix-matched, in that the source material matches the material being assayed quite closely and tends to provide better overall analytical consistency and QAQC performance.



**Table 11-12 Multi-Element Assay Standards Used - Expected Mean and Control Limit Values**

Standard	Limits	Au g/t	Ag g/t	Cu %	Pb %	Zn %
96BM1	Upper Limit	2.40	265	0.520	1.940	4.42
	Mean	2.12	243	0.480	1.800	4.17
	Lower Limit	1.79	222	0.450	1.660	3.91
96PH2	Upper Limit	5.94	408	0.640	3.660	4.84
	Mean	5.15	391	0.590	3.350	4.48
	Lower Limit	4.35	374	0.540	3.040	4.11
FCM-1	Upper Limit	1.96	98	1.037	0.600	2.167
	Mean	1.70	86	0.938	0.508	1.934
	Lower Limit	1.45	75	0.839	0.415	1.701
FCM-2	Upper Limit	1.55	85	0.825	0.536	1.895
	Mean	1.37	74	0.756	0.479	1.739
	Lower Limit	1.19	63	0.687	0.422	1.583
FCM-4	Upper Limit	1.09	65	0.765	0.382	1.40
	Mean	0.97	55	0.702	0.340	1.28
	Lower Limit	0.85	45	0.639	0.298	1.16
FCM-6	Upper Limit	2.39	169	1.347	1.61	9.93
	Mean	2.15	157	1.251	1.52	9.27
	Lower Limit	1.91	145	1.155	1.43	8.61
FCM-7	Upper Limit	1.02	71	0.565	0.692	4.135
	Mean	0.90	65	0.526	0.629	3.850
	Lower Limit	0.77	59	0.487	0.566	3.565
HLHZ	Upper Limit	1.55	117	0.805	0.905	8.20
	Mean	1.31	101	0.760	0.815	7.66
	Lower Limit	1.07	85	0.715	0.725	7.12
HLLC	Upper Limit	1.01	75	1.580	0.335	3.265
	Mean	0.83	65	1.490	0.290	3.010
	Lower Limit	0.65	55	1.400	0.245	2.755
MC-1	Upper Limit	3.32	274	1.585	1.691	15.26
	Mean	2.99	242	1.510	1.520	13.07
	Lower Limit	2.66	210	1.435	1.349	10.88
131A	Upper Limit		32	0.034	1.79	2.96
	Mean		30	0.033	1.71	2.79
	Lower Limit		27	0.032	1.62	2.61
132B	Upper Limit		64	0.052	4.04	5.36
	Mean		60	0.049	3.86	5.13
	Lower Limit		56	0.045	3.68	4.91
133A	Upper Limit		102	0.035	5.31	11.50
	Mean		97	0.032	4.86	10.60
	Lower Limit		92	0.030	4.42	9.70



Prior to the first Farallon drill hole in 1996, two property standards were prepared from material from the massive sulphide muck pile outside the Reforma #6 adit for use as certified analytical reference materials in the drill program. The standards were prepared at CDN Resource Laboratories (CDN) under the direction of Smee & Associates Consulting Ltd. Supplies of these two standards were largely exhausted after the 1996 to 1998 drill programs.

CDN is a Vancouver-based supplier of commercial assay standards. This laboratory created a series of multi-metal standard reference samples known as the 'FCM' series. The source materials for the FCM standard series are metallurgical and assay rejects from the Reforma and G9 mineralized zones at Campo Morado. The FCM series standards were in regular use on the Campo Morado drill programs and elsewhere in the mining industry after 2004 but have since be exhausted. In addition to the CDN standards, three multi-metal standards 131a, 132b and 133a from Ore Research & Exploration Pty Ltd were used at Campo Morado.

Additional CDN standards have been used to monitor the analytical results of the 'Host Rock' sample series. They are CDN laboratory copper-gold series standards CGS-3, CGS-6, CGS-11, CGS-12 and CGS-15. These standards are only certified for gold and copper.

Some gold standard failures in the 1996 to 1998 programs identified by Farallon were traced to errors in three batches of the Min-En laboratory worksheets that were identified and corrected. Several other batches of results with gold standard failures were re-run resulting in the replacement of 990 gold assays in the 1996-1998 results. Overall, the Min-En assay results are well within acceptable tolerances. There was concern with the Eco-Tech standard results on the inter-laboratory duplicates, many of which regularly returned values outside the set tolerance limits.

The analytical results of inserted standards from the 2004 through 2014 programs were consistently monitored for QAQC performance and re-runs requested where failures occurred. The results of reruns that passed QC were used to replace the original data from the failed batches. In a small number of isolated instances, the first rerun failed, and a second rerun with a new standard was inserted and the results of the passed batches from these runs were used to replace the original data in the database.

Overall, the assay results on the inserted standards, after analytical reruns, are within acceptable tolerances for the 1996 through 2014 drill programs.

#### **11.4.2      DUPLICATE ASSAY CHECKS**

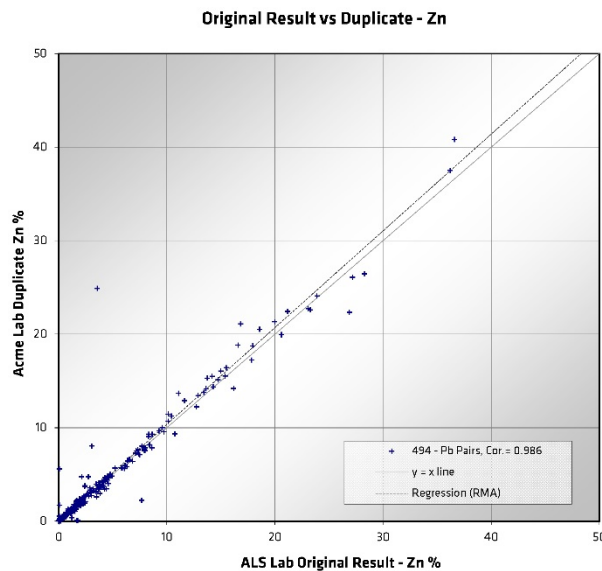
Duplicate check samples were randomly selected at a rate of one in 20 regular samples during the Farallon and Nyrstar drill programs. A 500 g or 250 g split (1996-1998 or 2004-2014 respectively) was riffled from the coarse reject during processing at the sample preparation facility and sent to the second laboratory for analysis. The duplicates were analyzed for zinc, copper, silver and lead using a similar method to the primary assay laboratory. Figure 11-6 is an example of a scatterplot for zinc of inter-laboratory duplicate results from the 2004-2008 drill programs of Farallon. Similar plots were created for all other years for the five main elements of interest, zinc, copper, silver, gold and lead.

Matched pair plots after reruns of the inter-laboratory reject duplicates comparing Min-En versus Eco-Tech from 1996 to 1998 programs, ALS Chemex versus Acme from 2004 through 2008 and Acme, ALS and ERSA versus the Mine Laboratory indicate good reproducibility of assay results and negligible to minor inter-laboratory bias.

### 11.4.3 BLANKS

A blank is basically a standard with no appreciable grade used to test for contamination. The coarse blanks that were inserted for drill hole analytical QA/QC at Campo Morado consist of visually barren, locally-derived limestone and quartzite. They are not true analytical blanks, as their mineral content prior to insertion is unknown. They do provide a reasonable assessment of contamination because their repeated analysis indicates that they contain very low levels of the elements of interest. Coarse analytical blanks were inserted in the drill hole analytical programs at Campo Morado starting in 2007. The blank insertion protocol was continued for all subsequent Farallon and Nyrstar drilling and sampling programs. Instances of blanks returning significantly elevated values were infrequent. Typically, this was ascribed to cross-contamination during sample preparation due to improper procedures being followed during crushing and pulverizing. These issues tended to be resolved with better oversight by laboratory management.

**Figure 11-5 Inter-Laboratory Duplicate Zn (2004-2008)**



## 11.5 DATABASES

### 11.5.1 1996 TO 2010

From 1996 to 2010, project operator Farallon reported that all drill logs and field data were entered into spreadsheets, and later as the project progressed, directly into a database. The key drill data tables: header, survey, geotechnical, lithology, density and sample description, were entered using a field data entry module at the Campo Morado site

office. A complete set of digital core photographs was taken and copies archived on digital media. Exploration information was validated, verified and corrected in the field, and the data exported from the site database and transmitted on a regular basis to the Vancouver office of Farallon where it was imported into the primary Access database. The field data was merged with the analytical results in the Vancouver office and the compiled information was then exported to Vulcan for further processing and modeling.

#### **11.5.2 2011-2014**

Nyrstar staff recorded drill data on hand-written logs that were then entered into a SQL server database at the Mine Office at Campo Morado. Key information such as collar locations, surveys, sampling and QAQC, assays, density, geotechnical, geology, alteration, mineralization, structure and veining data were recorded. Analytical data from the laboratories was merged with the sampling data and exported to spreadsheets for QAQC monitoring and control. The compiled information was then exported to resource and mining software for further processing and modeling.

### **11.6 SUMMARY**

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Three of the four independent off-site analytical laboratories used in the analysis of zinc, copper, silver, gold and lead of the Campo Morado drill core samples between 1996 and 2014 performed well with respect to the inserted control and duplicate samples. These Vancouver-based laboratories, Acme, ALS and Min-En, performed 72.5% of the 80,000 assays of Campo Morado drill core and provided the most consistent and reliable results.

The Campo Mine laboratory began operation in 2010. It is responsible for 25% of all drill core samples analyzed. Although not an accredited laboratory, it was subject to the same timely quality monitoring and control procedures as the off-site laboratories, including reruns of batches outside the control limits and regular direct comparison with the off-site laboratories. The Mine laboratory tended to be somewhat less consistent than the three large independent commercial laboratories that did the bulk of the work. Overall, the Mine laboratory results are generally adequate based on the results of the control samples.

Mine personnel determined that one laboratory did not meet the established QAQC criteria after 2,300 samples were returned over a 3-month period in late 2012. Overall, this laboratory was responsible for 2.5% of the total assays. The main issues were inconsistent gold and silver results and copper and lead results that were somewhat low relative to the expected values of standards. Zinc results were considered to be within the established control limits and acceptable.

The sample preparation, security and analytical procedures performed on drill core samples by Farallon and Nyrstar appear to be in accordance with good industry standard practices. Titley Consulting Ltd. considers the sample preparation, sample security and analytical procedures of Campo Morado drill core to be performed using industry accepted practices and adequate to support Mineral Resource estimation and mine planning.

## 12.0 DATA VERIFICATION

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Several verification procedures were applied to the Campo Morado drill hole data to confirm the validity and accuracy of this information for use in geologic modeling, Mineral Resource Estimation and public disclosure.

### 12.1 BEHRE DOLBEAR VERIFICATION

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Behre Dolbear conducted an independent check assay program for the Campo Morado project in 2005. They randomly selected 10 pulp samples from each of the Reforma, Naranjo, El Largo and G9 deposits from the storage facility of ALS sample preparation laboratory in Guadalajara. The check samples were analyzed at American Assay Laboratories, Inc. in Sparks, Nevada. A total of 40 pulp samples were assayed for gold by standard 30 g fire assay procedure and for silver, copper, zinc and lead by an aqua regia digestion with an AAS finish. Behre Dolbear reported that the independent check assay performed by American Assay Laboratories confirmed the presence of gold, silver, lead, zinc, and copper in the samples.

Behre Dolbear also verified the assay grades in the database against copies of the original assay certificates provided by Farallon for about 10 percent of the drill holes in the database, and reported that the assay data was entered into the database correctly.

### 12.2 TCL DATA VERIFICATION

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#### 12.2.1 VERIFICATION OF DRILL HOLE DATABASE USED IN THE 2017 MINERAL RESOURCE ESTIMATE

The drill hole database used in the 2017 Mineral Resource Estimate was compiled by TCL in SQL from several sources:

1. 2017 Nyrstar data room provided by Telson;
2. Campo Morado Mine office SQL server database backup provided by Telson site personnel;
3. Campo Morado Mine Office and Mine Laboratory archives;
4. 2010 archives of Farallon Mining Ltd.

Comparison of the collar, downhole survey and assay records of these sources showed them to be largely the same, but there were enough differences between them to be investigated further by TCL.

#### 12.2.2 VALIDATION OF COLLAR, DOWNHOLE SURVEY AND ASSAY DATA

TCL reviewed the drill hole database provided by Telson from the Nyrstar data room and identified the following discrepancies: drill holes with collar and downhole survey orientations but no collar location, drill holes with assays but no collar location, holes with no orientation or downhole survey data, holes with contradictory downhole survey data,

holes that were sampled but have no collar location and no assays, assay results that did not match from different data sources, sample numbers that did not match in different data sources, from-to's that do not match in different data sources, different intervals from different holes with the same sample number, repeating assay data, negative assay values, one interval with a Zn concentration exceeding the maximum theoretical value.

For negative values, the author confirmed with Mine staff that these values represented concentrations less than lower detection limit (e.g.  $-1 = <1$ ) as by the Mine Laboratory. These values were adjusted as follows: multiply by -1 and divide by 2, as is common industry practice for less than detection limit values.

In the case of the very high Zn assay in drill hole UG14-1614 from 40 to 41 metres, sample 817223, listed as 90.13% Zn, a value of 10.13% Zn in Mine Laboratory assay worksheet was used to correct this value.

Most of the discrepancies or gaps listed above were resolved during the validation exercise by TCL, based on a review and comparison of various Mine and Company data sources and archives. Some of the drill holes with no assay data were reviewed and discussed in more detail Section 12.2.3.

### **12.2.3 DRILL HOLES WITH NO ASSAY DATA**

Of the 3,069 drill holes on the Campo Morado Property, there are a number with no assay data. There are several reasonable explanations as to why this would be the case including: they are exploration holes that simply did not intersect any mineralization significant enough to warrant assaying, or holes drilled strictly for geotechnical, engineering, environmental purposes. However, 71 infill and delineation drill holes completed by Nyrstar intersected modeled mineralized zones but had no assays where they might logically be expected. These drill holes were reviewed and assay data was found for ten of these drill holes during the TCL validation process. The missing information was found in other sources of sampling information and assay certificate records in the site Campo Morado archives. The assays for these drill holes were verified to ensure that they had not been purposely left out of the compilation and then added to the database used for resource estimation. After this exercise was completed, 376 unassayed drill holes remain overall. Other than the 61 drill holes remaining after the above exercise, most of these holes appear to have valid reasons for not being assayed.

Of the 61 unassayed drill holes that intersect modeled mineralized zones that remained, site personnel confirmed that the geological information for these holes was used in the mineralized zone modeling process along with the other assayed holes. TCL was unable to confirm if the 61 drill holes were never assayed, or that they were assayed, but the data was never compiled in the Mine drill hole database and the information was subsequently lost or misplaced.

Eighteen of the 61 unassayed drill holes that have sampling information, but no corresponding assays, are listed in Table 12-1. Three of these drill holes pass near to, but do not intersect, a mineralized zone. Samples for drill hole 96115 were marked as lost en route to the sample preparation laboratory. This drill hole was excluded from the mineral resource estimate. In drill hole UGM12-730, assay results marked as belonging to it were located, however the sample data that ties these assay results to a downhole from-to location by means of the unique sample identifier, was not located. This drill hole was excluded from the estimate. Fourteen drill holes intersect a mineralized zone and have

sampling information but no assay results for the sample intervals. These holes were set to zero concentration for Zn, Cu, Au, Ag and Pb in the database used to estimate the resource. This has the effect of reducing the local block grade estimates to reflect this uncertainty, but does not affect the global resource.

**Table 12-1 Drill Holes that were Sampled but Assays were not Located**

Drill Hole	Sub-Zone	Drill Hole	Sub-Zone
96115	Reforma (lost in transit)	EO14-22	Near Estrella de Oro (no intersection)
UGM12-899	752 Zone	SJR 14-0082	El Largo
UGM12-906	752 Zone	SJR 14-0083	Southwest
UGM12-908	Near Abajo (no intersection)	SJR 14-0084	Southwest
UGM12-909	752 Zone	SJR 14-0085	Southwest
UGM12-914	Near 752 Zone (no intersection)	UG14-1501	El Largo
SJR13-0079	El Largo	UG14-1572	El Largo
SJR13-0080	El Largo	UG14-1573	El Largo
SJR 13-0081	El Largo	UG14-1577	El Largo

Table 12-5 lists the 46 drill holes that intersect a mineralized zone but do not have sampling information or assays. For these holes, the geological logs indicate the presence of disseminated sulphide mineralization, and in many cases massive sulphide mineralization. Some of these holes may have valid reasons for not being sampled or assayed, however no information as to why this might be the case was found. The 46 unsampled drill holes were excluded from the mineral resource estimate.

**Table 12-2 Drill Holes that Intersect a Mineralized Zone but were not Assayed**

Drill Hole	Zone	Drill Hole	Zone	Drill Hole	Zone
10830	Naranja	UG14-1582	El Largo	UGM11-470	G9
11927	El Largo	UG14-1586	El Largo	UGM11-507	G9
11931	El Largo	UG14-1587	El Largo	UGM11-561	G9
N14-Alimak	El Largo	UG14-1601	G9	UGM12-1027	G9
SJR 13-0069	G9	UG14-1611	G9	UGM12-1031	G9
SJR 13-0082	El Largo	UG14-1644	G9	UGM12-1056	G9
UG100242	G9	UG14-1652	G9	UGM12-1072	G9
UG14-1476	El Largo	UGM10-197	G9	UGM12-851	G9
UG14-1477	El Largo	UGM10-198	G9	UGM12-896	G9
UG14-1479	El Largo	UGM10-200	G9	UGM12-931	G9
UG14-1480	El Largo	UGM11-381	G9	UGM12-936	G9
UG14-1491	El Largo	UGM11-382	G9	UGM12-947	G9

UG14-1518	G9	UGM11-395	G9	UGM12-991	G9
UG14-1543	G9	UGM11-414	G9	UGM13-1163	G9
UG14-1550	G9	UGM11-420	G9		
UG14-1565	G9	UGM11-467	G9		

The entire dataset of drill holes with no assay data are shown with yellow traces in Figure 12-1. During validation by TCL, a list of 82 drill holes specifically logged and identified as having not been assayed, was also created (Table 12-3).

**Table 12-3 Drill Holes Identified as Not Sampled or Assayed**

Drill Holes						
10806	10837	11956	11987	EO14-17	N14-23	SJR 13-0052
10809	10838	11958	11992	EO14-18	N14-36	SJR 13-0055
10813	10865	11961	8791-A	EO14-20	N14-37	SJR 13-0056
10817	10870	11964	CA14-01	N13-01	N14-39	SJR 13-0058
10819	10873	11965	CA14-02	N13-02	N14-Alimak	SJR 13-0059
10821	10875	11970	CA14-03	N13-03	SJ-130002	SJR 13-0060
10823	10877	11975	CA14-08	N13-09	SJ-130006	SJR 13-0062
10826	11917	11980	CA14-09	N13-10	SJ-130007	SJR 13-0065
10827	11927	11981	CA14-10	N13-10A	SJ-130027	SJR 13-0069
10828	11931	11983	EO14-01	N14-14	SJR 13-0047	SJR 13-0082
10830	11937	11984	EO14-03	N14-16	SJR 13-0050	
10832	11950	11985	EO14-15	N14-19	SJR 13-0051	

The recompilation of the drill hole database from the various sources was successful in that a number of assay records missing from Nyrstar compilation existed in other sources, including drill hole UGM13-1393, listed on the Arseneau Consulting Ltd (2015) table of missing assays. These data were added to the SQL compilation. There were a number of assay records in the Mine data archives that could not be tied to any specific drill holes or sample intervals because the sample numbers did not match any that were recorded in the available sample log records. It is possible that some of these assay certificates could represent some of the missing drill hole assays.

TCL discussed the missing drill hole assay data with Telson staff members at the Mine during the August 2017 site visit. A Telson employee that had been employed by Nyrstar for some time prior to the Mine shut down in 2015 confirmed all underground infill and delineation holes were sampled and assayed from top to bottom unless otherwise marked as unassayed, thus assay data for the sampled holes presumably should have existed at one time. Prior to the recent care and maintenance period at Campo Morado, geology and sample logs were hand-written by the core logging geologist. These logs were stored at the exploration camp at Nuevo Campo Morado to eventually be scanned and keypunched as the drill programs progressed. The entries would then be imported into the SQL database in the Mine Office and the site sampling data would be merged with the assay data from the Mine laboratory and the external laboratories. A possible explanation provided by staff members was that this work may have fallen behind and may not have been completed prior to shut down. During shut down, the exploration camp was destroyed and all paper files were lost. TCL



concur that this may be a plausible explanation for the drill holes that were sampled but have no assay data and that it is unlikely that this information will ever be found.

### **12.3 FARALLON VALIDATION AND VERIFICATION**

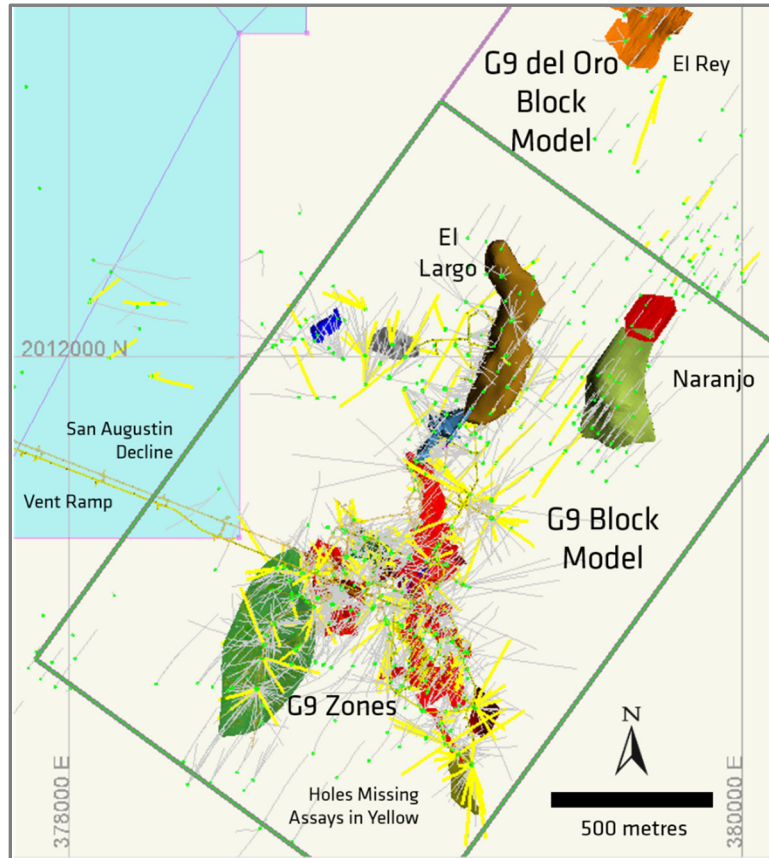
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The following due diligence, verification and validation work was completed by Farallon on the drill data:

- Print and review digital assay results in report format;
- Generate charts, tables, plans and cross-section views of the main assay elements, for visual comparison and identification of possible errors;
- Check analyses were independently selected and carried out by consultant MineFill for the 2008 Mineral Resource estimate by selecting 25 to 30 drill core reject and pulp samples from a range of exploration years from 2004 to 2006 from the North, Southeast zones and G9 deposit for analysis at a check laboratory (Acme) for Zn, Cu, Au, Ag and Pb analysis;
- For purposes of the January 2010 Mineral Resource estimate, verification and validation work was carried out and only a small number of errors were reported in the drill hole and assay database, although digital values not matching the analytical certificates was previously identified as an area of concern (most digital data was, however, found to be correct);
- Manually verify the analytical data included in tables of assay results highlighting significant mineralized intersections in all Farallon new releases against the original assay certificates.



**Figure 12-1 Drill Holes with No Assays (In Yellow)**



During the Farallon programs, site data were transmitted to the Farallon database compilation group in Vancouver on a regular basis. Validation routines were run to identify several types of errors. The compiled data from the header, survey, assay, geology and geotechnical tables are validated for missing, overlapping or duplicated intervals or sample numbers, and for matching drill hole lengths in each table. Drill hole collars and traces were viewed in data reports, plan view and in cross-section by a geologist as a visual check on the validity of the location information.

All drill hole logs and surface exploration samples collected on the project site were compiled by Farallon in an Access relational database with tables compatible with GEMS mining exploration software. For the purposes of geological and resource modelling, the Access data was exported to Maptek Vulcan software.

## 12.4 MICON DATA VERIFICATION

The steps taken by Micon to verify the databases and material provided by Telson and its Mexican subsidiaries have been described in this section.

#### 12.4.1 SITE VISIT

A site visit to the Campo Morado Project was conducted from November 17 to 19, 2017. During the site visit various facilities at the Campo Morado Project were visited, such as:

- Drove the route from Mexico City to the Project site, as this is the most common access to the site.
- During the first day on site the underground workings were visited to assess the mining operation, mineralization and ground conditions.
- A brief tour of the processing facility was conducted the first day followed by a more extensive tour and discussion of the plant operations and metallurgical testwork by Mr. Turner on Day 2.
- The warehouse and concentrate sheds were visited on the first day followed by a tour of the metallurgical and assay laboratories on Day 2 of the site visit.
- Discussions regarding the Campo Morado operations were held in the office in the morning of Day 2 followed by separate visits to the processing facilities, underground mining offices where various discussions were held into the operational details.
- A second underground visit was conducted Mr. Pilcher to the powder magazines, and hopper on Day 2.

Messer's William Lewis, James Turner and Bruce Pilcher conducted the site visit to the Campo Morado Project while Mr. Jacobs conducted his work in Toronto, based upon the information provided by Telson.

#### 12.4.2 MICON SAMPLING

While Micon did take two independent samples during its site visits these samples only represent grab samples for the areas they were taken and are of limited value when compared against the processing data obtained historically during Farallon and Nyrstar's operations as well as from Telson's current operations. They do however independently confirm the presence of key elements of interest in economically significant quantities.

Two independent samples (75020 to 75021) were taken by Micon during the site visit to confirm the mineralization in a couple of areas at the Campo Morado Project. These samples accompanied Micon back to Toronto in the luggage of Mr. Lewis.

Once the samples arrived in Toronto, they were inspected and then shipped to TSL Laboratories (TSL) in Saskatoon, Saskatchewan for analysis. The TSL quality system conforms to requirements of ISO/IEC Standard 17025 guidelines and in April 2004, TSL received its certificate stating accreditation for specific tests from the Standards Councils of Canada, Laboratory Number 538. TSL participates in the Proficiency Testing program sponsored by the Canadian Certified Reference Materials Project. TSL has qualified for the Certificates of Laboratory Proficiency since the program's inception in 1997, and this program is a requirement of its ISO/IEC 17025 accreditation.



Micon requested that the following assays and testwork be conducted on the samples by TSL:

1. Gold, silver, lead, zinc and copper assays.
2. ICP AES 42 multi-element assay package.
3. Specific gravity measurement.
4. Whole rock analysis if possible.

Table 12-5 summarizes the details for each of the samples taken by Micon during the site visit to the Campo Morado Project.

Table 12-6 summarizes the TSL silver, gold, lead, zinc and copper assay results and specific gravity measurements for the Micon samples from the Campo Morado Project.

Table 12-7 summarizes the whole rock analysis for the Micon samples taken during the site visit to the Campo Morado Project.

Table 12-8 and Table 12-9 summarizes the results from TSL's ICP 42 multielement assay package conducted on all the samples. The table is broken into parts A and B to make it easier to read in this report.

**Table 12-4 Micon Samples Taken During the Campo Morado Site Visit**

Project	Identification Number	Location	Type	Date Collected
Campo Morado	75020	Sample taken from the stockpile from the on 16 Main Drift, Level 1137, El Largo Deposit.	Grab	November 17, 2017
Campo Morado	75021	Sample taken from the crusher stockpile at the surface crusher	Grab	November 18, 2017

**Table 12-5 TSL Assay Results and Specific Gravity Measurements for the Micon Samples from the Campo Morado Project**

TSL File Number	Sample Number	Assay Results					Specific Gravity
		Au (ppb)	Ag (g/t)	Pb (%)	Zn (%)	Cu (%)	
S54874	75020	550	25.9	0.16	0.45	0.16	2.95
S54874	75021	890	95.6	1.06	2.79	0.35	4.23

**Table 12-6 Whole Rock Analysis for the Micon Samples from the Campo Morado Project**

Sample Number	Element																		LOI (%)	Sum (%)
	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)	MgO (%)	CaO (%)	Na <sub>2</sub> O (%)	K <sub>2</sub> O (%)	TiO <sub>2</sub> (%)	P <sub>2</sub> O <sub>5</sub> (%)	MnO (%)	Cr <sub>2</sub> O <sub>3</sub> (%)	Ba (ppm)	Ni (ppm)	Sr (ppm)	Zr (ppm)	Y (ppm)	Nb (ppm)	Sc (ppm)		
75020	51.06	9.44	16.88	3.42	2	0.02	1.15	0.22	0.06	0.07	0.016	2435	<20	57	147	20	7	9	14.4	99.01
75021	8.94	0.83	52.25	0.81	2.69	0.01	0.1	0.02	<0.01	0.13	0.018	664	<20	34	16	<3	<5	1	28.9	94.76

**Table 12-7 ICP AES 42 Multielement Analysis for the Micon Samples from the Campo Morado Project (Part A)**

Sample Number	Element																						
	Ag (ppm)	Al (%)	As (ppm)	Au (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (%)	Cd (ppm)	Ce (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	Hf (ppm)	In (ppm)	K (%)	La (ppm)	Li (ppm)	Mg (%)	Mn (ppm)	Mo (ppm)	Na (%)
75020	26.7	5.07	494	0.3	16	<1	14.1	1.45	34.3	33	13	72	1,567.2	11.4	1.7	2.26	0.95	13.3	47.9	1.99	570	3.8	0.015
75021	100.3	0.45	2,735	0.6	20	<1	42.2	1.87	214.8	3	20.4	114	3,375.2	34.71	0.2	14.33	0.09	1.4	3.8	0.45	1095	6.9	0.012



## 12.5 SUMMARY

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A significant amount of detailed technical work has been completed on drill core from the Campo Morado programs by Farallon and Nyrstar, including: collar and down hole surveys, geology and geotechnical logs, density measurements, core photography, sampling and analytical QAQC work, particularly for zinc, copper, gold, silver and lead – the key elements of interest. A representative portion of this work has been verified by TCL. Overall, the number of records with unresolved validation concerns in the drill hole database is much less than one percent of the total data. The impact of the unresolved validation issues on the Mineral Resource Estimate is deemed not significant.

The Qualified Persons' review of the data verification performed by others, and the verification work that they individually performed on this data provides confidence that it is of good quality and suitable for use in geological modelling and resource estimation of the Campo Morado mineral deposits.

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

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### 13.1 MINERAL PROCESSING PLANT

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Metallurgical testing of material from the G9 deposit began in June 2006 and continued through construction of the 1,500 tonnes per day mineral processing plant at Campo Morado, which was commissioned in September 2008. By October of that year, the first zinc concentrates were shipped to the Port of Manzanillo, Colima State. Operation of the processing plant confirmed the amenability of G9 deposit mineralization to conventional flotation methods to recover selective zinc, copper and lead concentrates with important by-products of gold and silver. Commercial production was declared on 1<sup>st</sup> April 2009. Farallon and its successor, Nyrstar, operated the plant for six years mostly with ore supplied from the G9 deposit with some from the El Largo deposit. The plant was originally designed for the processing of G-9 ore.

During 2014, the last year of commercial production, before mining ceased in early 2015 (due to the fall in prevailing metal prices, in particular that of zinc), the mine processed 657,075 tonnes of ore from the G9 deposit with an average grade of 1.21 g/t Au, 115.7 g/t Ag, 4.6% Zn, 0.9% Cu and 0.97% Pb. Recoveries achieved were 74.3% for Zn, 66.2% for Cu, 36.9% for Ag and 24.2% for Au. Concentrates produced were 46,308 tonnes of Zn concentrate at 48.2% Zn and 29,925 tonnes of Cu concentrate at 13.1%, including 5,697 ounces of Au and 0.9 million ounces of Ag.

The process operating cost was reported as \$31.40/tonne.

Mining subsequently restarted in September 2017 with Telson Resources and the plant was re-commissioned in October, treating initial development ore from the El Largo deposit only, to produce a bulk Cu/Pb concentrate and Zn concentrate. As with the previous operation, commencing from July 2009, it was deemed more economic to produce a bulk Cu/Pb concentrate, rather than selective copper and lead concentrates, as well as a separate Zn concentrate.

From the latest production data, for the month of January 2018, 48,976 tonnes were processed (averaging 1,580 t/d) with average grades of 3.6% Zn, 0.9% Pb, 0.4% Cu, 104 g/t Ag and 0.8 g/t Au. Recoveries achieved were 65.8% for Zn, 26.8% for Pb, 4.7% for Cu (in the Pb concentrate) and a total of 26.0% for Ag and 10.1% for Au in both concentrates. Concentrates produced were 2,522 tonnes of Zn concentrate at 46.1% Zn and 483 tonnes of Pb concentrate at 23.0% Pb.

The plant is still in a recommissioning/ramp-up phase and, coupled with lower head grades of mineralized development material and a high carbonaceous feed content, is resulting in lower-than-design Zn performance and a poor-quality bulk concentrate (effectively a Pb concentrate due to low Cu head grades). Overall precious metals recovery is low due to the highly refractory nature of the ore and the preg-robbing characteristics of the carbonaceous material. The



production of zinc concentrate has historically been the main economic driver. A further factor in poor bulk Pb concentrate quality is the reported occurrence of up to 60% of the Pb in galena as a soluble form. Recycled water is also utilised without prior treatment, although a water treatment facility is available but has not yet been recommissioned. Metallurgical recoveries have been shown to be negatively impacted by the use of recycled process water, rather than fresh water.

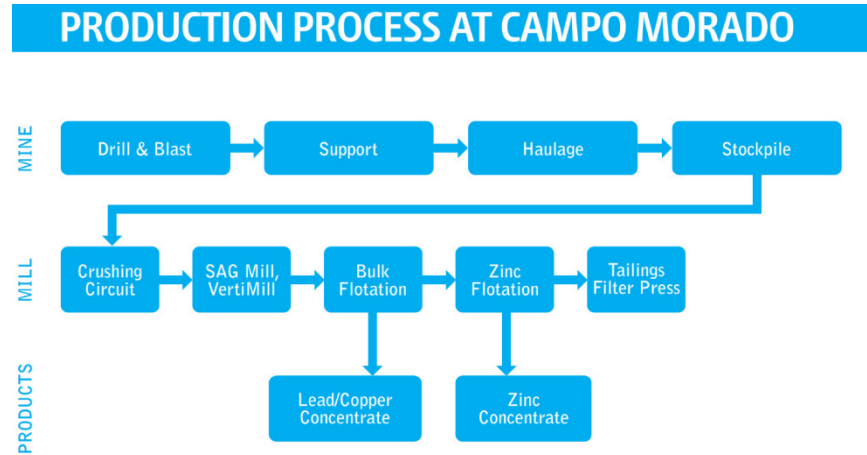
Lower grade samples, from previous testwork, also require a finer grind size and provision was made in the plant design for two additional SMD's (Stirred Media Detritors). These are available on site as part of a plant expansion that was never completed but not currently utilised.

The concentrator consists of blending, crushing, two stages of milling in closed circuit, bulk flotation, zinc flotation, with concentrate regrinding, thickening, filtration and tailings disposal. At present, the bulk concentrate is not reground although the SMD mill is available if required. In addition, a carbon pre-float circuit is utilised to remove carbonaceous material ahead of Pb rougher flotation (pumped directly to the tailings dam).

The plant is well automated and controlled with weightometers providing instantaneous and cumulative mill feed rates. A comprehensive system of on-line samplers, on-stream elemental analyzers and on-stream particle size analyzers also forms part of the control. The reagents are mixed in fully-automated mode prior to distribution using variable speed peristaltic pumps.

The original design of the concentrator was for 1,500 tonnes per day but was modified to achieve a throughput of approximately 2,200 tonnes per day. Figure 13-1 is a flow chart of the production process at Campo Morado prior to shut down in January 2015.

**Figure 13-1 Production Processes at Campo Morado**



## 13.2 METALLURGICAL TEST WORK

In June 2005, Farallon engaged consultant P. Taggart, to carry out metallurgical and process testing, including tests on the resultant flotation products, on samples of mineralization from the zones that were the first to be mined at the G9 deposit. In contrast to the testing of Naranjo and Reforma mineralization between 1995 and 1998, the results of this work concluded that conventional milling and flotation methods could be used for processing G9 material, mainly due to key differences in chemical and mineralogical characteristics between the deposits.

Conventional milling and flotation was deemed the preferred option for processing G9 mineralization. Review of other operations, as well as internal assessment by the Company, showed that the application of hydrometallurgical methods was more expensive in terms of start-up capital costs and on-going operating costs per unit processed. It was assumed that only zinc and copper concentrates would be produced from mineralized material extracted from the initial mine production areas, depending on the prevailing lead grades and mineralogy. It was determined that gold and silver would be produced as by-products, due to the nature of the precious metal mineralization.

G&T Metallurgical Services of Kamloops, BC, also conducted metallurgical test programs during 2006 through 2007 on G9 material. The main objective of these tests was to characterize the processing characteristics of G9 mineralization to enable design of the proposed mill. SGS Lakefield, of Lakefield, Ontario, was also contracted to perform grindability studies on G9 mineralization to confirm equipment selection for the crushing and grinding components of the plant. Several other metallurgical consulting companies were also engaged at this time to investigate various processing and recovery options and to refine the plant design and equipment selection process.

In June 2015, JDS Energy & Mining Inc. (JDS) of Vancouver, BC, was commissioned by Nyrstar to evaluate process alternatives to maximize profitability for Campo Morado, given the constraints imposed by the mineral reserve base that existed at that time. The focus of the work was to assist with plant expansion process engineering, to develop technical



solutions to optimize the production of three concentrates and to decrease the losses due to inefficient flotation of fine and ultrafine particles. The work included plant trials to assess short-term alternatives to improve production and a laboratory program to optimize the production for the plant expansion.

The conclusion of this study was that the valuable minerals present at El Largo are at a much finer grain size than the minerals from the former main Campo Morado mineral deposit G9. Therefore, a finer grind would be necessary to adjust the Campo Morado processing plant to improve revenue when treating the more refractory El Largo material. A process using reagents already in use by Campo Morado was developed to improve the overall production when processing a blend of El Largo with copper minerals from the Southwest mineral deposit.

The previous testwork on G-9 ore indicated that, for an average grade composite sample assaying 4.33 g/t Au, 213 g/t Ag, 1.35% Cu, 1.26% Pb and 7.87% Zn, separate copper, lead and zinc concentrates could be produced: Pb concentrate 34.1% Pb @ 51% recovery; Cu concentrate 20.4% Cu @ 69% recovery; Zn concentrate 55.1% Zn @ 86% recovery. Overall gold and silver recoveries were low at 31% and 48% respectively.

For a high zinc grade composite sample assaying 1.13 g/t Au, 77 g/t Ag, 2.36% Cu, 0.74% Pb, 15.5% Zn, copper and zinc concentrates could be produced, but with no separate lead concentrate due to the low lead content: Cu concentrate 24.0% Cu @ 84% recovery; Zn concentrate 54.1% Zn @ 94% recovery. Overall gold and silver recoveries remained low at 29% and 63% respectively.

Lower grade samples required a finer grind than higher-grade samples, and provision was subsequently made in the plant design to add two SMDs if required once head grades started to decrease (K80 of 87 microns for high grade and 36 microns for low-grade composite samples).

Recent metallurgical testwork on samples from October 2017, while processing El Largo ore, gave the following results:

Head grades: Ag 123 g/t, Zn 3.71%, Cu 0.55%, Pb 0.82%, Fe 30.4%. Soluble Pb (PbO) was 0.25%. Bulk concentrate: Pb 8.5% @ 33.5% recovery, Cu 14.2% @ 52.5% recovery, Fe 29.2%. Zn concentrate: 51.9% @ 60.5% recovery. Silver recovery was 19.4% and 17.0% recovery respectively in the bulk and zinc concentrates.

Mineralogy reports for El Largo indicate that pyrite, sphalerite and galena are the main metallic sulphide minerals present, with 90% of the three minerals associated with each other: 10% are liberated, 40% are within simple mineral assemblages but 40% are associated with each other as complex mineral assemblages. The main gangue components are quartz and carbonate groups. In addition, it is clear that organic carbon is also intimately associated with the sulphides. The precious metals are associated mainly as a solid solution with pyrite and, to a lesser extent, with arsenopyrite.

In general, compared to current plant performance, zinc circuit performance is acceptable, although recovery and concentrate grades are lower than planned. Bulk concentrate quality is relatively poor in terms of lead and copper grade and recovery, with the iron content very high and essentially the same as the head assay. Precious metal recovery is also very low.



Based on testwork carried out on samples of Naranjo and Reforma ores, zinc recovery assumptions used in 2014 were 80.0% and 60.0% respectively. This compares with 79.0% for G-9 and 68.0% for El Largo ores respectively. The zinc concentrate grade was also lower for Reforma ore at 38% Zn compared to approximately 48% Zn for the other ores. It is clear that significant metallurgical variation can be expected, both for different ore zones and also within the same ore zone, e.g. for differing iron values within the El Largo deposit.

Some of the general metallurgical challenges moving forward include dealing with the high organic carbon content and resultant precious metals loss, the soluble lead content (PbO) reducing bulk flotation performance, the fine liberation size required due to the complex sulphide mineral assemblages and the high iron/pyrite content that dilutes concentrate grades. Low precious metals recovery is also a direct result of the requirement to depress pyrite in both the bulk and zinc flotation circuits.

In general, the ores are very refractory requiring very fine grinds for reasonable liberation and, although production of zinc concentrate remains the main economic driver, that of precious metals is also important, compounded by the presence of organic carbon and intimately associated with pyrite that requires depression in the flotation circuits to the final tailings stream.

Telson reports that, to-date, there has been no significant metallurgical testwork carried out on the Reforma, Naranjo and El Rey deposits. This will be subject to a defined metallurgical testwork program in the near future in order to further optimize the flowsheet as these zones are brought into future production.

## 14.0 MINERAL RESOURCE ESTIMATES

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The current 2017 Campo Morado mineral resource estimate is based on all assayed drill holes in the vicinity of the block model extents that intersect the modeled mineralized zones. Based on descriptive statistics, 3D surfaces and wireframe models of mineralized bodies and underground workings, each of five metals, as well as bulk density, were interpreted and used in the development of search strategies and geostatistical parameters for block interpolation by ordinary kriging and resource classification.

The updated Campo Morado mineral resource estimate for all zones combined is presented in Table 14-1. Tonnes have been rounded to the nearest thousand. The base case at a 5.5% ZnEq cut-off is highlighted in bold typeface.

### 14.1 MINERAL RESOURCE ESTIMATES FOR G9, EL LARGO, NARANJO, REFORMA AND EL REY ZONES

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The updated Campo Morado mineral resource estimates for the individual zones that make up the Campo Morado combined summary in Table 14-1 are presented in the following tables:

- G9 – Table 14-2, including sub-zones:
  - 1056 Ramp, 108, 127, 127 Alto, 205 Cu Stockwork, 219, 227, 752, 752 Area 8, 912, Abajo, Abajo 302, Abajo Cu, Area 1-3, Area 1b 20, Area 3 East, Area 3 Extension, Area 4, Area 4 Annex, Area 8, Area 8 Northwest, Area 9, Baby Fish, Diff Cu 205, Muñeco, Southwest, West Extension
- El Largo – Table 14-3, including sub-zones:
  - 1104, 1144, Estrella de Oro, Fish
- Naranjo – Table 14-4, including sub-zones:
  - Naranjo, Naranjo North
- Reforma– Table 14-5
- El Rey – Table 14-6



**Table 14-1 Campo Morado Mineral Resource Estimate 2017 – All Zones**

Cut-off ZnEq (%)	ZnEq (%)	Tonnes	Au (g/t)	Ag (g/t)	Cu (%)	Pb %	Zn (%)
Measured							
3.0	6.94	17,004,000	1.34	91	0.73	0.67	3.17
4.0	7.87	13,412,000	1.49	104	0.76	0.78	3.71
<b>5.5</b>	<b>9.27</b>	<b>9,292,000</b>	<b>1.70</b>	<b>124</b>	<b>0.82</b>	<b>0.94</b>	<b>4.56</b>
7.0	10.71	6,318,000	1.88	143	0.87	1.11	5.44
Indicated							
3.0	5.78	16,848,000	1.25	85	0.68	0.61	2.25
4.0	6.62	12,324,000	1.42	99	0.72	0.73	2.68
<b>5.5</b>	<b>7.94</b>	<b>7,335,000</b>	<b>1.70</b>	<b>123</b>	<b>0.78</b>	<b>0.92</b>	<b>3.31</b>
7.0	9.32	4,086,000	1.96	151	0.86	1.12	3.94
Measured + Indicated							
3.0	6.36	33,852,000	1.29	88	0.70	0.64	2.71
4.0	7.27	25,736,000	1.46	102	0.74	0.76	3.22
<b>5.5</b>	<b>8.68</b>	<b>16,627,000</b>	<b>1.70</b>	<b>123</b>	<b>0.80</b>	<b>0.93</b>	<b>4.01</b>
7.0	10.16	10,404,000	1.91	146	0.87	1.11	4.85
Inferred							
3.0	5.03	3,316,000	0.98	76	0.52	0.58	2.10
4.0	5.85	2,152,000	1.11	90	0.55	0.71	2.54
<b>5.5</b>	<b>7.27</b>	<b>988,000</b>	<b>1.32</b>	<b>116</b>	<b>0.64</b>	<b>0.92</b>	<b>3.20</b>
7.0	8.75	416,000	1.52	148	0.76	1.10	3.78

Notes to the Mineral Resource Estimate Tables 14-1 through 14-6 inclusive:

Mineral Resources have an effective date of November 5, 2017; Eric Titley, PGeo, Titley Consulting Ltd., is the Qualified Person responsible for the Mineral Resource estimate.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The Mineral Resources were depleted to December 2014, the last phase of mining, by removing all material from the tabulation found in the excavation solids models provided by Telson Mining Corporation.

Zinc equivalent calculations used metal prices of USD 1.20/lb for zinc, USD 2.80/lb for copper, USD 17/oz for silver, USD 1150/oz for gold and USD 0.90/lb for lead and metallurgical recoveries of 70% for zinc, 68% for copper, 38% for silver, 25% for gold, and 60% for lead. Metal price assumptions used in the ZnEq calculation are the same assumptions used in establishing the cut-off for the estimates and reasonable prospects of eventual economic extraction.



*A 5.5% ZnEq cut-off in bold is considered to be appropriate for the sub-level caving mining method planned for extraction of the mineralization in the various deposits. All Mineral Resource estimates, cut-offs and metallurgical recoveries are subject to change as a consequence of more detailed economic analyses that would be required in Pre-Feasibility and Feasibility studies. The 5.5% ZnEq cut-off in bold is considered the base case Mineral Resource estimate. Other estimates are reported in the context of cut-off grade sensitivity analysis.*

*Gold grade estimates are reported as grams per tonne rounded to two decimal places. Silver grade estimates are reported as grams per tonne rounded to an integer. Copper, lead, zinc and zinc equivalent estimates are reported as percent rounded to two decimal places. Tonnages are reported as metric tonnes round to one thousand tonnes.*

*Rounding as required by reporting guidelines may result in apparent summation differences.*



**Table 14-2 G9 Zone Mineral Resource Estimate 2017**

Cut-off ZnEq (%)	ZnEq (%)	Tonnes	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Measured							
3.0	8.58	5,610,000	1.64	110	0.98	0.69	3.85
4.0	9.32	4,895,000	1.75	120	1.03	0.75	4.29
<b>5.5</b>	<b>10.67</b>	<b>3,780,000</b>	<b>1.92</b>	<b>134</b>	<b>1.11</b>	<b>0.86</b>	<b>5.14</b>
7.0	12.12	2,849,000	2.09	149	1.18	0.96	6.10
Indicated							
3.0	6.59	2,551,000	1.21	89	0.88	0.57	2.64
4.0	7.40	2,020,000	1.36	101	0.94	0.66	3.04
<b>5.5</b>	<b>8.82</b>	<b>1,324,000</b>	<b>1.55</b>	<b>117</b>	<b>1.05</b>	<b>0.79</b>	<b>3.84</b>
7.0	10.38	830,000	1.71	133	1.14	0.94	4.86
Measured + Indicated							
3.0	7.96	8,161,000	1.51	104	0.95	0.65	3.47
4.0	8.76	6,915,000	1.64	114	1.00	0.72	3.92
<b>5.5</b>	<b>10.19</b>	<b>5,104,000</b>	<b>1.82</b>	<b>130</b>	<b>1.09</b>	<b>0.84</b>	<b>4.80</b>
7.0	11.73	3,679,000	2.00	146	1.17	0.96	5.82
Inferred							
3.0	5.63	150,000	0.70	58	0.72	0.31	2.81
4.0	8.01	72,000	1.09	82	1.03	0.51	3.89
<b>5.5</b>	<b>10.84</b>	<b>39,000</b>	<b>1.44</b>	<b>105</b>	<b>1.48</b>	<b>0.73</b>	<b>5.13</b>
7.0	12.54	29,000	1.56	119	1.68	0.91	6.04

The 2017 mineral resource estimate for the G9 zone includes the following sub-zones: 1056 Ramp, 108, 127, 127 Alto, 205 Cu Stockwork, 219, 227, 752, 752 Area 8, 912, Abajo, Abajo 302, Abajo Cu, Area 1-3, Area 1b 20, Area 3 East, Area 3 Extension, Area 4, Area 4 Annex, Area 8, Area 8 Northwest, Area 9, Baby Fish, Diff Cu 205, Muñeco, Southwest, West Extension.



**Table 14-3 El Largo Zone Mineral Resource Estimate 2017**

Threshold ZnEq (%)	ZnEq (%)	Tonnes	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Measured							
3.0	6.25	6,445,000	0.96	81	0.48	0.74	3.31
4.0	7.08	4,964,000	1.02	92	0.48	0.86	3.90
<b>5.5</b>	<b>8.23</b>	<b>3,340,000</b>	<b>1.05</b>	<b>108</b>	<b>0.47</b>	<b>1.05</b>	<b>4.75</b>
7.0	9.41	2,106,000	1.04	124	0.45	1.28	5.65
Indicated							
3.0	5.37	4,110,000	1.03	73	0.45	0.65	2.62
4.0	6.22	2,843,000	1.08	85	0.43	0.78	3.26
<b>5.5</b>	<b>7.48</b>	<b>1,572,000</b>	<b>1.13</b>	<b>102</b>	<b>0.40</b>	<b>0.98</b>	<b>4.24</b>
7.0	8.62	832,000	1.13	117	0.39	1.16	5.11
Measured + Indicated							
3.0	5.91	10,555,000	0.99	78	0.47	0.70	3.04
4.0	6.77	7,807,000	1.04	89	0.46	0.83	3.67
<b>5.5</b>	<b>7.99</b>	<b>4,912,000</b>	<b>1.08</b>	<b>106</b>	<b>0.45</b>	<b>1.03</b>	<b>4.59</b>
7.0	9.19	2,938,000	1.07	122	0.43	1.25	5.50
Inferred							
3.0	4.65	2,022,000	0.94	66	0.44	0.53	2.10
4.0	5.34	1,256,000	1.01	77	0.42	0.63	2.61
<b>5.5</b>	<b>6.63</b>	<b>444,000</b>	<b>1.11</b>	<b>95</b>	<b>0.38</b>	<b>0.84</b>	<b>3.61</b>
7.0	7.84	126,000	1.16	110	0.40	0.97	4.50

The 2017 zone mineral resource estimate for the El Largo zone includes the following sub-zones: 1104, 1144, Estrella de Oro, Fish.

**Table 14-4 Naranjo Zone Mineral Resource Estimate 2017**

Threshold ZnEq (%)	ZnEq (%)	Tonnes	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Measured							
3.0	5.34	2,171,000	1.11	60	0.79	0.38	2.03
4.0	6.39	1,389,000	1.34	74	0.86	0.51	2.53
<b>5.5</b>	<b>7.84</b>	<b>753,000</b>	<b>1.66</b>	<b>97</b>	<b>0.93</b>	<b>0.72</b>	<b>3.19</b>
7.0	9.16	420,000	1.85	124	1.01	0.92	3.69
Indicated							
3.0	5.07	3,735,000	1.02	65	0.66	0.44	1.96
4.0	5.92	2,412,000	1.12	78	0.66	0.57	2.46
<b>5.5</b>	<b>7.33</b>	<b>1,141,000</b>	<b>1.28</b>	<b>106</b>	<b>0.64</b>	<b>0.81</b>	<b>3.24</b>
7.0	8.73	518,000	1.23	146	0.62	1.03	4.01
Measured + Indicated							
3.0	5.17	5,906,000	1.05	63	0.71	0.42	1.99
4.0	6.09	3,801,000	1.20	77	0.73	0.55	2.49
<b>5.5</b>	<b>7.53</b>	<b>1,894,000</b>	<b>1.43</b>	<b>103</b>	<b>0.76</b>	<b>0.77</b>	<b>3.22</b>
7.0	8.92	938,000	1.51	136	0.79	0.98	3.87
Inferred							
3.0	5.75	485,000	0.67	110	0.44	0.80	2.49
4.0	6.53	359,000	0.67	128	0.43	0.94	2.95
<b>5.5</b>	<b>7.61</b>	<b>228,000</b>	<b>0.65</b>	<b>153</b>	<b>0.40</b>	<b>1.12</b>	<b>3.64</b>
7.0	8.65	129,000	0.64	186	0.36	1.25	4.25

The 2017 mineral resource estimate for the Naranjo zone includes the following sub-zones: Naranjo, Naranjo North.





**Table 14-5 Reforma Zone Mineral Resource Estimate 2017**

Threshold ZnEq (%)	ZnEq (%)	Tonnes	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
Measured							
3.0	6.65	2,163,000	1.86	106	0.80	0.72	2.26
4.0	7.48	1,711,000	2.17	123	0.82	0.84	2.61
<b>5.5</b>	<b>8.93</b>	<b>1,115,000</b>	<b>2.77</b>	<b>155</b>	<b>0.86</b>	<b>1.06</b>	<b>3.19</b>
7.0	10.34	740,000	3.30	187	0.92	1.29	3.68
Indicated							
3.0	6.29	5,290,000	1.59	110	0.83	0.70	1.94
4.0	7.03	4,196,000	1.83	124	0.89	0.81	2.20
<b>5.5</b>	<b>8.16</b>	<b>2,807,000</b>	<b>2.23</b>	<b>149</b>	<b>0.97</b>	<b>0.99</b>	<b>2.55</b>
7.0	9.44	1,700,000	2.65	182	1.06	1.21	2.89
Measured + Indicated							
3.0	6.39	7,453,000	1.67	108	0.82	0.71	2.03
4.0	7.16	5,907,000	1.93	124	0.87	0.82	2.32
<b>5.5</b>	<b>8.38</b>	<b>3,922,000</b>	<b>2.38</b>	<b>150</b>	<b>0.94</b>	<b>1.01</b>	<b>2.73</b>
7.0	9.71	2,440,000	2.85	184	1.02	1.23	3.13
Inferred							
3.0	5.71	448,000	1.49	95	0.97	0.63	1.30
4.0	6.71	311,000	1.87	111	1.18	0.76	1.37
<b>5.5</b>	<b>7.65</b>	<b>213,000</b>	<b>2.27</b>	<b>131</b>	<b>1.33</b>	<b>0.88</b>	<b>1.45</b>
7.0	9.16	101,000	2.78	168	1.54	1.14	1.67

The 2017 mineral resource for the Reforma zone only includes Reforma.

**Table 14-6 El Rey Zone Mineral Resource Estimate 2017**

Threshold ZnEq (%)	ZnEq (%)	Tonnes	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%) <sup>8</sup>	Zn (%)
Measured							
3.0	5.99	615,000	1.53	83	0.52	0.66	2.70
4.0	6.9	453,000	1.87	97	0.51	0.80	3.20
<b>5.5</b>	<b>7.96</b>	<b>304,000</b>	<b>2.25</b>	<b>119</b>	<b>0.51</b>	<b>0.96</b>	<b>3.72</b>
7.0	8.87	203,000	2.66	139	0.51	1.11	4.11
Indicated							
3.0	5.42	1,162,000	1.29	70	0.48	0.68	2.48
4.0	6.12	853,000	1.50	78	0.49	0.78	2.89
<b>5.5</b>	<b>7.15</b>	<b>491,000</b>	<b>1.82</b>	<b>94</b>	<b>0.51</b>	<b>0.95</b>	<b>3.42</b>
7.0	8.46	206,000	2.39	117	0.55	1.17	3.94
Measured + Indicated							
3.0	5.62	1,777,000	1.37	74	0.49	0.67	2.56
4.0	6.39	1,306,000	1.63	85	0.50	0.79	3.00
<b>5.5</b>	<b>7.46</b>	<b>795,000</b>	<b>1.98</b>	<b>103</b>	<b>0.51</b>	<b>0.95</b>	<b>3.53</b>
7.0	8.66	409,000	2.52	128	0.53	1.14	4.02
Inferred							
3.0	5.14	211,000	1.25	63	0.41	0.70	2.44
4.0	5.71	154,000	1.39	68	0.44	0.77	2.77
<b>5.5</b>	<b>7.11</b>	<b>64,000</b>	<b>1.87</b>	<b>88</b>	<b>0.47</b>	<b>0.96</b>	<b>3.51</b>
7.0	8.05	31,000	2.50	110	0.54	1.03	3.67

The 2017 mineral resource for the El Rey zone only includes El Rey.

TCL believes that mineral resource estimates for the Campo Morado Project are subject to the same general types of risks that exist for underground base metal and precious metal deposits in Mexico, however there are no unique environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues known to exist which would adversely affect the Mineral Resources estimated above in Tables 14-1 through 14-6, inclusive. Mineral resources are not Mineral Reserves and do not have demonstrated economic viability. See Section 14.14 below for additional discussion of risks to the resource estimates.

It is TCL’s opinion that the November 8, 2017 mineral resource estimate has been prepared in accordance with the CIM Definition Standards for mineral resources and that Telson can use this estimate as a basis for mine planning, economic evaluation and for targeting exploration at the Campo Morado Project.

#### 14.1.1 DRILL HOLE DATABASE

Drill data is a primary support for the 2017 mineral resource estimates. The drill hole database used in the 2017 mineral resource estimate was compiled by TCL in SQL as described in Section 12-2.

According to Telson site personnel, geological and assay information from drill holes and underground excavations was used in the mineralized zone solid modeling process. These solids models are extremely important as they define the extents of the mineralized zones used to constrain the mineral resources within them. Likewise, any drill holes assays within the modeled zones are used to inform the resource.

#### 14.1.2 DRILL HOLES WITH NO ASSAY DATA

The number of excluded drill holes is 3.0% of the total number of drill holes used to estimate the mineral resources. TCL believes that the impact of the drill holes excluded or set to zero grade on the global mineral resources at Campo Morado is not significant.

### 14.2 EXPLORATORY DATA ANALYSIS

#### 14.2.1 ASSAYS

A total of 33,525 valid assays from 1,528 drill holes make up the Campo Morado data set used for resource estimation. Descriptive global statistics for all non-zero zinc, copper, gold, silver, and lead assays are presented in Table 14-7. The distribution of drill holes relative to the extent of the block model is shown in Figure 14-1. The drill holes used in the resource estimate are listed in Table 14-17 through Table 14-20.

### 14.3 MINERALIZED ZONES

The Campo Morado mineralized zones were modeled by Nyrstar based on intercepts in drill holes and underground workings. These models are 3D triangulated solids. A total of 36 mineralized zone models were created by Nyrstar geologists. The author compared these models to the available drill hole assay and geology log data. They appear to match the drill hole intercepts reasonably well, so they were used to constrain the 2017 mineral resource estimate.

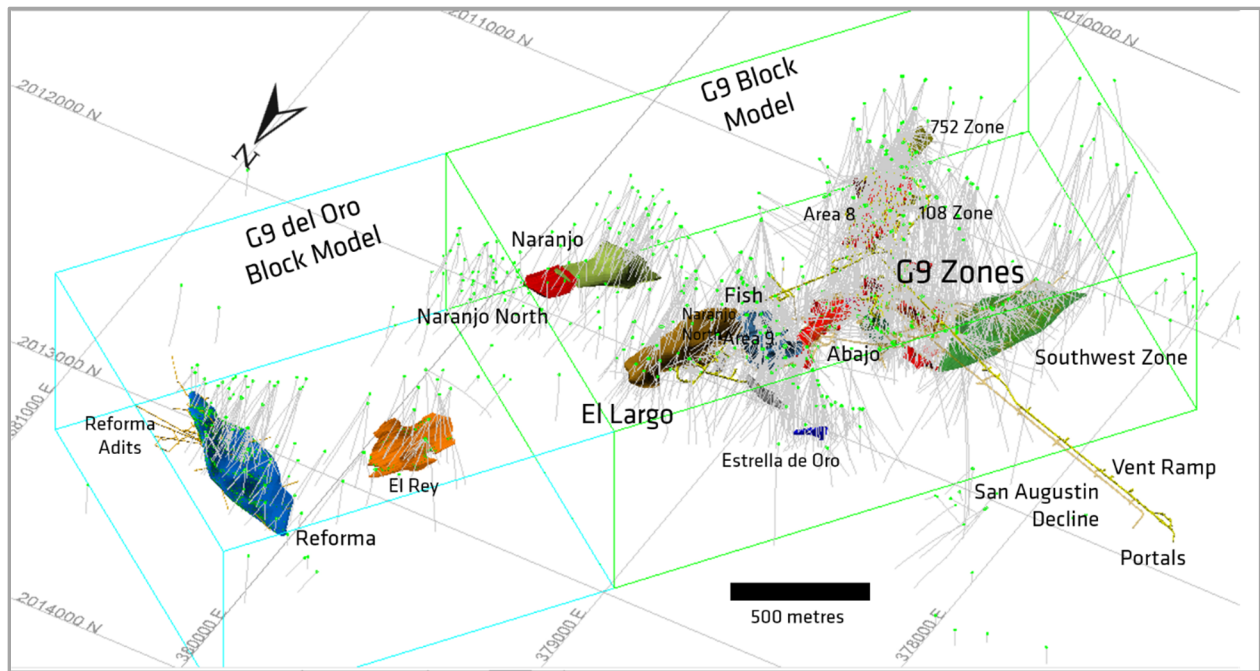
**Table 14-7 Campo Morado Deposits Descriptive Global Statistics**

Statistic (Non-zero)	Length (m)	Ag (g/t)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)
Mean	1.08	94.5	1.64	0.769	0.66	3.46



Median	1	53	0.66	0.49	0.27	1.6
Standard Deviation	0.31	185	48.5	1.05	1.06	4.77
Coefficient of Variation	0.286	1.96	29.7	1.36	1.13	1.38
Kurtosis	57.6	2837	25742	71.6	30	10
Skewness	4.5	35.5	160	6.49	4.11	2.68
Minimum	0.09	0.01	0.003	0.001	0.001	0.006
Maximum	9.54	17,985	7,800	21.84	21.1	43.5
Count	33,106	32,799	25,899	32,975	32,546	32,873

**Figure 14-1 3D View of Drill Holes Looking Southeast & Block Model Extents, Mineralized Zones**





**Table 14-8 Campo Morado Mineralized Zones, Model Groups, Model Areas & Model Codes**

Zone	Model Group	Sub-Zone	Sub-Zone Vol. m <sup>3</sup>	Model Code	Zone	Model Group	Sub-Zone	Sub-Zone Vol. m <sup>3</sup>	Model Code
G9	2	1056 Ramp	13,663	70	G9	5	Area 3 Ext.	7,167	81
G9	7	108	50,063	160	G9	9	Area 4	152,562	90
El Largo	3	1104	3,713,850	20	G9	9	Area 4 Annex	3,521	91
El Largo	3	1144	233,123	21	G9	5	Area 8	222,224	110
G9	8	127	91,199	10	G9	5	Area 8 NW	8,159	110
G9	8	127 Alto	5,820	10	G9	6	Area 9	114,670	120
G9	2	205 Cu Stock	158,917	74	G9	2	Baby Fish	21,051	51
G9	1	219	42,589	60	G9	2	Diff Cu 205	129,837	71
G9	1	227	24,335	61	El Rey	12	El Rey	796,603	30
G9	5	752	184,937	111	El Largo	3	Estrella de Oro	73,900	40
G9	5	752 Area 8	550,819	111	El Largo	10	Fish	696,087	50
G9	2	912	2,656	72	G9	6	Muñeco	323,194	250
G9	2	Abajo	256,796	70	Naranjo	4	Naranjo	2074,770	140
G9	2	Abajo 302	227,320	70	Naranjo	4	Naranjo North	101,980	140
G9	2	Abajo Cu	48,777	71	None	-9	Not Modeled		-9
G9	5	Area 1-3	87,334	80	Reforma	11	Reforma	3,427,970	150
G9	5	Area 1b 20	6,205	83	G9	1	SW Zone	1,041,380	130
G9	5	Area 3 East	925	81	G9	1	West Ext.	17,893	130

\* Volumes (m<sup>3</sup>) provided are model volumes of the zone and sub-zone 3D solid triangulations created by Nyrstar from drill hole intercepts and underground excavation. The actual in-situ volumes of the mineralized zones themselves are unknown.

## 14.4 CAPPING

Capping is the process of reducing statistically anomalous high values (outliers) within a sample population in order to avoid the disproportionate influence these values could have on block estimation. The determination of appropriate capping levels is subjective but is commonly established by reference to cumulative frequency plots of the metal assays. Prominent breaks in the plot line, particularly at the upper end, infer a sub-population of values separate from the main population. The break in the trend defines the capping value and all assays above that point are reduced to the capping value.

Capping levels based on assay grade for zinc, copper, gold, silver and lead were determined for each model group and applied to the Campo Morado assays prior to compositing. Bulk density was not capped. The capping levels are shown in Table 14-9.



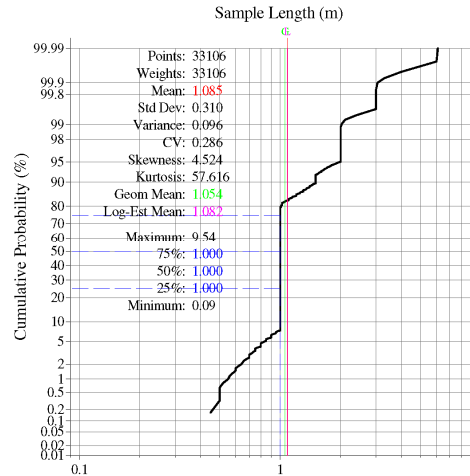
**Table 14-9 Capping Levels by Metal and Model Group**

Model Group	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)
1	12	500	6	5	16
2	10	600	15	8	25
3	7	400	2.5	7	14
4	10	700	7	4.5	8
5	16	1,000	7	7	35
6	25	2,000	5.5	8	25
7	4.5	600	1.6	3.5	9
8	8	450	4	8	18
9	25	1,000	3	6	25
10	4	250	9	2.5	8
11	20	800	10	8	12
12	10	600	2.5	5	9

## 14.5 COMPOSITES

Compositing to a common length overcomes the influence of sample length on grades within the resource estimate. Samples were composited to one metre lengths to correspond with the typical sample length of the mineralized samples taken for assay. Figure 14-2 is a log histogram of sample length. Only composites occurring either entirely or partially within a mineralized body solid model were used to inform the resource estimate. These composites were coded with a model code to tie them to a specific mineralized body. These data were then included in the composite list used to estimate the block model values of zinc, copper, gold, silver, lead and bulk density.

**Figure 14-2 Log Histogram of Sample Length (metres)**



## 14.6 BULK DENSITY

The database contains 14,893 bulk density measurements. These measurements were made on 0.1 metre long samples of drill core selected from locations throughout the Campo Morado deposits to reasonably reflect deposit-wide variations in rock mass and sulphide content. These values were not composited because they are spatially isolated and not appropriate for compositing, but were imported directly into the composite table.

TCL calculated an estimated density for sample intervals with no density measurement based on their zinc, copper, lead and iron concentrations. A factor for each of these four elements was calculated based on the regression for a range of metal concentrations from zero to the maximum theoretical value for the dominant rock-forming sulphide minerals present in the Campo Morado mineralized zones as listed in Table 14-10.

**Table 14-10 Metals Used to Calculate Density Factor**

Metallic Element	Sulphide Mineral	Formula	Density (g/cm <sup>3</sup> )	Maximum <sup>1</sup> Concentration (%)
Zn	Sphalerite	ZnS	4.08	64
Cu	Chalcopyrite	CuFeS <sub>2</sub>	4.20	34
Pb	Galena	PbS	7.60	86
Fe	Pyrite	FeS <sub>2</sub>	5.01	46

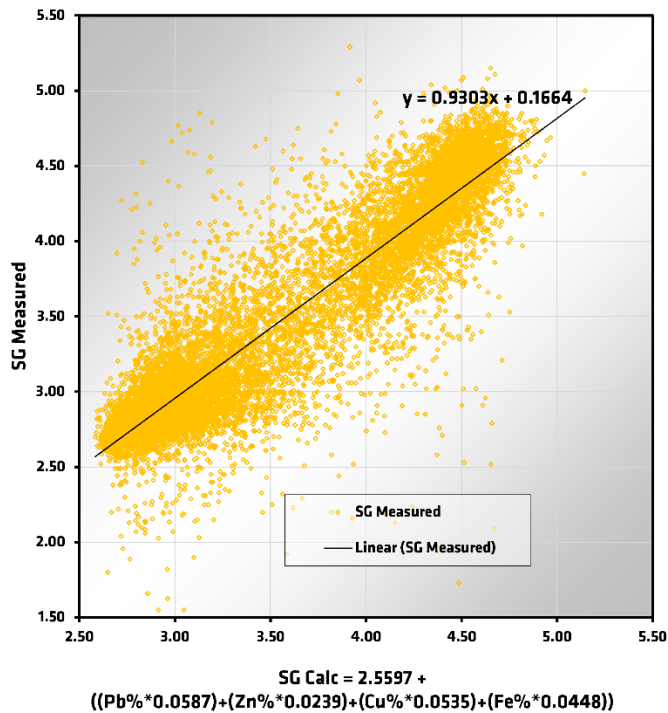
1. Maximum concentration of: Zn in 100% sphalerite, Cu in 100% chalcopyrite, Pb in 100% galena, Fe in 100% pyrite.

The density of these minerals and the maximum theoretical concentration of these elements in these minerals was calculated stoichiometrically. Regression factors for each metal were calculated from a zero metal concentration background density value of 2.5597 to the maximum values from the table. These factors were then multiplied by the

grade of each metal and added to the background density value to calculate an estimated density. The relationship of measured density to estimated density is shown in Figure 14-3. As can be seen in this figure, there appears to be a positive correlation between the two. For the purposes of estimating densities into the block model, the actual measured values were assigned to the composite file and used where available. Where no density measurement exists, the calculated estimated value was assigned to the composite file for use in estimation. Figure 14-4 is a chart that shows the mean percent difference between the measured and calculated density values. For the purposes of resource estimation, specific gravity, density and bulk density were assumed to be the same.

The kriged bulk density measurements were used to estimate tonnages.

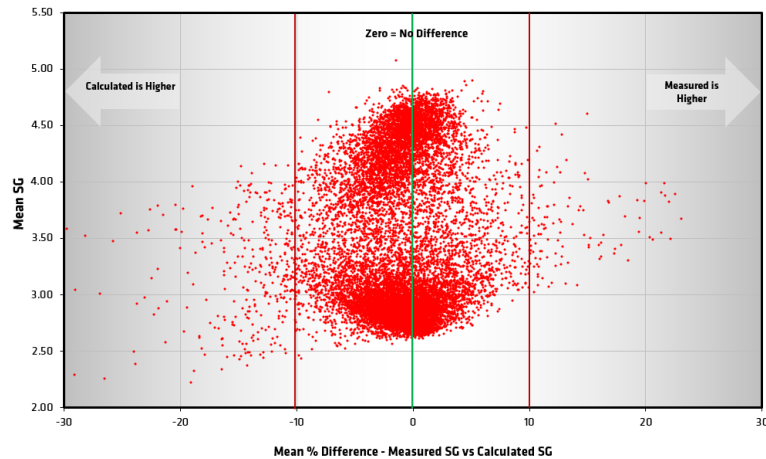
**Figure 14-3 Campo Morado Scatterplot – Measured vs Calculated Density (SG)**







**Figure 14-4 Mean Percent Difference Chart - Measure Density vs Calculated Density (SG)**



## 14.7 GEOLOGICAL INTERPRETATION

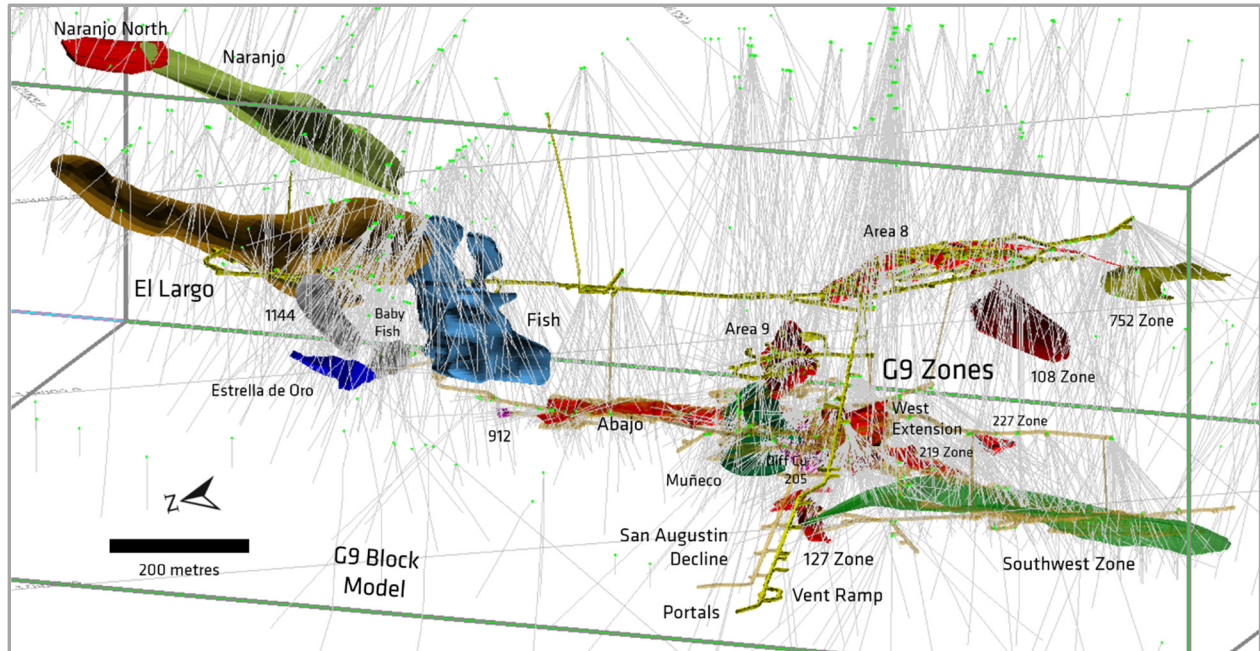
The main deposits with mineral resources defined at Campo Morado are G9 (composed of several mineralized sub-zones), El Largo, Naranjo, El Rey and Reforma. Numerous other mineralized zones have been intersected by drilling, but as yet do not constitute important resources and were not modeled or estimated.

The centre of the G9 deposits is located approximately 1.4 km southeast of the entrance of the San Agustin ramp main access to the underground workings. The main deposits are spread over an area 550 metres east west by 750 metres north south (Figure 14-5).

Other mineralized bodies are distributed along a general corridor 750 metres wide and 2.2 kilometres long following a general trend north 30° east. These deposits are aligned further away from G9, in the respective order mentioned above and at higher elevations. The general shape of the deposits is lensoidal with the longest axis trending northeast and a general dip to the Southwest.



**Figure 14-5 3D View to Southeast G9, El Largo, Naranjo Zones, Drill holes, Mine Workings**



## 14.8 SPATIAL ANALYSIS

For the purposes of spatial analysis, the 35 mineralized zone models were combined into 12 model groups according to their proximity to each other, similar orientation and statistical similarity, as was done by previous workers. The QP reviewed these groupings and found them to be reasonable. These groupings are shown in Table 14-8. The Campo Morado variogram parameters are presented in Table 14-11 and Table 14-12.



**Table 14-11 Campo Morado Deposit Variogram & Search Parameters Model Groups 1 to 6**

Model Group	Variable	Ellipse Orientation (°)			Variogram Weights			S1 Axis Range (m)			S2 Axis Range (m)		
		Bearing	Plunge	Dip	Nugget	Sill 1	Sill 2	Major	Semi-Major	Minor	Major	Semi-Major	Minor
1	Ag	11	5	-19	0.11	0.31	0.58	13	5	5	120	92	90
1	Au	40	0	-5	0.19	0.43	0.38	22	2	19	80	68	20
1	Cu	341	14	-5	0.26	0.44	0.3	12	14	19	200	85	26
1	Density	155	1	-5	0.19	0.4	0.41	5	14	17	200	72	142
1	Pb	200	9	4	0.2	0.35	0.45	10	8	6	75	60	8
1	Zn	20	-1	-15	0.14	0.41	0.45	10	5	7	200	150	32
2	Ag	20	0	-20	0.15	0.62	0.23	39	12	14	200	87	39
2	Au	21	4	-45	0.19	0.43	0.38	38	24	38	200	127	43
2	Cu	335	-1	15	0.2	0.67	0.13	10	6	6	200	180	70
2	Density	35	0	-20	0.19	0.65	0.16	35	28	50	200	32	51
2	Pb	20	2	-20	0.1	0.41	0.49	3	3	4	135	34	53
2	Zn	66	23	20	0.25	0.75		67	49	20			
3	Ag	321	58	-36	0.1	0.75	0.15	17	25	35	100	75	41
3	Au	355	0	-20	0.21	0.26	0.53	32	18	46	191	126	47
3	Cu	10	0	65	0.19	0.36	0.45	27	31	60	200	117	86
3	Density	8	-10	39	0.29	0.38	0.33	58	31	25	170	162	105
3	Pb	20	10	-2	0.15	0.52	0.33	25	7	15	200	20	28
3	Zn	25	0	0	0.15	0.54	0.31	48	13	27	181	21	40
4	Ag	182	-27	-31	0.1	0.27	0.63	61	39	36	130	100	37
4	Au	177	-28	-11	0.24	0.76		57	129	34			
4	Cu	6	27	37	0.2	0.8		132	36	48			
4	Density	347	14	-14	0.28	0.64	0.08	18	13	19	88	14	20
4	Pb	173	-34	-53	0.1	0.19	0.71	62	35	71	200	60	72
4	Zn	182	-34	-10	0.2	0.8		200	104	29			
5	Ag	162	14	27	0.1	0.9		200	146	170			
5	Au	167	-5	-70	0.2	0.8		123	150	155			
5	Cu	174	-26	-24	0.15	0.4	0.45	9	8	9	200	80	85
5	Density	316	11	-11	0.23	0.49	0.28	19	14	18	200	150	140
5	Pb	168	-15	-80	0.16	0.35	0.49	13	18	14	66	54	49
5	Zn	5	22	-28	0.1	0.9		122	38	54			
6	Ag	160	19	-74	0.1	0.61	0.29	14	5	14	175	100	19
6	Au	218	-65	-11	0.17	0.83		17	21	26			
6	Cu	131	42	-63	0.2	0.37	0.43	9	7	3	54	50	21
6	Density	139	5	-80	0.25	0.31	0.44	8	8	6	160	117	20
6	Pb	96	42	-39	0.1	0.43	0.47	11	34	3	151	95	12
6	Zn	129	5	-80	0.15	0.44	0.41	9	12	13	171	85	74

**Table 14-12 Campo Morado Deposit Variogram Parameters Model Groups 7 to 12**

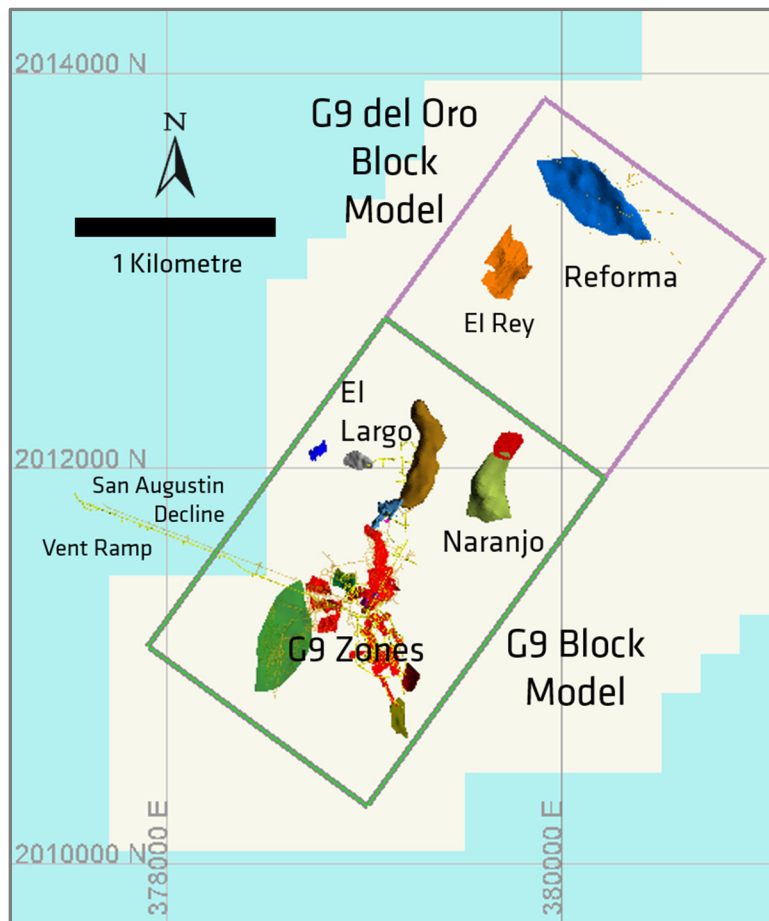
Model Group	Variable	Ellipse Orientation (°)			Variogram Weights			S1 Axis Range (m)			S2 Axis Range (m)		
		Bearing	Plunge	Dip	Nugget	Sill 1	Sill 2	Major	Semi-Major	Minor	Major	Semi-Major	Minor
7	Ag	162	14	27	0.1	0.9		200	146	170			
7	Au	167	-5	-70	0.2	0.8		123	150	155			
7	Cu	174	-26	-24	0.15	0.4	0.45	9	8	9	200	80	85
7	Density	316	11	-11	0.23	0.49	0.28	19	14	18	200	150	140
7	Pb	168	-15	-80	0.16	0.35	0.49	13	18	14	66	54	49
7	Zn	5	22	-28	0.1	0.9		122	38	54			
8	Ag	62	24	-33	0.09	0.6	0.31	8	26	16	70	100	40
8	Au	89	5	-75	0.04	0.6	0.36	27	6	7	31	30	14
8	Cu	71	14	-6	0.1	0.64	0.26	18	4	6	130	72	16
8	Density	86	-5	-75	0.2	0.28	0.52	10	32	5	64	58	50
8	Pb	88	-15	-80	0.21	0.53	0.26	40	40	15	180	60	16
8	Zn	86	-14	-32	0.16	0.49	0.35	16	36	22	110	65	70
9	Ag	62	24	-33	0.09	0.6	0.31	8	26	16	70	100	40
9	Au	89	5	-75	0.04	0.6	0.36	27	6	7	31	30	14
9	Cu	71	14	-6	0.1	0.64	0.26	18	4	6	130	72	16
9	Density	86	-5	-75	0.2	0.28	0.52	10	32	5	64	58	50
9	Pb	88	-15	-80	0.21	0.53	0.26	40	40	15	180	60	16
9	Zn	86	-14	-32	0.16	0.49	0.35	16	36	22	110	65	70
10	Ag	9	-79	63	0.15	0.32	0.53	43	51	3	185	161	31
10	Au	24	-23	63	0.28	0.57	0.15	32	41	39	140	77	70
10	Cu	56	37	65	0.25	0.29	0.46	19	11	21	180	100	60
10	Density	290	85	0	0.2	0.3	0.5	57	11	4	96	84	48
10	Pb	36	50	82	0.1	0.46	0.44	15	23	3	200	107	35
10	Zn	35	25	79	0.1	0.9		150	136	103			
11	Ag	94	17	-25	0.19	0.81		177	171	27			
11	Au	93	17	-18	0.25	0.75		200	37	31			
11	Cu	80	30	-19	0.2	0.8		197	92	24			
11	Density	152	-36	-37	0.15	0.3	0.55	20	3	20	150	80	100
11	Pb	107	6	-35	0.2	0.08	0.72	99	5	3	200	141	27
11	Zn	98	11	-33	0.09	0.91		198	189	22			
12	Ag	0	1	-5	0.32	0.68		71	149	6			
12	Au	345	4	-9	0.19	0.81		95	66	27			
12	Cu	280	15	0	0.35	0.65		49	140	7			
12	Density	83	-29	-6	0.17	0.83		118	14	9			
12	Pb	20	0	15	0.24	0.22	0.54	60	43	16	195	150	25
12	Zn	350	-4	9	0.2	0.8		83	61	18			

## 14.9 RESOURCE BLOCK MODELS

Two block models were defined in to cover the extents of the Campo Morado mineralized zones: the G9 block model, which covers the G9 deposits area, and also includes El Largo and Naranjo, the G9 del Oro block model, which covers

the Reforma and El Rey deposits. Figure 14-6 is a plan view showing the extents of the block models in relation to the modeled mineralized zones. Table 14-8 lists the block model origin, size, extents and rotation of each. Figure 14-7 illustrates the block model origins in Vulcan and Gemcom formats of both block models.

**Figure 14-6 Plan View of Campo Morado G9 & G9 del Oro Block Models & Mineralized Zones**

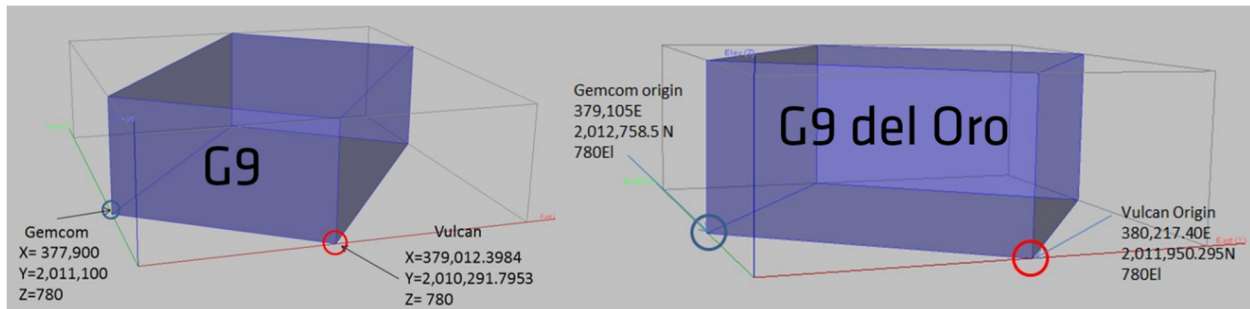


**Table 14-13 G9 & G9 del Oro Block Models - Origin, Size, Extents, Rotation**

G9 Model Block				G9 del Oro Block Model		
	X (Columns)	Y (Rows)	Z (Levels)	X (columns)	Y (Rows)	Z (Levels)
<b>Origin</b>	377,900	2,011,100	780	379,105	2,012,758.5	780
<b>Vulcan Origin</b>	379012.3984	2010291.7953	780	380217.4	2011950.295	780
<b>Extent</b>	1,375	2,050	720	1,375	1,375	720

<b>Block size</b>	5	5	5	5	5	5
<b>No blocks</b>	275	410	144	275	275	144
<b>Rotation</b>	36 degrees clockwise			36 degrees clockwise		

**Figure 14-7 Block Model Origins – G9 (G9, El Largo, Naranjo) & G9 del Oro (Reforma, El Rey)**



#### 14.10 INTERPOLATION PLAN

Grade interpolation was carried out in a single pass to the range of the second variogram structure (S2) axis, or if no S2 structure, then to the range of the first variogram structure (S1). A minimum of four samples from at least three drill holes are required to estimate a block, with at most, three samples from one drill hole. A maximum of 24 samples and 16 drill holes were used to estimate a block. Any blocks that were unestimated after the single pass were given a value of -9.

All mineralized zone and sub-zone boundaries were treated as hard boundaries. Composites from one zone were not allowed to estimate blocks across a zone boundary.

#### 14.11 REASONABLE PROSPECTS OF EVENTUAL ECONOMIC EXTRACTION

The Campo Morado mineral resource estimate is constrained by conceptual 3D solids models of the massive sulphide zones and depleted by the mined-out volumes. The boundaries of the solids models match the known intercepts of the drill holes and underground excavations with a reasonable level of accuracy. There is existing underground access within, or in the vicinity of the G9, El Largo and Reforma deposits and sub-zones, and within 500 metres of the Naranjo and El Rey deposits.

A net metal value US\$100 per tonne (no offsite costs) is considered to be a reasonable value to support mining and concentrate production operations at Campo Morado considering the proposed bulk mining plan (sub-level caving), metal recoveries and metal prices. A metal value of 5.5% ZnEq at \$1.20/lb zinc = US\$102.30 per tonne. An average grade of 5.5% ZnEq for all zones combined occurs at a 2.0% ZnEq cut-off in the current Mineral Resource Estimate. The overall average metal grades at this cut-off are listed below along with the corresponding metal price, recovery assumptions and contribution to the overall ZnEq% value:

- 2.2 % Zn @ 70% recovery @ \$1.20/lb = \$40.74 (2.2% ZnEq)
- 0.70 % Cu @ 68% recovery @ \$2.80/lb = \$29.38 (1.59% ZnEq)
- 70 ppm Ag @ 38% recovery @ \$17/oz = \$14.54 (0.78% ZnEq)
- 1.2 ppm Au @ 25% recovery @ \$1150/oz = \$11.09 (0.60% ZnEq)
- 0.55 % Pb @ 60% recovery @ \$0.90/lb = \$6.55 (0.35% ZnEq)

## 14.12 MINERAL RESOURCE CLASSIFICATION

Resources are classified as Measured, Indicated and Inferred. For a block to qualify as Measured, the average distance to the nearest two drill holes must be 20 metres or less to the block centroid and zinc must be estimated. For a block to qualify as Indicated, the average distance from the block centroid to the nearest two holes must be 40 metres or less and zinc must be estimated. For a block to qualify as Inferred, a single drill hole must occur within the boundaries of the search ellipsoid and zinc must be estimated.

### 14.12.1 ZINC EQUIVALENCY

The resource has been tabulated on the basis of zinc equivalency (ZnEq); copper, gold, silver and lead are converted to equivalent zinc grade and those equivalencies are added to the zinc grade. Average metallurgical performance at the Campo Morado mill determined the metal recoveries used. Recoveries for copper, silver, gold and lead are normalized to the zinc recovery as follows:

$$\text{ZnEq General Equation} = \text{Zn\%} + ((\text{Cu \%} * (\text{Cu recovery} / \text{Zn recovery}) * (\text{Cu \$ per \%} / \text{Zn \$ per \%})) + ((\text{Ag g/t} * (\text{Ag recovery} / \text{Zn recovery}) * (\text{Ag \$ per gram} / \text{Zn \$ per \%})) + ((\text{Au g/t} * (\text{Au recovery} / \text{Zn recovery}) * (\text{Au \$ per gram} / \text{Zn \$ per \%})) + ((\text{Pb \%} * (\text{Pb recovery} / \text{Zn recovery}) * (\text{Pb \$ per \%} / \text{Zn \$ per \%}))$$

$$\text{ZnEq} = \text{Zn\%} + ((\text{Cu \%} * (68/70) * (61.73/26.455)) + ((\text{Ag g/t} * (38/70) * (0.547/26.455)) + ((\text{Au g/t} * (25/70) * (36.97/26.455)) + ((\text{Pb \%} * (60/70) * (19.84/26.455))$$

Where:

- Au price = \$1150/oz;
- Ag price = \$17/oz;





- Cu price = \$2.80/lb;
- Pb price = \$0.90/lb;
- Zn price = \$1.20/lb;
- Au metal recovery = 25%;
- Ag metal recovery = 38%;
- Cu metal recovery = 68%;
- Pb metal recovery = 60%;
- Zn metal recovery = 70%.

### **14.13 BLOCK MODEL VALIDATION**

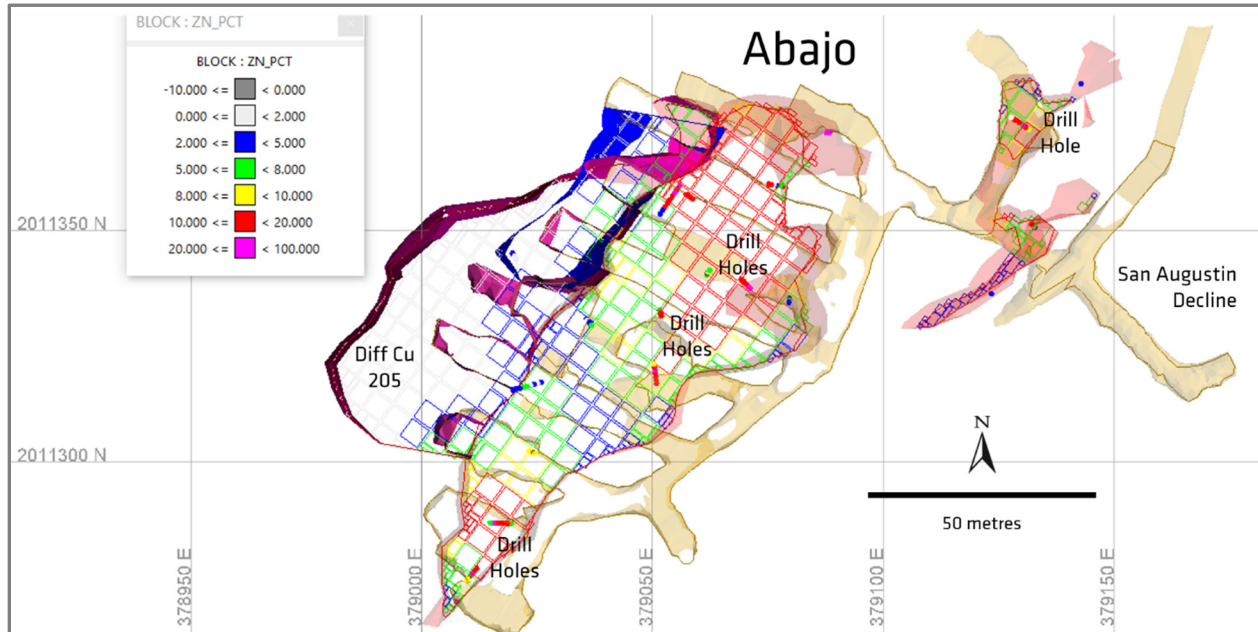
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The block models were inspected visually for correspondence between composite grades and estimated block grades. This inspection was carried out on 5 metre level plans. There is reasonably good agreement between composite grade and estimated block grades. By way of example, Figure 14-8 shows the correlation between block and composite zinc grades for level 860 of the G9 deposit area Abajo sub-zone in the G9 block model.





**Figure 14-8 Abajo Zone Underground, Block & Drill Hole Composite Grades – 860 m amsl**



#### 14.14 FACTORS THAT MAY AFFECT THE RESOURCE ESTIMATES

These mineral resource estimates may ultimately be affected by a broad range of metallurgical, mining socio-economic, environmental, marketing, political, permitting, legal and title factors.

There are a number of factors that may affect the resources. The zinc equivalent formula used to define the cut-off grade is based on metal recoveries that are largely derived from the G9 deposit. It may not be applicable to other mineralized zones. The accuracy of the 3D solids models of the mineralized bodies appears to be reasonable; however the actual boundaries are unknown and could vary considerably depending on geologic and structural conditions that may not yet have been recognized. Any significant differences in the modeled and actual zone boundaries will affect the resources. The underground excavations were mapped up to the point where the mine was shut down by Nyrstar. The completeness and accuracy of these triangulations is believed to very good, however any significant differences in the model and the actual underground excavation boundaries will affect the resource. The spatial position of blocks in the mineral resource estimate in close proximity to areas in the existing underground excavations may render them unrecoverable because they are not minable using any practical method. On October 23, 2017, Telson announced, “over the past month the Company has been mining underground and has delivered approximately 29,500 tonnes of the coarse material to the mill site crushing patio and to date has accumulated a crushed material stockpile of at least 9,000 tonnes.” The tonnage of material mined by Telson is included as resources in the 2017 estimate and has not been depleted. The 263 holes with missing assays were coded as zero grade. If assays for these holes exist, and they are found in future, this will likely positively affect the resource estimate.



Factors that may affect the Mineral Resource estimate include: changes to the geological and deposit models, recovery of missing drill hole assay information, infill drilling and underground development to convert mineral resources to a higher classification and drilling to test for extensions to known resources. Additional factors which may affect the cut-offs used to constrain the estimates are commodity prices, changes in the metallurgical processing / metallurgical recovery assumptions used to estimate zinc equivalent, updated surveys of the existing underground excavations and updating of the underground excavation models to account for material mined by Telson starting in October 2017. The assay information that appears to be missing from a number of drill holes that intersect modeled mineralized bodies was included at zero grade for these intervals for the purposes of the 2017 mineral resource estimate. Further investigated should be completed to confirm if this information has been permanently lost or still exists and can be restored from the archives of the previous Project operator Nyrstar. It should be noted that all factors pose potential risks and opportunities, of greater or lesser degree, to the current mineral resource.



**Table 14-14 Drill Holes Used In Mineral Resource Estimate**

Drill Holes										
96001	96068	97263	4338	5406	6567	7681	8783	UG090076	UG090163	UG100186
96002	96071	97264	4340	5416	6568	7684	8785	UG090077	UG090165	UG100190
96003	96074	97265	4342	5418	6570	7686	8786	UG090078	UG090166	UG100195
96004	96078	97266	4347	5420	6571	7689	UG080005	UG090079	UG090167	UG100196
96005	96083	97271	4349	5424	6572	7690	UG080006	UG090080	UG090168	UG100198
96006	96095	97273	4351	5426	6576	7691	UG080007	UG090082	UG090169	UG100201
96007	96100	97276	4352	5427	6578	7692	UG080008	UG090083	UG090170	UG100202
96008	96104	97277	4353	5431	6580	7693	UG080014	UG090084	UG090171	UG100204
96009	96112	97278	4354-D0	5433	6581	7695	UG080020-A	UG090085	UG090174	UG100206
96010	96124	97279	4354-D1	5464	7596	7699	UG080027	UG090086	UG090175	UG100207
96011	96128	97280	4354-D2	5467	7598	8707	UG080028	UG090087	UG090181	UG100208
96012	96133	97281	4355-D0	5474	7599	8709	UG080030	UG090088	UG090182	UG100209
96013	96137	97282	4355-D1	5479	7601	8711	UG080032	UG090089	10805	UG100210
96014	96145	97284	4355-D2	5481	7606	8713	UG080034	UG090090	10814	UG100211
96015	96149	97285	4356	5484	7607	8717	UG080035	UG090091	10816	UG100213
96016	96152	97286	4359	5485	7608	8719	UG080036	UG090092	10818	UG100214
96017	96155	97289	4360	5486	7611	8721	UG080037	UG090097	10842	UG100216
96018	96156	97291	4361	5496	7615	8722	UG080038	UG090098	10844	UG100217
96019	96157	97292	4363-D0	5498	7620	8727	UG080039	UG090099	10845	UG100219
96020	96158	97293	4363-D1	5503	7623	8728	UG080040	UG090100	10847	UG100222
96021	96159	97294	4363-D2	5509	7624	8729	UG080041	UG090101	10848	UG100223
96022	96160	97295	4366-D1	5510	7626	8732	UG080042	UG090107	10849	UG100224
96023	96161	97296	4366-D2	5513	7628	8735	UG080043	UG090131	10850	UG100237
96024	96162	97298	4367	6518	7632	8738	UG080044	UG090133	10851	UG100238
96025	96163	97299	4369-D0	6523	7633	8739	UG080046	UG090137	10853	UG100240
96026	96165	97300	4369-D1	6524	7634	8740	UG080047	UG090138	10854	UG100243
96027	97170	97303	4369-D2	6525	7636	8742	UG080048	UG090139	10855	UGM10-003
96028	97174	97304	4371-D0	6527	7639	8743	UG080051	UG090140	10856	UGM10-004
96029	97177	97305	4371-D1	6530	7642	8744	UG080053	UG090141	10857	UGM10-005
96030	97179	97308	4371-D2	6531	7647	8745	UG080054	UG090142	10858	UGM10-006
96031	97181	97309	4373-D0	6532	7648	8746	UG080056	UG090143	10859	UGM10-008
96032	97184	98318	4373-D1	6534	7651	8751	UG080057	UG090144	10860	UGM10-009
96033	97214	98319	5376	6535	7652	8753	9800	UG090145	10861	UGM10-010
96038	97217	98320	5377	6536	7658	8755	9801	UG090147	10862	UGM10-011
96040	97219	4321	5379-D1	6541	7661	8756	9803	UG090150	10863	UGM10-012
96044	97237	4322	5382	6544	7662	8758	UG090060	UG090151	10864	UGM10-013
96051	97244	4323	5385	6546	7664	8761	UG090061	UG090152	10866	UGM10-015
96054	97247	4325	5388-D1	6548	7667	8762	UG090062	UG090153	10868	UGM10-016
96055	97248	4327	5392	6555	7668	8763	UG090063	UG090154	10869	UGM10-017
96057	97249	4328	5393	6557	7669	8768	UG090064	UG090156	10871	UGM10-018
96058	97252	4329	5397	6559	7670	8772	UG090065	UG090157	10872	UGM10-021
96060	97256	4331	5398	6562	7671	8774	UG090066	UG090158	10874	UGM10-022
96061	97258	4332	5400	6563	7674	8776	UG090067	UG090159	10876	UGM10-023
96065	97260	4335	5402	6564	7676	8778	UG090068	UG090160	10878	UGM10-024
96066	97261	4336	5403	6565	7677	8779	UG090069	UG090161	10880	UGM10-025
96067	97262	4337	5404	6566	7679	8781	UG090072	UG090162	UG100183	UGM10-026

**Table 14-15 Drill Holes Used In Mineral Resource Estimate**

Drill Holes							
UGM10-033	UGM10-108	UGM10-201	11915	UGM11-256	UGM11-348-1	UGM11-425	UGM11-512
UGM10-034	UGM10-119	UGM10-203	11916	UGM11-257	UGM11-349	UGM11-426	UGM11-513
UGM10-035	UGM10-120	UGM10-205	11918	UGM11-258	UGM11-350	UGM11-427	UGM11-514
UGM10-036	UGM10-121	UGM10-206	11920	UGM11-259	UGM11-351	UGM11-428	UGM11-516
UGM10-037	UGM10-122	UGM10-207	11921	UGM11-260	UGM11-352	UGM11-429	UGM11-517
UGM10-039	UGM10-123	UGM10-209	11925	UGM11-262	UGM11-353	UGM11-430	UGM11-518
UGM10-040	UGM10-125	UGM10-212	11926	UGM11-263	UGM11-354	UGM11-431	UGM11-519
UGM10-041	UGM10-126	UGM10-217	11936	UGM11-265	UGM11-355	UGM11-432	UGM11-520
UGM10-042	UGM10-127	111000	11941	UGM11-267	UGM11-356	UGM11-433	UGM11-521
UGM10-043	UGM10-128	111001	11942	UGM11-270	UGM11-357	UGM11-434	UGM11-522
UGM10-044	UGM10-130	111002	11943	UGM11-271	UGM11-358	UGM11-435	UGM11-525
UGM10-045	UGM10-131	111003	11944	UGM11-272	UGM11-362	UGM11-437	UGM11-530
UGM10-046	UGM10-135	111004	11945	UGM11-273	UGM11-367	UGM11-438	UGM11-532
UGM10-049	UGM10-138	111005	11946	UGM11-274	UGM11-368	UGM11-444	UGM11-534
UGM10-050	UGM10-145	111006	11948	UGM11-275	UGM11-370	UGM11-447	UGM11-538
UGM10-054	UGM10-146	111008	11955	UGM11-276	UGM11-371	UGM11-450	UGM11-543
UGM10-055	UGM10-147	111010	11960	UGM11-278	UGM11-372	UGM11-452	UGM11-546
UGM10-056	UGM10-148	111011	11966	UGM11-280	UGM11-374	UGM11-461	UGM11-550
UGM10-057	UGM10-149	11881	11968	UGM11-282	UGM11-376	UGM11-462	UGM11-551
UGM10-058	UGM10-150	11882	11971	UGM11-283	UGM11-377	UGM11-463	UGM11-552
UGM10-064	UGM10-153	11883	11972	UGM11-285	UGM11-379	UGM11-464	UGM11-553
UGM10-065	UGM10-155	11884	11974	UGM11-286	UGM11-383	UGM11-465	UGM11-554
UGM10-066	UGM10-156	11885	11976	UGM11-288	UGM11-384	UGM11-466	UGM11-556
UGM10-067	UGM10-157	11886	11978	UGM11-289	UGM11-386	UGM11-468	UGM11-558
UGM10-068	UGM10-158	11887	11979	UGM11-290	UGM11-387	UGM11-469	UGM11-565
UGM10-069	UGM10-160	11888	11986	UGM11-291	UGM11-388	UGM11-471	UGM11-569
UGM10-070	UGM10-161	11890	11989	UGM11-295	UGM11-389	UGM11-472	UGM11-570
UGM10-071	UGM10-162	11891	11990	UGM11-299	UGM11-390	UGM11-473	UGM11-572
UGM10-072	UGM10-165	11892	11994	UGM11-301	UGM11-391	UGM11-474	UGM11-573
UGM10-073	UGM10-166	11893	11996	UGM11-306	UGM11-392	UGM11-475	UGM11-575
UGM10-074	UGM10-167	11894	11997	UGM11-310	UGM11-393	UGM11-476	UGM11-576
UGM10-075	UGM10-170	11895	11998	UGM11-312	UGM11-394	UGM11-477	UGM11-578
UGM10-076	UGM10-171	11896	11999	UGM11-313	UGM11-396	UGM11-478	UGM12-1000
UGM10-077	UGM10-172	11897	UGM11-222	UGM11-314	UGM11-401	UGM11-479	UGM12-1001
UGM10-078	UGM10-174	11898	UGM11-233	UGM11-315	UGM11-403	UGM11-485	UGM12-1005
UGM10-085	UGM10-178	11899	UGM11-235	UGM11-316	UGM11-404	UGM11-488	UGM12-1006
UGM10-087	UGM10-180	11900	UGM11-238	UGM11-324	UGM11-405	UGM11-493	UGM12-1008
UGM10-088	UGM10-181	11901	UGM11-240	UGM11-326	UGM11-409	UGM11-494	UGM12-1009
UGM10-089	UGM10-182	11902	UGM11-242	UGM11-328	UGM11-410	UGM11-496	UGM12-1010
UGM10-090	UGM10-184	11904	UGM11-243	UGM11-329	UGM11-412	UGM11-497	UGM12-1011
UGM10-091	UGM10-189	11905	UGM11-244	UGM11-340	UGM11-415	UGM11-498	UGM12-1012
UGM10-092	UGM10-190	11910	UGM11-245	UGM11-344	UGM11-416	UGM11-500	UGM12-1014
UGM10-104	UGM10-191	11911	UGM11-249	UGM11-345-1	UGM11-417	UGM11-502	UGM12-1015
UGM10-105	UGM10-192	11912	UGM11-252	UGM11-346	UGM11-419	UGM11-506	UGM12-1017
UGM10-106	UGM10-193	11913	UGM11-253	UGM11-347	UGM11-423	UGM11-508	UGM12-1018
UGM10-107	UGM10-199	11914	UGM11-255	UGM11-348	UGM11-424	UGM11-510	UGM12-1019



**Table 14-16 Drill Holes Used In Mineral Resource Estimate**

Drill Holes							
UGM12-1020	UGM12-1113	UGM12-675	UGM12-778	UGM12-849	UGM12-921	UGM12-986	UGM13-1139
UGM12-1022	UGM12-1114	UGM12-678	UGM12-779	UGM12-850	UGM12-922	UGM12-988	UGM13-1140
UGM12-1023	UGM12-1117	UGM12-680	UGM12-782	UGM12-852	UGM12-927	UGM12-989	UGM13-1141
UGM12-1024	UGM12-1118	UGM12-685	UGM12-783	UGM12-853	UGM12-929	UGM12-994	UGM13-1142
UGM12-1025	UGM12-581	UGM12-687	UGM12-784	UGM12-854	UGM12-933	UGM12-995	UGM13-1143
UGM12-1026	UGM12-582	UGM12-688	UGM12-785	UGM12-855	UGM12-934	UGM12-997	UGM13-1144
UGM12-1028	UGM12-584	UGM12-689	UGM12-786	UGM12-856	UGM12-938	UGM12-998	UGM13-1145
UGM12-1029	UGM12-586	UGM12-691	UGM12-787	UGM12-857	UGM12-939	UGM12-999	UGM13-1146
UGM12-1033	UGM12-588	UGM12-693	UGM12-788	UGM12-858	UGM12-940	SJ-130008	UGM13-1147
UGM12-1036	UGM12-589	UGM12-696	UGM12-789	UGM12-859	UGM12-941	SJ-130009	UGM13-1148
UGM12-1037	UGM12-590	UGM12-700	UGM12-791	UGM12-860	UGM12-942	SJ-130011	UGM13-1149
UGM12-1040	UGM12-592	UGM12-708	UGM12-793	UGM12-861	UGM12-943	SJ-130012	UGM13-1150
UGM12-1042	UGM12-595	UGM12-715	UGM12-794	UGM12-862	UGM12-945	SJ-130015	UGM13-1152
UGM12-1043	UGM12-596	UGM12-719	UGM12-795	UGM12-863	UGM12-946	SJ-130017	UGM13-1153
UGM12-1046	UGM12-600	UGM12-720	UGM12-797	UGM12-864	UGM12-948	SJ-130020	UGM13-1154
UGM12-1048	UGM12-604	UGM12-728	UGM12-800	UGM12-865	UGM12-950	SJ-130021	UGM13-1157
UGM12-1050	UGM12-610	UGM12-733	UGM12-801	UGM12-866	UGM12-951	SJ-130022	UGM13-1159
UGM12-1051	UGM12-615	UGM12-738	UGM12-802	UGM12-867	UGM12-952	SJ-130029	UGM13-1160
UGM12-1052	UGM12-621	UGM12-741	UGM12-804	UGM12-869	UGM12-953	SJ-130031	UGM13-1161
UGM12-1053	UGM12-629	UGM12-745	UGM12-805	UGM12-870	UGM12-955	SJR 13-0033	UGM13-1164
UGM12-1054	UGM12-630	UGM12-746	UGM12-808	UGM12-872	UGM12-957	SJR 13-0034	UGM13-1165
UGM12-1055	UGM12-631	UGM12-748	UGM12-810	UGM12-873	UGM12-958	SJR 13-0081	UGM13-1166
UGM12-1058	UGM12-632	UGM12-749	UGM12-811	UGM12-874	UGM12-959	SJR 14-0082	UGM13-1167
UGM12-1060	UGM12-633	UGM12-750	UGM12-812	UGM12-875	UGM12-960	SJR 14-0083	UGM13-1168
UGM12-1064	UGM12-634	UGM12-751	UGM12-813	UGM12-876	UGM12-961	SJR 14-0084	UGM13-1169
UGM12-1065	UGM12-635	UGM12-752	UGM12-815	UGM12-877	UGM12-962	SJR 14-0085	UGM13-1171
UGM12-1066	UGM12-636	UGM12-753	UGM12-816	UGM12-878	UGM12-963	SJR13-0070	UGM13-1172
UGM12-1067	UGM12-637	UGM12-754	UGM12-819	UGM12-879	UGM12-964	SJR13-0071	UGM13-1173
UGM12-1069	UGM12-638	UGM12-755	UGM12-820	UGM12-881	UGM12-965	SJR13-0072	UGM13-1174
UGM12-1071	UGM12-640	UGM12-756	UGM12-821	UGM12-882	UGM12-966	SJR13-0079	UGM13-1175
UGM12-1074	UGM12-641	UGM12-757	UGM12-822	UGM12-884	UGM12-967	SJR13-0080	UGM13-1177
UGM12-1076	UGM12-642	UGM12-759	UGM12-823	UGM12-885	UGM12-968	UGM13-1119	UGM13-1178
UGM12-1077	UGM12-643	UGM12-760	UGM12-824	UGM12-886	UGM12-969	UGM13-1121	UGM13-1179
UGM12-1078	UGM12-646	UGM12-761	UGM12-825	UGM12-887	UGM12-970	UGM13-1122	UGM13-1180
UGM12-1080	UGM12-647	UGM12-762	UGM12-826	UGM12-888	UGM12-971	UGM13-1123	UGM13-1181
UGM12-1081	UGM12-653	UGM12-763	UGM12-827	UGM12-890	UGM12-972	UGM13-1124	UGM13-1182
UGM12-1082	UGM12-657	UGM12-764	UGM12-830	UGM12-891	UGM12-973	UGM13-1125	UGM13-1184
UGM12-1083	UGM12-658	UGM12-765	UGM12-833	UGM12-892	UGM12-974	UGM13-1126	UGM13-1185
UGM12-1086	UGM12-659	UGM12-767	UGM12-835	UGM12-894	UGM12-975	UGM13-1127	UGM13-1186
UGM12-1089	UGM12-661	UGM12-768	UGM12-837	UGM12-897	UGM12-976	UGM13-1128	UGM13-1187
UGM12-1090	UGM12-663	UGM12-772	UGM12-840	UGM12-899	UGM12-977	UGM13-1130	UGM13-1188
UGM12-1094	UGM12-664	UGM12-773	UGM12-843	UGM12-903	UGM12-979	UGM13-1131	UGM13-1190
UGM12-1095	UGM12-667	UGM12-774	UGM12-844	UGM12-906	UGM12-980	UGM13-1132	UGM13-1191
UGM12-1097	UGM12-668	UGM12-775	UGM12-846	UGM12-909	UGM12-982	UGM13-1135	UGM13-1192
UGM12-1104	UGM12-669	UGM12-776	UGM12-847	UGM12-911	UGM12-984	UGM13-1137	UGM13-1193
UGM12-1110	UGM12-674	UGM12-777	UGM12-848	UGM12-919	UGM12-985	UGM13-1138	UGM13-1195



**Table 14-17 Drill Holes Used In Mineral Resource Estimate**

Drill Holes						
UGM13-1196	UGM13-1288	UGM13-1384	EO14-08	UG14-1511	UG14-1571	UG14-1634
UGM13-1198	UGM13-1289	UGM13-1385	EO14-10	UG14-1512	UG14-1572	UG14-1635
UGM13-1199	UGM13-1290	UGM13-1393	EO14-13	UG14-1514	UG14-1577	UG14-1636
UGM13-1201	UGM13-1292	UGM13-1394	N14-18	UG14-1515	UG14-1580	UG14-1637
UGM13-1203	UGM13-1293	UGM13-1403	N14-24	UG14-1516	UG14-1583	UG14-1638
UGM13-1205	UGM13-1294	UGM13-1405	N14-25	UG14-1517	UG14-1584	UG14-1640
UGM13-1206	UGM13-1295	UGM13-1415	N14-26	UG14-1519	UG14-1585	UG14-1641
UGM13-1207	UGM13-1296	UGM13-1417	N14-27	UG14-1520	UG14-1588	UG14-1643
UGM13-1208	UGM13-1299	UGM13-1418	N14-28	UG14-1521	UG14-1589	UG14-1645
UGM13-1212	UGM13-1301	UGM13-1419	N14-31	UG14-1522	UG14-1590	UG14-1647
UGM13-1213	UGM13-1303	UGM13-1420	N14-32	UG14-1523	UG14-1591	UG14-1648
UGM13-1215	UGM13-1305	UGM13-1422	N14-33	UG14-1524	UG14-1592	UG14-1649
UGM13-1216	UGM13-1309	UGM13-1423	N14-34	UG14-1525	UG14-1593	UG14-1650
UGM13-1217	UGM13-1311	UGM13-1424	N14-35	UG14-1526	UG14-1594	UG14-1651
UGM13-1218	UGM13-1312	UGM13-1425	N14-41	UG14-1527	UG14-1595	UG14-1653
UGM13-1219	UGM13-1315	UGM13-1426	N14-43	UG14-1528	UG14-1596	UG14-1654
UGM13-1220	UGM13-1318	UGM13-1427	N14-45	UG14-1529	UG14-1599	UG14-1655
UGM13-1224	UGM13-1319	UGM13-1428	N14-46	UG14-1530	UG14-1602	UG14-1658
UGM13-1225	UGM13-1320	UGM13-1430	UG14-1472	UG14-1531	UG14-1604	UG14-1662
UGM13-1228	UGM13-1321	UGM13-1431	UG14-1473	UG14-1532	UG14-1605	UG14-1666
UGM13-1231	UGM13-1322	UGM13-1432	UG14-1474	UG14-1533	UG14-1606	UG14-1671
UGM13-1232	UGM13-1323	UGM13-1433	UG14-1478	UG14-1536	UG14-1607	UG14-1677
UGM13-1233	UGM13-1324	UGM13-1434	UG14-1481	UG14-1537	UG14-1609	UG14-1678
UGM13-1234	UGM13-1326	UGM13-1436	UG14-1482	UG14-1538	UG14-1610	
UGM13-1236	UGM13-1328	UGM13-1441	UG14-1484	UG14-1540	UG14-1612	
UGM13-1239	UGM13-1345	UGM13-1444	UG14-1485	UG14-1541	UG14-1613	
UGM13-1240	UGM13-1347	UGM13-1451	UG14-1486	UG14-1542	UG14-1614	
UGM13-1241	UGM13-1355	UGM13-1454	UG14-1487	UG14-1545	UG14-1615	
UGM13-1244	UGM13-1356	UGM13-1455	UG14-1490	UG14-1546	UG14-1616	
UGM13-1246	UGM13-1360	UGM13-1456	UG14-1492	UG14-1547	UG14-1617	
UGM13-1247	UGM13-1361	UGM13-1457	UG14-1493	UG14-1548	UG14-1618	
UGM13-1249	UGM13-1362	UGM13-1458	UG14-1494	UG14-1549	UG14-1619	
UGM13-1252	UGM13-1363	UGM13-1459	UG14-1495	UG14-1551	UG14-1620	
UGM13-1254	UGM13-1364	UGM13-1460	UG14-1496	UG14-1553	UG14-1621	
UGM13-1255	UGM13-1365	UGM13-1461	UG14-1497	UG14-1554	UG14-1622	
UGM13-1257	UGM13-1367	UGM13-1462	UG14-1499	UG14-1555	UG14-1623	
UGM13-1271	UGM13-1369	UGM13-1463	UG14-1500	UG14-1556	UG14-1624	
UGM13-1274	UGM13-1370	UGM13-1464	UG14-1501	UG14-1557	UG14-1625	
UGM13-1275	UGM13-1371	UGM13-1465	UG14-1502	UG14-1558	UG14-1626	
UGM13-1276	UGM13-1373	UGM13-1466	UG14-1504	UG14-1559	UG14-1627	
UGM13-1278	UGM13-1374	UGM13-1467	UG14-1505	UG14-1560	UG14-1628	
UGM13-1279	UGM13-1376	UGM13-1468	UG14-1506	UG14-1561	UG14-1629	
UGM13-1282	UGM13-1377	UGM13-1469	UG14-1507	UG14-1562	UG14-1630	
UGM13-1283	UGM13-1379	UGM13-1470	UG14-1508	UG14-1563	UG14-1631	
UGM13-1286	UGM13-1380	UGM13-1471	UG14-1509	UG14-1564	UG14-1632	
UGM13-1287	UGM13-1381	EO14-04	UG14-1510	UG14-1566	UG14-1633	



## **15.0 MINERAL RESERVE ESTIMATE**

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This section is not relevant to this report.

## **16.0 MINING METHODS**

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### **16.1 OVERVIEW**

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A mine plan at a PEA level has been developed for the Campo Morado mine during the reopening ramp-up phase of Project by Telson. The mine plan is partly based upon inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA based on these mineral resources will be realized. Calendar years used in the mine plan are for illustrative purposes only.

The PEA is based on the mill feed being sourced from the operating underground Campo Morado mine. Access to the underground mining areas is via a number of portals that access the various ramps and haulage ways that have been driven into the different mineralized zones. At the present time, the El Largo and G9 deposits or zones have been accessed by both the previous operators Nyrstar and Farallon and by Telson. The El Largo deposit is currently the focus of Telson's development mining.

A subset of the resources estimated in Section 14 is used in the mine plan.

Campo Morado production between 2008 and 2014 by the previous operators and Telson's fourth quarter 2017 and first two months 2018 is summarized in Tables 16-1 and 16-2.



**Table 16-1 Summary of Previous Production from 2008 to 2014 and, Telson 2017 Fourth Quarter and First Two Months 2018 (Feed Grade and Recoveries)**

Year	Tonnes Milled	Feed Grade						Content						Zn Concentrate Recovery	Cu Concentrate recovery			Pb Concentrate recovery
		Zn %	Cu %	Pb %	Fe %	Au g/t	Ag g/t	Zn t	Cu t	Pb t	Fe t	Au kg	Ag kg	Zn %	Cu %		Pb %	
2014	657,124	4.58	0.90	0.97	25.94	1.21	115.74	30,070.4	5,918.1	6,348.3	170,474.2	794.0	76,052.4	74.3	66.2		1.6	
2013	565,718	5.81	1.21	0.91	23.34	1.92	142.01	32,849.9	6,870.6	5,129.9	132,052.6	1,088.3	80,338.3	76.1	71.0		This year no attempt was made to separate the lead	
2012	732,718	6.93	1.17	1.06	20.61	2.01	150.04	50,778.8	8,589.6	7,778.1	150,982.0	1,475.8	109,939.2	79.2	64.7		1.3	
2011	698,831	7.83	1.06	1.05	17.01	2.11	144.38	54,733	7,407	7,362	118,871	1,476	100,898	83.9	69.5		1.0	
2010	610,804	8.35	0.98	1.00	18.78	2.29	161.77	51,019	5,969	6,136	114,709	1,396	98,812	82.7	67.4		This year no attempt was made to separate the lead	
2009	480,529	10.01	1.32	1.06	18.95	2.55	179.31	48,107	6,361	5,076	91,060	1,226	86,164	78.7%	50.6		8.3	
2008	105,924	8.26	1.02	1.16		2.76	214.69	8,749	1,082	1,227		292	22,741	73.7%	The plant is not operated to produce a copper concentrate for the majority of the year		22.3	
<b>Total 2008 to 2014</b>	<b>3,851,648</b>	<b>7.17</b>	<b>1.10</b>	<b>1.01</b>	<b>20.20</b>	<b>2.01</b>	<b>149.27</b>	<b>276,308</b>	<b>42,198</b>	<b>39,057</b>	<b>778,149</b>	<b>7,749</b>	<b>574,946</b>	<b>79.6%</b>	<b>64.1</b>		<b>2.5</b>	
2017 4 <sup>th</sup> Quarter	106,655	3.57	0.38	0.85	32.23	0.83	103	3,802.7	401.3	906.9	34,378.3	88.7	10,985.4	58.9	The plant is not operated to produce a copper concentrate		28.6	
January, 2018	48,976.5	3.63	0.41	0.83	31.3	0.90	107	1,776.77	202.71	407.70	15,335.1	43.93	5,260.12	65.9	The plant is not operated to produce a copper concentrate		25.4	
February, 2018	47,848	3.20	0.42	0.83	31.63	0.0	100.2	1,532.0	199.74	396.68	15,132.42	0.0	4,794.52	66.6	3.0		25.3	

Source: Nyrstar Annual Production Reports and Telson Production Data

**Table 16-2 Summary of Previous Production from 2008 to 2014 and, Telson 2017 Fourth Quarter and First Two Months 2018 (Concentrate Tonnage and Grade)**

Year	Zn Concentrate Grade							Cu Concentrate Grade							Pb Concentrate Grade						
	Tonnes	Zn %	Cu %	Pb %	Fe %	Au g/t	Ag g/t	Tonnes	Zn %	Cu %	Pb %	Fe %	Au g/t	Ag g/t	Tonnes	Zn %	Cu %	Pb %	Fe %	Au g/t	Ag g/t
2014	47,883	46.67	0.82	1.29	12.25	0.97	213	29,328	5.10	13.35	7.83	29.77	4.46	609	1,200	5.73	3.88	8.32	33.83	1.68	500
2013	53,502	46.75	1.06	0.90	11.47	1.84	237	34,658	6.35	14.07	6.78	29.39	7.68	675	This year no attempt was made to separate the lead						
2012	84,055	47.85	1.14	1.17	10.60	2.09	253	40,208	6.97	13.83	9.84	27.46	7.60	784	882	9.57	9.44	11.65	25.30	10.17	1,036
2011	94,972	48.36	1.08	1.18	9.99	2.65	259	38,673	7.63	13.32	10.44	26.70	7.18	840	341	6.88	6.83	22.20		9.25	1082
2010	88,377	47.7	0.9	1.1	10.32	2.4	267	31,090	7.5	12.9	9.8	26.28	10.8	962							
2009	75,148	50.4	1.3	1.2	7.19	1.9	253	20,572	7.9	15.7	7.5	25.3	10.8	718.5	2,014	12.4	8.3	20.9	23.17	45.3	1,654
2008	13,362	48.2	1.4	1.6		2.5	274	1,943	9.5	15.9	6.4		8.97	597.0	2,006	10.4	7.2	13.7		16.9	650
<b>Total 2008 to 2014</b>	<b>457,299</b>	<b>48.1</b>	<b>1.1</b>	<b>1.2</b>	<b>9.8</b>	<b>2.1</b>	<b>251.6</b>	<b>196,471</b>	<b>6.9</b>	<b>13.8</b>	<b>8.8</b>	<b>27.3</b>	<b>7.9</b>	<b>768.9</b>	<b>6,444</b>	<b>9.8</b>	<b>7.2</b>	<b>15.1</b>	<b>17.0</b>	<b>21.6</b>	<b>1,011.5</b>
2017 4 <sup>th</sup> Quarter	5,022	44.09	1.18	1.67	13.11	1.04	502	The plant is not operated to produce a copper concentrate							2,013	6.44	2.55	12.86	29.46	4.21	500
January, 2018	2,537	46.16	1.40	1.65	11.9	1.69	442	The plant is not operated to produce a copper concentrate							502	8.10	1.77	20.65	25.3	6.51	528
February, 2018	2,292	44.50	1.54	1.75	13.11	0.0	437.81	56.75	6.31	10.68	9.41	30.59	0.0	1,897.92	371.21	6.89	3.08	26.99	22.63	0.0	688.32

Source: Nyrstar Annual Production Reports and Telson Production Data



## 16.2 HISTORICAL METHOD

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Previous operators of the Campo Morado mine used an underhand bench, open stoping method that was mostly employed at the G-9 mine, with eight to 15 m wide stopes developed by means of slashed, five metre high, fully supported top drives that extend to the planned limited of individual stopes. The stope spans reflected the prevailing ground conditions, with the larger spans used in good quality ground characterized by mostly undisturbed felsic country rocks or thickly developed massive sulphide material. Horizontal or vertical, underhand bench lifts are taken once a slashed top drive is complete, to the planned, ultimate footwall elevation of each stope. Where appropriate, primary stopes were backfilled with 500 psi / 3.45 MPa CRF backfill, following which similarly dimensioned, intervening secondary stopes are extracted and then infilled with uncemented rockfill.

Panel and rib pillar layouts or formal room and pillar layouts, with second pass footwall bench lifts as appropriate, were used where the use of CRF backfill, hence the extraction of secondaries, were not viable options due to the presence of overlying mineralized zones, such as in the Abajo Zone and portions of the North Zone.

## 16.3 CURRENT METHOD

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As a part of its ongoing work to bring the mine back into production, Telson is in the process of changing the mining method to that of sub-level caving. Telson plans to utilize this bulk mining method for extraction of the ore in the various deposits due the shape of the orebodies and the potential to lower the mining costs. This method is normally used in massive, steeply-dipping orebodies with considerable strike length, and usually has a high amount of dilution and low recoveries which will be fully investigated in the Pre-Feasibility Study

The various sub-zones within the Campo Morado mine will be accessed via adits and internal ramps. A number of cross cuts will be developed within the deposit to access ore on the various levels to establish the caving method.

Sublevel Caving is one of the most advanced mining methods. Mining starts at the top of the orebody and develops downwards. Ore is mined from sublevels spaced at regular intervals throughout the deposit. A series of ring patterns is drilled and blasted from each sublevel, and broken ore is mucked out after each blast. Sublevel Caving can be used in orebodies with very different properties and is an easy method to mechanize.

Ore will be extracted from each level using drilling jumbos and scooptrams. Broken material from North Zone stopes is loaded directly into haulage trucks for transport up the decline or ventilation ramp to the portal and from the portal to the coarse material stockpile ahead of the primary crusher located at the processing plant site (Figure 20.8). Broken material from Southeast Zone stopes is loaded onto trucks for transport to the top of a 3.0 metre diameter ore pass that has a dog-leg and chute arrangement for loading trucks that haul the muck directly to surface, up the San Agustín decline. Broken material from Abajo Zone deposit will be loaded directly into haulage trucks for transport to surface.

## 16.4 VENTILATION

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Ventilation is provided by drawing fresh air into the mine through the San Agustin decline. Ventilation fans currently provide forced ventilation; air is distributed, as required, by means of ventilation raises, auxiliary fans, ducts, regulators and bulkheads. Contaminated air is routed to the ventilation ramp from where it is exhausted at ventilation ramp's portal. Contaminated air is forced from the mine using four, 200 horsepower ventilation fans that are installed in a ventilation bulkhead located in the ventilation by-pass, near the ventilation ramp portal.

The total ventilation requirement was estimated by previous operators at 145 m<sup>3</sup>/s, based on a VnetPC analysis of a snapshot of the planned mining operations with both the Southeast and North Zones in full production. Now that Telson is re-opening the mine, it will need to periodically undertake reviews of, and upgrades to, the ventilation plan, as stoping advances and/or changes to development strategies are made. Key elements of current and future ventilation planning should be flexible, thereby allowing upgrades to be made as required.

## 16.5 HYDROGEOLOGY

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The mine is, essentially dry with minor water intakes (drips and trickles) only sometimes experienced along fault zones.

Water is pumped from surface for use underground and then pumped back to surface along with any groundwater make, in a semi-continuous loop. Sump and pumping facilities are installed at the lowest point (939 metres elevation) in the ventilation ramp (i.e. at Crosscut #5). The bottom of the San Agustin decline serves as the main sump. Provision has been made to handle 545 litres per minute of water in the system, using two dirty water settling pumps and one clean water main pump. The previous operators built flexibility into the system such that it can be expanded, as required.

## 16.6 DRILLING AND BLASTING

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Either the Tamrock or the Sandvik twin boom jumbos are used to drill the development rounds. The development holes are approximately 45 mm in diameter and are charged with a small diameter cartridge emulsion explosives as a primer and the remaining of the hole with blow loaded ANFO. Wet and lifter holes are charged with emulsion cartridges. The initiation and timing of the development faces are by non-electric long period delay detonators, detonating cord and electric detonator that is connected to the mains firing system.

A combination of the jumbos and the Sandvik solo are used in the stopes depending on the stoping method. The Solo drill holes are approximately 102 mm in diameter are charged using a cast booster as a primer and ANFO. The initiation is by non-electric millisecond delay detonators, detonating cord and electric detonator that is connected to the mains firing system. The jumbo holes used in the stopes are charged similar to the development rounds.

## 16.7 LOADING AND HAULING

Mill feed is mucked from the stopes and development using the scooptrams, loaded into the EJC articulated underground dump trucks, hauled and tipped into the main underground hopper where it has to pass through a grizzly. Oversize rocks are broken up by a hydraulic hammer located adjacent to the grizzly. The mill feed passing through the grizzly drops into a hopper, which is used to load the Kenworth rigid body trucks that haul mill feed to the surface and to the plant.

The same scooptrams and articulated dump truck are used to mine the waste but waste is either hauled directly to surface or tipped into an old stope.

## 16.8 PERSONNEL AND MINING EQUIPMENT

All mining activities are being carried out by personnel hired by Telson. Telson has acquired the appropriate principal and auxiliary mining equipment required to produce the tonnage in accordance with the mining plan. Table 16-3 is summary of Telson’s mining, civil engineering and processing plant rolling stock equipment currently in place.

Telson also provides contract supervision, geology, engineering and planning and survey services, using its own employees.

**Table 16-3 Telson’s Mining Civil Engineering and Processing Plant Rolling Stock Equipment**

Area	Equipment	Make	Model Number
Mine	Twin Boom Jumbo	Tamrock	Axera 6 - 226 XLS
	Twin Boom Jumbo	Sandvik	DD320 - 26
	Twin Boom Jumbo	Sandvik	DD 321- 40
	Solo Drill Rig	Sandvik	DL 421-7C
	Scoop Tram	Sandvik	LH 514
	Scoop Tram	Sandvik	LH 514
	Scoop Tram	Sandvik	LH 514
	Scoop Tram	Caterpillar	R1600
	30 Ton UG Truck	Tamrock	EJC430D
	30 Ton UG Truck	Tamrock	EJC430D
	30 Ton UG Truck	Tamrock	EJC430D
	Dump Truck	Kenworth	T-800
	Dump Truck	Kenworth	T-800
	Dump Truck	Kenworth	T-800
	Dump Truck	Kenworth	T-800

	Tractor	Kubota	M7040D
	Tractor	Kubota	M7040D
	Tractor	Kubota	M7040D
	Scissor Lift	RDH	LiftMaster-600R
	Scissor Lift	RDH	LiftMaster-600R
	ANFO Loader	RDH	RDH
	Air Compressor	Atlas Copco	GA 110
	Air Compressor	Sullair	LS25S - 300L/A
	Rock breaker	BTI	NT16-BT2000ED
	Power Screen	Chieftain	1400
Civil Engineering and Processing Plant	Track-Type-Tractor	Caterpillar	D6R
	Track-Type-Tractor	Caterpillar	D8R
	Telehandler	Caterpillar	TH103
	Wheel Loader	Caterpillar	950H
	Wheel Loader	Caterpillar	950L
	Backhoe	Caterpillar	416D
	Motor Grader	Caterpillar	140H
	Rough Terrain Crane	Grove	RT750
	Boom Truck	Manitex	1770C
	PRO PAC (Vibro-compactor)	Ingersoll-Rand	T1028
	Lift truck	Clark	C50L

Note: Information supplied by Telson

## 16.9 LIFE OF MINE ANNUAL PRODUCTION SCHEDULE

Table 16-4 shows the annual life of mine production schedule.



**Table 16-4 LOM Annual Production Schedule**

Function	Period	Yr-2	Yr-1	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12	LOM TOTAL	
Mining	Production - Total	kt	0	0	720	900	900	900	900	900	900	900	900	900	18	9,738	
	Zinc Grade	%			5.2	5.2	5.2	5.2	5.0	5.0	4.7	3.3	2.8	2.8	3.4	3.3	4.3
	Lead Grade	%			1.1	1.1	1.1	1.0	0.4	0.4	0.4	0.8	0.9	0.9	0.7	0.5	0.8
	Copper Grade	%			1.1	1.1	1.1	1.0	0.4	0.4	0.4	0.8	0.9	0.9	0.7	0.5	0.8
	Silver Grade	g/t			131.4	131.4	131.4	128.8	109.8	109.8	112.1	133.0	165.6	165.6	132.9	99.0	131.9
	Gold Grade	g/t			1.8	1.8	1.8	1.7	1.0	1.0	1.0	1.7	2.6	2.6	2.0	2.3	1.7
	Zinc Content	kt	0	0	37.7	47.1	47.1	46.8	44.6	44.6	42.1	29.9	25.3	25.3	30.4	0.6	421.6
	Lead Content	kt	0	0	6.2	7.8	7.8	8.1	10.1	10.1	9.7	8.4	10.0	10.0	9.3	0.2	97.6
	Copper Content	kt	0	0	7.6	9.5	9.5	8.8	3.5	3.5	4.0	6.9	8.3	8.3	5.9	0.1	75.6
	Silver Content	koz	0	0	3,041.7	3,802.1	3,802.1	3,726.5	3,177.1	3,177.1	3,243.9	3,848.0	4,791.7	4,791.7	3,846.8	57.3	41,306.2
	Gold Content	oz	0	0	41.7	52.1	52.1	49.2	27.9	27.9	30.0	47.9	74.2	74.2	56.5	1.3	534.8
	<b>Metal in conc.</b>																
Zinc	kt			26.4	33.0	33.0	32.8	31.2	31.2	29.5	20.9	17.7	17.7	21.3	0.4	295.2	
Lead	kt			2.2	2.7	2.7	2.8	3.5	3.5	3.4	3.1	3.5	3.5	3.2	0.1	34.2	
Copper	kt			1.0	1.2	1.2	1.1	0.4	0.4	0.5	0.9	1.1	1.1	0.7	0.1	9.7	
Silver	koz			1,307.9	1,634.9	1,634.9	1,602.4	1,366.2	1,366.2	1,394.9	1,654.6	2,060.5	2,060.5	1,654.1	24.6	17,761.7	
Gold	koz			10.0	12.5	12.5	11.8	6.7	6.7	7.2	11.4	17.8	17.8	13.6	0.3	128.3	
<b>Payable Metal</b>																	
Zinc	kt			21.6	27.1	27.0	26.8	25.5	25.5	24.2	17.1	14.5	14.5	17.4	0.3	241.6	
Lead	kt			1.9	2.4	2.4	2.5	3.1	3.1	3.0	2.5	3.1	3.1	2.9	0.1	30.1	
Copper	kt			0.5	0.6	0.6	0.5	0.0	0.0	0.0	0.3	0.3	0.4	0.1	0.0	3.4	
Silver	koz			964.7	1,205.9	1,205.9	1,179.8	990.5	990.5	1,022.4	1,279.9	1,633.3	1,633.3	1,277.7	18.6	13,402.5	
Gold	koz			6.6	8.3	8.3	7.7	4.0	4.0	4.4	8.4	14.1	14.1	10.1	0.2	90.2	
<b>Payable Metal Value</b>																	
Zinc	USD'000			63,849.31	79,811.64	79,811.64	79,280.66	75,423.37	75,423.37	71,332.82	50,584.40	42,922.75	42,922.75	51,479.60	1,006.56	713,848.86	
Lead	USD'000			4,495.72	5,619.65	5,619.65	5,825.06	7,317.25	7,317.25	7,028.01	6,095.27	7,200.17	7,200.17	6,687.61	120.59	70,526.39	
Copper	USD'000			3,188.80	3,985.99	3,985.99	3,314.06	0.00	0.00	0.00	1,711.30	2,146.53	2,146.53	605.24	0.00	21,084.44	
Silver	USD'000			16,477.34	20,596.67	20,596.67	20,151.46	16,917.22	16,917.22	17,463.35	21,860.41	27,896.97	27,896.97	21,823.13	316.96	228,914.37	
Gold	USD'000			8,433.12	10,541.40	10,541.40	9,789.22	5,079.39	5,079.39	5,528.01	10,604.06	17,866.15	17,866.15	12,839.02	303.26	114,470.57	
<b>Total</b>	<b>USD'000</b>			<b>96,444.28</b>	<b>120,555.35</b>	<b>120,555.35</b>	<b>118,360.45</b>	<b>104,737.23</b>	<b>104,737.23</b>	<b>101,352.19</b>	<b>90,855.44</b>	<b>98,032.57</b>	<b>98,032.57</b>	<b>93,434.60</b>	<b>1,747.36</b>	<b>1,148,844.62</b>	
<b>Selling costs</b>																	
Conc Transport	USD'000			3,687.40	4,609.24	4,609.24	4,603.87	4,564.80	4,564.80	4,328.44	3,185.20	2,913.99	2,913.99	3,292.03	63.31	43,336.30	
Treatment charge	USD'000			8,340.21	10,425.27	10,425.27	10,434.46	10,501.21	10,501.21	9,966.50	7,427.14	6,958.33	6,958.33	7,715.32	147.56	99,800.80	
Penalties	USD'000			5,450.66	6,813.32	6,813.32	6,780.22	6,539.77	6,539.77	6,190.51	4,445.87	3,874.64	3,874.64	4,548.95	88.43	61,960.10	
Refining Charge - zinc	USD'000			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Refining Charge - lead	USD'000			449.57	561.96	561.96	582.51	731.72	731.72	702.80	609.53	720.02	720.02	668.76	12.06	7,052.64	
Refining Charge - copper	USD'000			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Refining Charge - silver	USD'000			1,111.68	1,389.60	1,389.60	1,361.33	1,156.01	1,156.01	1,183.64	1,424.18	1,785.34	1,785.34	1,423.21	21.05	15,186.98	
Refining Charge - gold	USD'000			128.23	160.29	160.29	150.64	80.05	80.05	87.12	150.93	239.62	239.62	179.35	4.16	1,660.36	
<b>Total</b>				<b>19,167.74</b>	<b>23,959.68</b>	<b>23,959.68</b>	<b>23,913.02</b>	<b>23,573.57</b>	<b>23,573.57</b>	<b>22,459.01</b>	<b>17,242.85</b>	<b>16,491.93</b>	<b>16,491.93</b>	<b>17,827.62</b>	<b>336.58</b>	<b>228,997.19</b>	
NSR value of concentrates	USD'000			77,276.54	96,595.67	96,595.67	94,447.43	81,163.66	81,163.66	78,893.18	73,612.59	81,540.65	81,540.65	75,606.98	1,410.78	919,847.44	



## 17.0 RECOVERY METHODS

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### 17.1 PROCESS FLOW SHEET

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The process plant was originally designed by Farallon to treat an average of 1,500 t/d of ore to produce selective copper, lead and zinc concentrates. However, the facility was upgraded, by Farallon/Nyrstar to treat an average of 2,200 t/d. The flowsheet included the principal unit processes of primary crushing, autogenous primary grinding, secondary grinding in a VTM, rougher and cleaner flotation, re-grinding in SMDs, concentrate thickening and pressure filtration.

The plant design is based on commercially-proven technologies and uses conventional reagent protocols. In the interests of minimizing the amount of iron in solution (because grinding in an inert environment appears to enhance metallurgical response), the grinding media in the VTM and the regrind SMDS are high-alloy steel balls and ceramic beads, respectively.

Figure 17-1 provides a schematic representation of the designed process flow.

Current throughput is ramping up to 2,000 tpd during the first quarter of 2018 and subsequently increasing to the plant capacity of approximately 2,200 tpd once mine development work on the El Largo Zone is complete, allowing sublevel caving mining operations to commence (anticipated in March 2018).

Furthermore, Telson is targeting an ultimate processing capacity of 2,500 tpd, although previous studies have indicated this would require additional grinding capacity to achieve the required finer grind for the more refractory EL Largo ore. It is noted that two new SMD mills are available on site (as part of a previous plant expansion that was not completed). When previously processing G-9 ore at 2,200 tpd, although the higher-than-design throughput resulted in a coarser grind, the metallurgy was not significantly affected. Therefore, as Telson ramps up throughput, the metallurgy will have to be closely monitored to determine whether additional grinding capacity is required and, if so, the costs for this will have to be allocated accordingly.

After primary jaw crushing to minus 5 inches, ore is fed to the single SAG mill (9' x 22', 1,500 kW motor) operating in closed circuit with cyclones. Throughput and power is increased by adding 5" diameter steel grinding balls. The Bond Work Index is reported to be 14 kWh/t. Cyclone overflow is then passed to a Vertimill (VTM) with a 746 kW motor, also operating in closed circuit with cyclones, to achieve a target grind size of 80% passing 38 microns. High chrome ¾" steel grinding media is used in the VTM.

A carbon pre-float circuit (two tank cells) is utilised to remove carbonaceous material ahead of lead rougher flotation, which is pumped directly to the tailings dam. In addition, one of the lead scavenger cells is also used for this duty. This circuit was not required with the G-9 material previously. MIBC frother and SMBS (sodium metabisulphite) are used to

float the carbon and depress the sulphides. The carbon reportedly contains about 2 g/t Au and can be considered pre-robbed for gold.

The ground slurry at 30% solids w/w passes to the lead roughing circuit, where flotation is conducted at the natural pH of about 6.5 – 7.0, i.e. very slightly acidic and with no conditioning. Aerophine 3418A collector with MIBC frother is used in the lead roughing and scavenging stages. Although a regrind option with an SMD (Stirred Media Detritor) is available to regrind the bulk lead rougher concentrate, it is not currently used. The reported reason is that, with finer grinding, more carbon is liberated and also silver recovery begins to drop.

Five stages of lead cleaning are available, although reportedly only three to four stages are currently in use and operated in open circuit, rather than closed circuit. Aerophine 3418A is again used as the collector and the pH is progressively increased to about 8.5 – 9.0 to depress pyrite. Lead concentrate from the final cleaning stage reports to a thickener (actually two thickeners are used, including the original copper thickener) and filtration is conducted in a conventional filter plate press.

Lead rougher/scavenger tailings report to the zinc circuit, where the slurry is conditioned with copper sulphate to activate the zinc and again flotation is conducted at natural pH. Lime can be added for pH control if required. SIPX is used as the zinc collector, added to the roughing circuit at two points. In this case, the bulk zinc concentrate is regrind in an SMD, using ceramic 3mm beads with a 500 HP motor, to 100% passing 20 microns.

Four stages of zinc cleaning are employed, and the pH is again progressively raised to 8.5 – 9.0 to depress pyrite. Dextrin is added to the fourth cleaner stage to assist in depressing pyrite and to act additionally as a dispersant. The zinc circuit also operates in open circuit but can easily be closed if required. Zinc rougher/scavenger tailings reports as final tails to a tailings thickener and then pumped to the dedicated tailings dam. The final zinc concentrate is thickened in a single but larger thickener and then filtered in a conventional filter plate press.

Both lead and zinc concentrates drop to the concentrate shed below, where additional air-drying occurs (assisted by the exothermic reaction from pyrite) and eventually trucked to the smelter. A weighbridge is provided in the shed for weighing each truckload of concentrate.

Overall plant availability was reported to be 93% and process operating costs estimated as \$25 – 30/t.









The process plant is relatively complex, given the original design requirement to produce three selective concentrates. Topographic constraints dictated that a compact plant be built. A roof and metal clad walls was installed over the flotation, filtration, load-out and reagent handling areas. An office complex, located between the grinding and flotation sections, includes the control room, offices for operating and maintenance staff, a lunchroom, washrooms and instrument repair shop facilities. The office complex is situated above one of the principal motor control centres. Other office facilities are provided in the plant office, dry and assay laboratory complex.

The truck maintenance shop, is located along the haul road between the mine and the mill, is used to service both mobile plant equipment and underground mining equipment with another shop located just outside the portal to conduct minor maintenance. A 430 m<sup>2</sup> warehouse building is located immediately to the east of the concentrate load-out facility; the warehouse is used primarily to service the processing plant as well as the mine.

## 17.2 WATER TREATMENT PLANT

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The water treatment plant comprises five unit processes: cyanide destruction; heavy metal precipitation; sludge removal; water clarification; and water conditioning. A selective lead concentrate has not been produced since July 2009, with the result that cyanide destruction was not subsequently required (cyanide used to depress copper in copper-lead separation). When in use, cyanide destruction is achieved in a single alkaline oxidation reactor to which sodium hypochlorite and caustic soda are introduced. Thereafter, the water is acidified with sulphuric acid. Ferric chloride is added, together with sodium hydroxide and a coagulant, to a precipitation tank.

Most of the precipitated heavy metals are recovered (when in use) in an Actiflo Clarifier System, which depends on multi-plate thickener technology. The sludge is designed to be recovered in cyclones and directed to the final tailings pipeline. Treated water is designed to pass through three sand filters, operating in parallel, and filtered water is designed to flow through a conditioning tank to which sulphuric acid is added for final conditioning, prior to transfer to the process water tank.

Laboratory flotation test work demonstrated that untreated recycled process water could be detrimental to metallurgical performance, although the limited study could not isolate the reasons for this adverse effect. Accordingly, the plant is sized to treat approximately 50 percent of the total reclaim water, with a view to improving the water quality of this portion to regulatory discharge standards, were this ever required in emergent conditions. The modular design of the water treatment plant takes into account the possibility of future expansion.

At the time of the Micon site visit in 2017, Telson had yet to bring the water treatment plant on-line.

## 17.3 PROCESS CONTROL AND METALLURGICAL CONTROL AND ACCOUNTING

### 17.3.1 PROCESS CONTROL

Most of the plant operations are monitored from the central control room located between the grinding and flotation sections of the processing plant. In addition, a primary crusher control station is located in close proximity to the crusher. Programmable Logic Controllers (PLCs) are used throughout the plant. In particular, the SAG mill lubrication, the pressure filtration and on-stream analyzer systems are provided with independent PLCs. Nevertheless, all key operating parameters from these systems are available in the control room.

Basic control loops are used to control grinding circuits, pulp pH values and the like. On-stream flotation elemental analysis has been installed but not currently used for automatic reagent control. Similarly, particle size monitoring equipment is used to aid the operator, but not used for automatic circuit control. Thus, while systems have been designed to facilitate more comprehensive process control in the future, the initial configuration is simple and relatively unsophisticated.

Bunded reagent mixing, storage and distribution facilities are located along the south wall of the flotation area. Most reagents are mixed in a fully-automatic mode, prior to distribution using vari-speed peristaltic pumps servicing each point of application. The system lends itself to automatic control, once adequate operating databases have been established.

### 17.3.2 METALLURGICAL CONTROL AND ACCOUNTING

The mill feed conveyor is furnished with a weigh-scale, to determine the instantaneous and cumulative mill feed weight. A comprehensive system of on-line samplers, on-stream elemental analyzers and on-stream particle size analyzers from Thermo Fisher has also been installed. This well-proven system provides statistically significant samples of flotation product pulp for elemental analysis and, in some cases, particle size analysis, as indicated on Table 17-1.

Conventional, continuous on-stream elemental and particle size analyses are produced from the stations indicated on Table 17-1, to be used for process control. In addition, shift and daily composite samples are collected. The samples are assayed in the on-site assay laboratory, with the results being used to calculate shift and daily metallurgical balances. Sub-samples of the main samples are retained and homogenized to produce monthly composite samples. The subsamples are sent to an external laboratory for analysis.

The on-site assay laboratory is furnished with the normal sample receiving, preparation and metallurgical laboratory facilities. Assaying capabilities include atomic adsorption and conventional wet assaying procedures. Fire assaying is contracted to external laboratories. A laboratory Malvern Size Analyser is in frequent use.

**Table 17-1 Summary of Sample and Analytical Stations**

Sample Point			Sample Required For
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	Elemental Analysis	Particle Size Analysis	Process Control	Metallurgical Accounting
Bulk rougher feed	Yes	Yes	Yes	Yes
Zinc rougher feed	Yes	'----	Yes	'----
Zinc scavenger tail	Yes	'----	Yes	'----
Zinc first cleaner tail	Yes	'----	Yes	'----
Plant final tail	Yes	'----	Yes	Yes
Final copper concentrate	Yes	'----	Yes	Yes
Final lead concentrate	Yes	'----	Yes	Yes
Final zinc concentrate	Yes	'----	Yes	Yes
Bulk re-grind cyclone overflow	'----	Yes	'----	'----
Zinc re-grind cyclone overflow	'----	Yes	'----	'----

Note: Information supplied by Telson

Concentrate trucks are weighed on a certified platforms scale, with the gross and tare weights being electronically recorded. Samples of the concentrates contained in each truck are manually taken using a pipe sampler. Truck samples are homogenized and split into three equal portions. One portion is analyzed on site, the second is shipped to an external accredited laboratory and the third is stored in the archives.

Bi-weekly and monthly metallurgical balances are computed, based on: the integrated mill feed weight over the period; the weights of concentrates shipped; the moisture contents of concentrate shipped; the metal contents of concentrates shipped; and an adjustment to reflect surveyed concentrate inventories in the load-out shed. Monthly and accumulated monthly metallurgical balances are reported and reconciled against the cumulative daily metallurgical balances produced from the internal sampling system data.

## 17.4 TAILINGS DISPOSAL

The Campo Morado mine has two tailings dams, the Naranjo Alto B Tailings Storage Facility (TSF) and the Naranjo Bajo TSF. The Naranjo Bajo Stage 6 TSF reached its design storage capacity in September 2014, although the final closure design is still pending. It is located approximately west of the portal entrance to the mine in the valley below the processing facility and, although full, is still used for mine water retention.

The Naranjo Alto B TSF Main Embankment and Diversion System were constructed in 2014 to provide one to two years of tailings storage capacity. However, detailed design (Naranjo Alto A) has only been completed for the embankment to reach a crest elevation of EL. 1300m, with actual construction to EL. 1285m to reduce capital expenditure. A detailed design for the LOM storage capacity has not yet been undertaken, although the conceptual design indicates the potential for a capacity of 15 years storage at 2,200 tpd for a final crest elevation of EL. 1332 m.

When the project was previously under Care and Maintenance, Nyrstar engaged Knight Piesold Ltd to provide tailings and water management support. The last inspection was carried out in March 2017. It was concluded that the facilities



were observed to be stable with no significant deficiencies observed, although some specific maintenance issues were noted and recommendations made for both tailings dams. Telson has indicated that Mexican consultants will be utilised as the Engineer of Record (EOR), rather than Knight Piesold as previously. In their handover notes, Knight Piesold indicated there were a number of risks associated with both tailings dams that require management:

- Downstream Environment – both dams have a Hazard Potential Classification (HPC) of EXTREME based on Canadian Dam Association (2007) guidelines. This must be reflected in the operation, risk management and closure plans of the TSF and associated facilities.
- Surface Water Diversions and Spillways – this must be reviewed related to the extreme HPC noted above and water management facilities updated to comply with the latest Mexican and North American standards. Flow routing for extreme events is a critical consideration.
- Flooding of the Mine Yard and Portal Entrance – overtopping of the Diversion Structure and/or TSF embankment failure could potentially result in mudflows entering the underground mine.
- Mud Rush into Underground Workings – a portion of the underground workings lies directly beneath the Naranjo Alto TSF. The TSF basin is not fully lined and several open exploration drill holes connect the TSF basin to the underground workings. Telson has indicated that these will be grouted from within the workings.
- Seepage and Embankment Instability at the Naranjo Alto B TSF – seepage exiting the toe of the Naranjo Alto B TSF was noted in October 2015. As a result, recommendations were made to maintain a low water level in the tailings basin to minimise seepage. An updated embankment design and tailings deposition plan is required now that operations have resumed, including monitoring for potential seepage. No seepage was observed during the March 2017 Knight Piesold inspection.

The area is mountainous, seismically active and experiences intense rainfall events. Most of the precipitation occurs in the annual wet season (early June to October) followed by a period of limited or no precipitation during the dry season (November through May). The mine tailings have a high acid-generating potential, due to the presence of pyrite. Consequently, the tailings deposition strategy requires a robust embankment design with designed water management strategies to manage both large precipitation events and extended dry periods. The TSF was therefore approved on a zero-discharge basis, including provision for a one in 200-year flood event.

The tailings dam embankment will be raised as it begins to fill until the dam reaches its maximum design height, although detailed design for LOM has yet to be carried out. It is anticipated that tailings production will vary significantly over the life-of-mine, as mine production ramps up and as varying mineralized material grades result in changing tailings flows. The detailed design must also include provisions for closure. The TSF embankment and water management design requires urgent updating now that operations have restarted, due to the limited current capacity (approximately 1 - 2 years) and Telson's intention to increase throughput up to potentially 2,500 tpd.

Telson is currently in the process of clearing the vegetation and topsoil from the ultimate area to be encompassed within the Naranjo Alto B TSF.



## 17.5 WATER MANAGEMENT

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Telson is in the process of updating the water management protocols for the Campo Morado site. At the present time because the tailings and water levels behind the Naranjo Alto B dam are so low, water management is not a significant concern. However, as the tailings pond sees more deposition of material and the tailings dam continues to be raised to its ultimate height, water management will become more of a concern.

Since environmental requirements dictate that the mine has a zero surface water discharge (from the TSF), it is necessary to divert as much natural run-off water as possible around the TSF. Potential storage options for this diverted water for later use in the processing facility have been discussed, but as no decision has been made regarding building the necessary structures to capture this water, this PEA assumes that diverted water will not be captured.

## 18.0 PROJECT INFRASTRUCTURE

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The Campo Morado Project is in the physiographic province of the Sierra Madre del Sur. The local terrain is cut by deeply incised drainages and steep hillsides, with elevations ranging from 600 to 1,700 metres. The Project area is approximately 160 km south-southwest of Mexico City.

The site is currently accessible from Mexico City (approximately a 6 hour drive) via good quality, paved highways to approximately 30 km west of the city of Teloloapan on Guerrero State highway 51, from where a 35 km graded dirt road leads to the project site. The dirt road is regularly maintained and key portions upgraded where the gradient is steep and/or prone to erosion. A second dirt road was constructed, handed over to the relevant authority and is deemed a public road. It originates from the city of Arcelia on Guerrero State highway 51 and is about 30 km long.

There is also helicopter access to the site (approximately one hour from the Mexico City heliport).

Roads constructed by Farallon and Nyrstar for exploration and mine development provide access to the processing plant, workforce accommodations, mine portals, tailings disposal dam, water diversion structure and other facilities. A designated ore haul road links the mine portals and processing plant. A network of other roads links the Mine facilities with near-surface mineralized zones, drill sites and other exploration facilities. Telson subsidiaries hold surface rights covering these facilities and the local infrastructure. Several small communities, farms and residences also occur in the Project Area along the local network of roads in the vicinity.

The project connects to the regional power grid by a 22.5 kilometre, overhead transmission line from Arcelia. A primary 10 MW transformer station is located next to the primary crusher at the plant site. Power distribution from there to the plant and related facilities is at 4,160 V. A secondary transformer is located at the truck maintenance shop, near to the plant site from where a 13,800 V overhead power line extends to sub-stations located at the mine portal site.

Figure 18-1 is a photograph that shows some of the infrastructure at the Project site.

Runoff water from the surrounding hills is stored behind the tailings dams. At the end of the rainy season, the depth of the water may be in excess of 7 metres. Water is pumped to the process water tank to ensure continued operation during the dry months. Process water to supply the plant can also be provided by a number of shallow wells, but historically have not yet been required.

The infrastructure such as the processing facilities, camp and main offices are spread out along the tops of ridges with the current portal access, mining repair shops, mining offices and the original tailings facility located at a lower elevation. The remaining infrastructure and new tailings facility are scattered within the general area between the plant and mining infrastructure.

**Figure 18-1 Photograph Looking Southwest Showing Access & Haul Roads, Power Line, Mine & Mill Sites & Previous Tailings Dam**



## **18.1 ADMINISTRATION, ENGINEERING AND EXISTING INFRASTRUCTURE**

Figure 18.2 shows the Campo Morado mine layout, with the current operations and processing facilities, camp, old tailings facilities and current tailings facility.

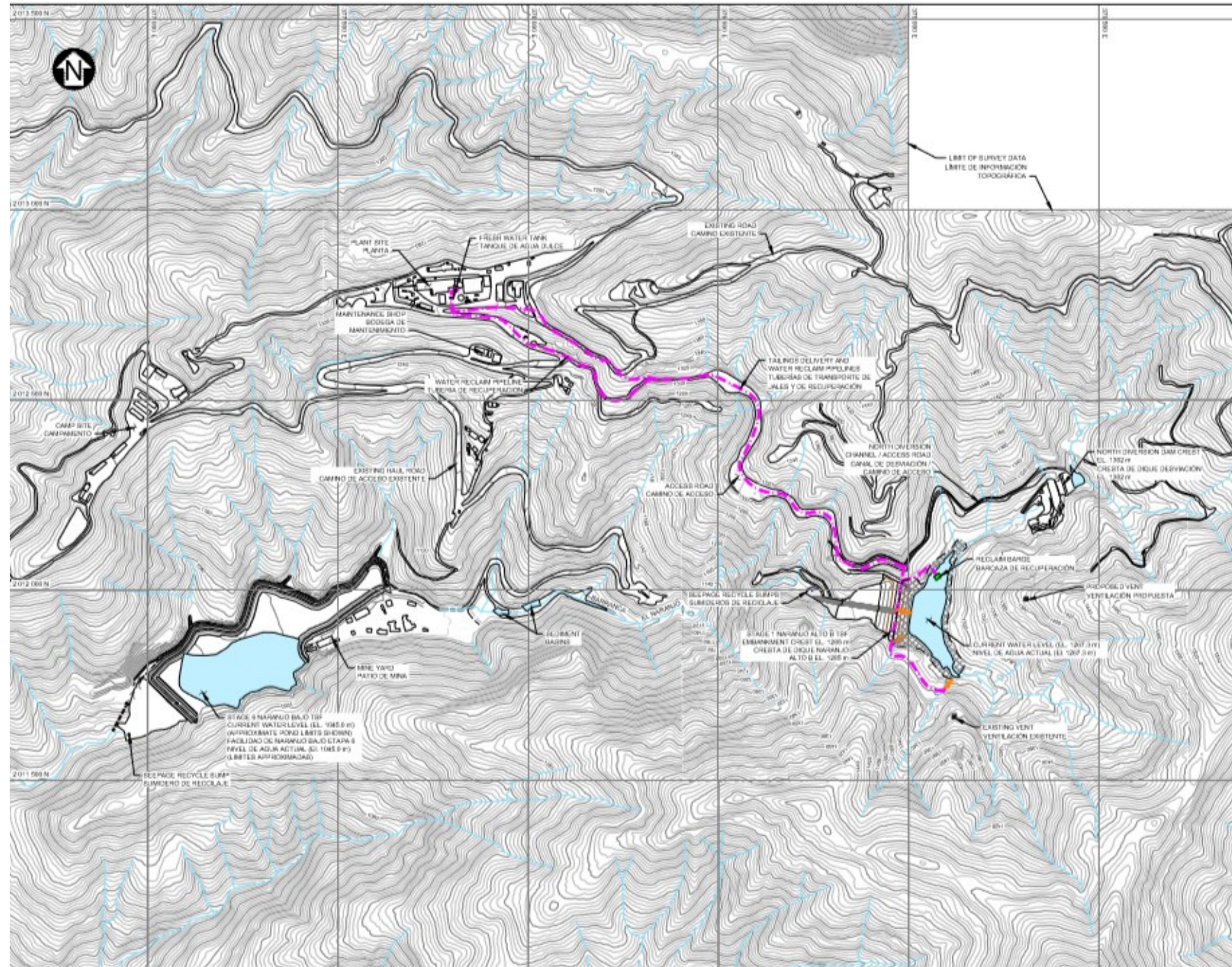
The Campo Morado Project has all infrastructure necessary for its current operations but will have to undertake further construction of the tailings facility in the near term.

### **18.1.1 MANPOWER ORGANIZATION**

The current total manpower for the Campo Morado mine is shown in Table 18.1, excluding any contract personnel.



Figure 18-2 Plan View of the overall Campo Morado Mine Site Infrastructure Layout







**Table 18-1 Total Manpower for the Campo Morado Mine**

Department	Quantity
Administration	8
Warehouse	8
Purchasing	4
Shipping	6
Geology	4
Plant Operations and Laboratory	33
Plant, Maintenance	54
Plant, Electrical	11
Mine, Electrical	14
Mine, Mechanical	27
Plant, Mechanical	8
Medical (Ambulance, etc.)	5
Mine	80
Civil works	10
Services	17
Surveying	1
<b>Total Personnel</b>	<b>290</b>

### 18.1.2 OFFICES, WORKSHOPS, CAMPS AND STORES

The main administrative office space is provided close to the processing facility and the main entrance to the mine site. Other office space is located either within the processing facility or in the building close to the current mine portal.

There is a fully equipped assay laboratory as well as a second laboratory to conduct metallurgical testwork on site. These are located close to the processing facility as is the well-stocked two-storey warehouse and concentrate drying and loading facilities.

Machine shops for underground vehicle repair are located just outside the current portal

Most of the employees when on site are housed in a large camp that not only includes living quarters but a canteen and recreational facilities. A second camp that houses senior staff and visitors is located a short distance away from the main camp.

Other infrastructure is located along the roads between the processing facility, camp area and portal area.

There was an exploration facility located close to the mine but, during the care and maintenance period, the core storage area was damaged. As a result, it is no longer useable. This area must be restored prior to future use as a base for conducting exploration programs on the remaining Campo Morado Property.

In general, it was observed by Micon that the camps, offices, laboratories, and other infrastructure were well maintained and more than adequate for Telson’s current requirements.

## 18.2 ELECTRICAL SUPPLY

A 22.5 km long, overhead power supply line from Arcelia extends to a primary, 10 MW transformer station located next to the primary crusher at the plant site, from where power is distributed to the plant and related facilities at 4,160 V. A secondary transformer is located at the truck maintenance shop, near to the plant site, from where a 13,800 V overhead power line extends to sub-stations located at the mine portal site.

The instantaneous power draw at the process plant averaged approximately 6.5 MW in 2014, the last year of full operation. The cost of power is relatively low at approximately \$0.1/kWh.

The mine site sub-station supplies 480 V power for surface distribution near the portal area and 13,800V for distribution to the underground mine and associated surface infrastructure. A step-up transformer and a 15 kV feeder breaker supplies 13,800 V to the underground workings. Stand-by power, for use as emergency back-up for underground ventilation and pumping during power outages, is available in the form of two 480 V, 500 kW diesel generators, located near the San Agustin portal, that are capable of operating in parallel.

Power is taken underground by a 15 kV power feed cable installed in the ventilation decline. The cable extends to an underground sub-station near Crosscut #5, which consists of 15 kV switchgear used to disperse power throughout the mine for major infrastructure and production loads. Production areas typically have 15 kV isolation switches, the use of which will allow power to be shut-off in one section of the mine without affecting production in another section of the mine. Individual isolation switches are used to supply power to mine load centres (MLCs) for development and production loads in their respective areas. The MLCs are skid-mounted, portal sub-stations used to transform the voltage supply from 13,800 V to 480 V for use by drills, ventilation fans and pumps.

Table 18-2 summarizes the average energy distribution in kWh for the Mine and Processing Facilities for 2014 through 2016. It should be noted that 2014 was the last full year of production before Nyrstar placed the Campo Morado mine on a care and maintenance basis in January 2015.

**Table 18-2 Summary of the Average Energy Usage for 2014 through 2016**

Area	Power Distribution	Average kW/h		
		2014	2015	2016
Mine	Compressors	181,155.2	81,258.8	1,677.4



	Ventilation	756,194.5	214,618.9	0.0
	Pumping	200,497.7	154,276.0	41,182.5
	Infrastructure	34,354.6	882.4	0.0
	Exploration	46,729.5	0.0	0.0
	Mining	126,133.4	10,936.0	0.0
	Haulage	10,933.9	11,274.5	5,091.9
	Mine camp	68,280.7	92,070.0	96,640.0
	<b>Total</b>	<b>1,399,317.9</b>	<b>565,316.6</b>	<b>144,591.8</b>
Processing Plant	Crushing	103,315.3	5,642.3	1,293.1
	Grinding	1,036,697.8	53,476.4	12,975.3
	2a. Grinding	916,163.3	47,258.8	11,466.7
	Floating Bulk	101,289.5	5,224.9	1,267.7
	Zinc Flotation - Copper	151,934.2	7,837.3	1,901.6
	Filters	131,169.9	6,766.2	1,974.8
	Tailings dam	37,983.6	1,959.3	475.4
	Administration	12,661.2	653.1	158.5
	Laboratory	41,022.2	2,116.1	180.3
		<b>Total</b>	<b>2,532,237.0</b>	<b>130,934.4</b>
Mine and Plant	<b>Total</b>	<b>3,931,554.8</b>	<b>696,251.0</b>	<b>176,285.3</b>

Note: Information supplied by Telson.

## 18.3 WATER SUPPLY

Telson is in the process of revising Nyrstar's previous water balance program to ensure that, in addition to the needs of the operations at Campo Morado, the site maintains its zero surface water discharge requirements and no process water is discharged to the environment.

Runoff water from the surrounding hills is stored behind the tailings dams in the North Diversion Dam, with any storm flows passing through a Diversion Ditch around the TSF. At the end of the rainy season, the depth of the water may be in excess of 7 metres and water is pumped to the process water tank to ensure continued operation during the dry months. Process water to supply the plant can also be provided by a number of shallow wells, but historically these have not yet been required. It is necessary to divert as much natural run-off water as possible around the TSF. Potential storage options for this diverted water have been discussed, but no decision has been made regarding building the necessary structures to capture this water (it has been recognised that flotation recoveries are higher when fresh water is used instead of returned process water).

All process water is returned to the plant and is normally provided by the TSF return water pumps that pump supernatant water from the tailings basin back to the process water tank.



Careful water management is required to manage both rainy and dry seasons and potential storm events, to maintain zero water discharge, particularly as tailings deposition increases in the relatively new Naranjo Alta B TSF.

## 19.0 MARKET STUDIES AND CONTRACTS

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### 19.1 MARKET STUDIES

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Telson has not conducted any market studies as the sale of lead and zinc concentrates are subject to industry standard terms between the sellers and the buyers. Most of the actual details of these agreements are confidential between the buyers and the sellers due to the competitive nature of the global commodities industry. However, there are standard terms in most agreements that are generally common between the purchasers of the concentrates such as delivery of minimum tonnages, payments related to LME and LBMA Spot prices and transportation terms.

Lead and zinc concentrates produced at mines like Campo Morado are sold into the world markets through various agreements between the companies/mines producing the concentrates and smelters or commodity traders. These agreements usually specify that the concentrates are a certain quality and that any deleterious elements are minimized and where they exceed the minimum values they are subject to various penalties. In some cases, the deleterious element amounts within a concentrate can be high enough that concentrates are rendered non-salable.

### 19.2 CONCENTRATE SALES

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Telson produces a lead and zinc concentrate at the Campo Morado mine, which are the subject to an offtake agreement with Trafigura Mexico S.A. de C.V. (Trafigura). At the same time, Telson negotiated its offtake agreement it also negotiated a USD 5 million loan facility with Trafigura.

Telson announced both the USD 5 million loan facility as well as the offtake agreement with Trafigura on September 18, 2017 via a press release.

The Key Terms of Telson's Loan and Offtake Agreements with Trafigura is summarized in Table 19.1

Telson has provided industry standard security to Trafigura in the form of a corporate guarantee, a promissory note plus a pledge of the shares of Telson 100% owned subsidiary company Nyrstar Campo Morado, S.A. de C.V. The extent of Telson's liability to Trafigura within the Agreements under Mexican law is limited to the amount of the offtake loan plus interest.

For the purposes of the PEA, it is assumed that the loan will be paid off and that the offtake agreement with Trafigura will be renewed when the time comes.

The key terms, rates and/or charges in relation to the loan and the off-take agreement are within the norms of the mining industry.



Telson may elect to produce a copper concentrate, on a regular basis, at some point in the future as it looks to improve the metallurgical recoveries and optimize the processing facilities.

**Table 19-1 Summary of the Key Terms for the Loan and Offtake Agreement**

Loan / Agreement	Key Terms
USD 5 Million Loan Facility	USD 5 million received in Telson's bank account on September 15, 2017.
	Three-year term with six-month grace period followed with 30 repayment installments.
	Loan facility matures in September 2020 and bears interest at rate equal to LIBOR (3M) +5%.
	No hedging Conditions.
	No equity-based payments.
Offtake Agreement	51-month term ending December 2021 for Campo Morado Pb and Zn concentrate production.
	Fixed minimum tonnage to be sent during the offtake term.
	Very competitive industry payable metal terms at LME and LBMA Spot prices.
	Access to prompt payments 5 days after delivery, providing excellent liquidity to the operation.
	Competitive transport charges.

### 19.3 OPERATIONS

The mine is located approximately 4 to 5 hours from Mexico City via primarily paved Mexican federal and state highways. However, the last 35 km consists of an all-weather compacted gravel and dirt road that has been upgraded to allow larger trucks to haul the concentrates from the mine and allow larger equipment to be brought into the site. Portions of the road have been covered in cement either to keep the dust down while passing individual residences of the locals or to prevent erosion where the road crosscuts an intermittent creek bed.

Currently Telson is using primarily its owner-only workforce and management team that it has hired to conduct the mining and processing. These workers are hired both from the local area as well as from throughout Mexico. The personnel are subject to a rotational schedule and housed at the camp during their period at the minesite. Specialist contractors and consultants are hired on an as-needs-be basis.

All other minor contracts such as for explosives, local supplies and produce for the commissary, etc. are general contracts the terms of which vary from supplier to supplier and from mine to mine as they are usually negotiated as site specific for the supply of goods and services. These contracts usually have standard clauses subscribed to them and are therefore within the industry norms for the goods and services they cover.

## **20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

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### **20.1 ENVIRONMENTAL STUDIES AND PERMITTING**

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#### **20.1.1 HISTORICAL ENVIRONMENTAL STATUS**

The following historical environmental description of the permitting was partly extracted from the September 2007, Farallon Resources Technical Report

##### **20.1.1.1 Exploration Activities (Including Preliminary Mine Development)**

The original environmental permit for the Campo Morado Project was granted on April 02, 1995. It has since been renewed and modified on an annual basis, during the periods that the Company/Farallon has been active on the Campo Morado Project area. The most recent extension was granted to October 2007. Further renewals depend on Farallon continuing to adhere to the requirements of LGEEPA, which adherence is assessed by SEMARNAT by means of three-monthly progress and disturbance reports submitted by Farallon. It is anticipated that Farallon will apply for the next annual renewal of the current exploration permit at the appropriate time; a renewed permit will allow the Company's current exploration activities to continue to December 2008.

The existing environmental permit covers the Campo Morado Project during the exploration phase only, which exploration can include limited underground development for purposes of deposit definition drilling (including a decline access). It also covers certain disturbances, including: rehabilitation of old roads and underground workings; the development of new access roads, camp and other facilities; and the development of exploration pits, surface drilling pads, underground drilling pads, surface and underground drillholes. The permit prohibits hunting or collection of flora and fauna. The permit requires compliance with noise and air pollution standards, reclamation of abandoned areas, storage of spent lubricants until they are shipped to recycling facility, reclamation of any oils or fuel spills and the preparation of an endangered species and reforestation study.

Farallon is conducting its current exploration and underground development work in compliance with the Campo Morado environmental permit. On June 7, 2006, SEMARNAT confirmed that the then existing Campo Morado permit was sufficient for the purposes of the proposed work plan going forward, including surface road works (cutting new roads and rehabilitating old/disused roads), underground development, surface and underground drilling.

##### **20.1.1.2 Construction Phase**

Farallon's MIA-P submission, in support of the construction phase of project development (in Spanish, by Corporación Ambiental de México, S.A. de C.V. and dated October 2006), were submitted to SEMARNAT on October 26, 2006. A copy of the original report has been seen by MineFill; its submission is confirmed in the permitting letter to Farallon from



SEMARNAT dated March 29, 2007 (i.e. the aforementioned document by Biologist J. Ricardo Juárez Palacios of SEMARNAT). The required documentation for application of a CUS permit was also been submitted by Farallon.

Farallon’s MIA-P was accepted, with certain conditions (Table 6.3), by SEMARNAT in a letter dated March 29, 2007. A so-called MIA permit was as a result issued to Farallon, which permit allows for full mine and mill construction at the G-9 project. The MIA permit is valid in perpetuity, unless Farallon violates the conditions set out by SEMARNAT or the scope of the permitted project changes. For the latter case, the MIA-P would have to be modified and re-submitted. It is anticipated that in these circumstances Farallon would submit the relevant/required MIA-P documentation at the appropriate time.

Farallon’s application for a Change of Use of Soil has been accepted by SEMARNAT and a CUS permit has been received (see the Company’s news release dated June 06, 2007). This completed the necessary permit requirements for mine and mill construction work on and for the G-9 deposit. Power line construction required an additional government permit, following submission of a separate MIA-P. Farallon assessed its electrical needs and submitted an MIA-P in respect of power line construction, which were subsequently granted.

**20.1.1.3 Mining Phase**

Farallon’s MIA and CUS permits authorize the full operation of a mine and mill at the G-9 deposit. The MIA permit also covers water use. Farallon was not asked to post a reclamation bond. In September 2007, on-going anthropological and archaeological studies were actively being carried out by Farallon staff members, through participation with the National Anthropological and Historical Institute (Instituto Nacional de Antropología e Historia, or “INAH”). An archaeological heritage study was completed and Farallon’s efforts have been recognized by the Director of INAH, Guerrero State. Farallon is also designed projects in conjunction with the communities to reinvest funds paid by Farallon to the National Forestry Commission (Comisión Nacional Forestal, or “CONAFOR”).

Table 20-1 summarizes the applicable Environmental Standards the Campo Morado Project was subject to at the time of construction.

**Table 20-1 Applicable Environmental Standards at the Time of Construction**

Regulatory Instrument	Comments
<p>NOM-041-SEMARNAT-1999</p> <p>It establishes the maximum permissible limits for the emission of contaminant gases from the leak from motor vehicles in circulation that use gasoline as fuel.</p>	<p>During the execution stages of the Project vehicles, equipment and heavy machinery will be used, which, as indicated by the Petitioner, will help in the actions intended to maintain the emissions to the atmosphere within the limits established by this standard.</p>



Regulatory Instrument	Comments
<p>NOM-043-SEMARNAT-1993</p> <p>It establishes the maximum permissible levels for the emission to the atmosphere of solid particles from permanent sources.</p>	<p>During the execution stages of the Project vehicles, equipment and heavy machinery will be used, which, as indicated by the Petitioner, will help in the actions intended to maintain the emissions to the atmosphere within the limits established by this standard.</p>
<p>NOM-052-SEMARNAT-2005</p> <p>It establishes the characteristics of hazardous waste, the list thereof and the limits that make waste hazardous due to its toxicity in the environment.</p>	<p>During the development of the activities of the Project hazardous waste will be generated, such as spent lubricant oils, tows with grease or lubricants, which will be stored temporarily in warehouses whose construction and operation shall meet the requirements established by the Regulations of the LGEEPA on Hazardous Waste matters and then transported by a company authorized for their handling and final disposal.</p>
<p>NOM-059-SEMARNAT-2001</p> <p>Environmental Protection-Native species of Mexico of wildlife-Risk categories and specifications for their inclusion, exclusion or change – List of species at risk. Published on March 6, 2002, in the Official Gazette of Mexico.</p>	<p>According to the information contained in the MIA-P and additional information, within the area of study of the project the following flora species are distributed: <i>Dalbergia congestiflora</i> with the category of endangered species and <i>Dioon tomasellii</i> and <i>Licania arborea</i> both with the category of threatened species. As regards the fauna, the petitioner indicated the existence of the following species: with the category of threatened species: <i>Coleonyx elegans</i>, <i>Heloderma horridum</i> (scorpion), <i>Ctenosaura pectinata</i> (iguana), <i>Leptohis diplotropis</i> (Pacific Coast Parrot Snake) and with the category of special protection species: <i>Leptodeira annulata</i> (mazacuata), <i>Tantilla calamarina</i> (Pacific Coast Centipede Snake), <i>Trimorphodon biscutatus</i> (mazacuata), <i>Cratalus simus</i> (Rattlesnake), <i>Rhinoclemmys rubida</i> (turtle) and <i>Kinosternon integrum</i> (turtle).</p> <p>According to the foregoing, the petitioner must take actions intended for the conservation and protection of wildlife.</p>
<p>NOM-081-SEMARNAT-1994</p> <p>It establishes the maximum permissible limits for the emission of noise from permanent sources and their method of measurement.</p>	<p>During the mining stage of the minerals, noise will be generated inside the mine, which will not affect the surface and the use of the equipment and heavy machinery, and therefore the Petitioner stated in the MIA-P that it will take all the actions required to comply with the levels established in such standard.</p>

Regulatory Instrument	Comments
<p>NOM-141-SEMARNAT-2003</p> <p>It establishes the procedure for the characterization of the tailings, as well as the specifications and criteria for the characterization and preparation of the site, project, construction, operation and post-operation of tailings dams.</p>	<p>As stated by the Petitioner in the MIA-P, the project will build a tailings dam; and for that purpose, the petitioner applied the aforementioned standard to its project.</p>

Note: the “Petitioner” is Farallon. Source: permitting letter to Farallon from SEMARNAT dated April 19, 2007.

### 20.1.2 CURRENT ENVIRONMENTAL STATUS

Since the Campo Morado Project is located on a number of concessions upon which mining has previously been conducted, all exploration work continues to be covered by the environmental permitting already in place and no further notice is required to be given to any division of the Mexican government. The specific environmental permitting of the Campo Morado mine site was obtained by the previous operators, via an environmental assessment. It is valid for the duration of the mining concessions that comprise the mine, provided that Telson keeps the permitting in good standing.

Micon is unable to comment on any remediation that may have been undertaken by previous owners, as there appear to be no records of any previous remediation work at the site. The current status of environmental permitting for Telson’s Campo Morado mine is summarized in Table 20-1.

**Table 20-2 Current Status of Environmental Permitting**

	Permit or Licence		Observations
In Matters of Environmental Impact:	Manifestation of Environmental Impact (MIA-P) Original Project		Authorization for the Construction, Operation and Abandonment of the Project; Exploitation and Mineral Benefits (Expiration April 19, 2017) + (10-year extension to April 19, 2027)
	Aut. SGPA-DGIRA-DG.-0636.07	19-Apr-07	
	Manifestation of Environmental Impact (MIA-P) Electric Transmission Line		Authorization for the Construction and Operation of the Arcelia Electric Transmission Line - Campo Morado (Maturity January 23, 2038)
	Aut. DFG-UGA-DIRA-025-2008	23-Jan-08	
	Manifestation of Environmental Impact (MIA-P) Ampl. Project Areas and Access Road Access		Authorization for the Construction and Operation of the Access Road to the Beneficiation Plant (P. Tepehuaje - Planta); (Expiration December 21, 2029)
	Aut. DFG-UGA-DIRA-893-2009	21-Dec-09	
	Manifestation of Environmental Impact (MIA-P) 2a. Expansion of the Campo Morado Mining Project		Authorization for Construction and Operac. of Presa de Jales N. Under New Camp, PTAR, Ampl. Plant Process, etc. (Expiration September 11, 2016) + (2-year extension to September 7, 2018)
	Aut. DFG-UGA-DIRA-219-2012	11-Sep-12	
	Manifestation of Environmental Impact (MIA-P) Construction of the Jales Naranjo Alto Dam		Authorization for the Construction and Operation of the Jales Dam "Naranjo Alto and associated works"; (Expiration November 29, 2022)
	Aut. DFG-UGA-DIRA-1753-2012	29-Nov-12	
	Manifestation of Environmental Impact (MIA-P) Nyrstar Aerodrome and Associated Works		Authorization for the Construction and Operation of the "Aerodrome and associated works"; (Expiration December 12, 2027) (Concluded by Withdrawal)
	Aut. DFG-UGA-DIRA-1896-2012	12-Dec-12	
	Manifestation of Environmental Impact (MIA-P) Direct Mining Exploration		Authorization for the Construction and Operation of "Direct Mining Exploration"; (Expiration March 19, 2016) Concluded
	DFG-SGPARN-UGA-DIRA-00186-2013	8-Mar-13	
	Manifestation of Environmental Impact (MIA-P) CUS Apert. Banks Loan and Ampl. Naranjo Dam		Authorization for Elevation Cortina Presa de Jales 6a. Stage (Material Bank); 6,167 hectares (Expiration July 17, 2015 "Construction") Completed (Expiration July 17, 2064 "Operation")
DFG-SGPARN-UGA-DIRA-00591-2014	17-Jul-14		
Manifestation of Environmental Impact (MIA-P) Deposit of Jales in Interior Mine		Authorization for Thickening of Jales and Deposit in Interior Mine; (Expiration June 27, 2024)	
DFG-SGPARN-UGA-DIRA-00465-2014	3-Jun-14		
In the matter of Environmental Risk:	Environmental Risk Study (ERA) Original Project		Authorization for the Operation of the Project; Exploitation and Mineral Benefits (Expiration April 19, 2017) + (10-year extension to April 19, 2027)
	Aut. S.G.P.A.-DGIRA.-DG.-0636.07	19-Apr-07	
	Environmental Risk Study (ERA) Level-2 Cyanide Storage Extension		Expansion from 16,332 tonnes to 40.83 tonnes, (from 12 to 30 containers of 1,361 kg each); The ERA Level-2 is related to the PPA. (Aut. DGGIMAR.710 / 005229) (Without expiration)
	Does Not Apply Received SEMARNAT	7-Apr-09	
Environmental Risk Study (ERA) Level-2 Expansion of the Mining Project			



	Permit or Licence		Observations
	Does Not Apply Received SEMARNAT	12-Apr-13	Risk Update for the 2nd. Expansion of the Mining Project; The ERA Level-2 is related to the PPA. (Aut. DGGIMAR.710 / 006913) (Without Expiration)
	Accident Prevention Program (PPA)		The authorization of the PPA refers to compliance with the provisions of the ERA Level-2. (Describes preventive measures and actions against the risks analyzed in the ERA). (No Expiration)
	Aut. DGGIMAR.710/006913	12-Sep-13	
	Use of Sodium Cyanide in the Benefit Process Notice of Suspension of its use.		The SEMARNAT is aware of the temporary suspension of the use of Sodium Cyanide in the Benefit Process, requesting timely notice in the resumption of this activity. (Without Expiration)
	Of. S.G.P.A./DGIRA/DG/4526/2010	6-Jul-10	
	Use of Sodium Cyanide in the Benefit Process Notice of Resumption of its use.		The Notice of Notice of Resumption of the use of Sodium Cyanide was entered into SEMARNAT on January 23, 2012. (Without Expiration)
	Received SEMARNAT	23-Jan-12	
In terms of change of soil use:	Technical Justification Study (ETJ) Original Project		Authorization for Change of Land Use in 46.16 ha (Term 12 years); (Expiration May 11, 2019)
	Aut. DFG.02.03.257/2007	11-May-07	
	Technical Justification Study (ETJ) Electric Transmission Line		Authorization for Change of Land Use in 8.1725 ha (Valid for 1 year); Work executed.
	Aut. DFG.02.03.546/2007	19-Dec-07	
	Technical Justification Study (ETJ) Access Road Opening		Authorization for Change of Land Use in 6.80 ha (Valid for 2 years); Executed work
	Aut. DFG.02.03.068/2008	5-Feb-08	
	Technical Justification Study (ETJ) Expansion of Project Areas		Authorization for Change of Land Use in 35.00 ha (Valid for 2 years); Executed work
	Aut. DFG.02.03.069/2008	5-Feb-08	
	Technical Justification Study (ETJ) Dam of Jales Naranjo Bajo		Authorization for Change of Land Use in 7,177 ha (Effective 2 years) (Extended Term 2 years to Feb 26, 2017) (Concluded by Withdrawal)
	Aut. DFG.UARRN.328/2012	5-Dec-12	
Technical Justification Study (ETJ) Jales Naranjo Alto Dam and Aerodrome		Application for Change of Land Use in 5,495 ha (Valid for 1 year) Work executed	
Aut. DFG.SGPARN.UARRN.820/2013	7-Aug-13		

Permit or Licence		Observations
Justificative Technical Study (ETJ) Enlargement of the Jales Naranjo Alto Dam		Application for Change of Land Use in 25,586 ha (Valid for 1 year) Work executed
Aut. DFG.SGPARN.UARRN.1033/2013	7-Nov-13	
Technical Justification Study (ETJ) Elev. Cortina Presa Jales (6 <sup>a</sup> Stage) and Auxiliary Works		Application for Change of Land Use in 5,329 ha (Effective for 1 year) (Extended Term 1 year to Sep 3, 2016) + (Additional Amplification 1 year as of 07-Sep-2017) + (Additional Amplification 1 year to 07-Sep-2018)
Aut. DFG.SGPARN.UARRN.569/2014	25-Jun-14	

Micon is not aware of any other permits that Telson needs to conduct the mining and processing operations at the Campo Morado mine. Further permits may be necessary once Telson starts to conduct exploration of the remaining portions of the property to build roads, drill pads, etc. Further permitting will most likely be needed as Telson expands and raises the dams at the tailing facility as production continues beyond the current two- year capacity.

At the time of the Micon site visit Telson was using a local contractor to spray water onto the various roads on site as a part of its ongoing dust suppression program. Telson is in the process of reviewing this arrangement.

Telson is in the process of upgrading the site monitoring of dust, gas, odors and noise as well as upgrading the water management reporting now that it has taken the project off care and maintenance and is bringing the operation back into production.

Telson has not been asked to post a reclamation bond and, to the best of Micon’s knowledge, there does not appear to be any legal requirement for posting a reclamation bond in Mexico. Reclamation issues are instead left to operators and it appears usual to take out civil responsibility insurances that typically cover mine reclamation, tailings dam failures and similar potential environmental impacts/disasters that could befall an operation. However, as Telson raises the tailings dams in conjunction with future production further permits will most likely be needed to be acquired from the appropriate Mexican environmental and regulatory bodies.

Telson is in the process of outlining reclamation plans and when it completes them, they will most likely be conducted in stages as each zone is mined out and a portion of the infrastructure moves with the development. The processing facility and tailings ponds will most likely be among the last areas to be reclaimed since the processing plant will be used for all of the deposits. The first tailing pond can still be used for water storage if needed, so it is unlikely full reclamation will be conducted on the first tailings pond at least in the foreseeable future.

The details of the tailing disposal facility along with a discussion of the environmental monitoring of the facility while the project was under care and maintenance is discussed in Section 17.4 as part discussions related to the processing facility at the Campo Morado Project.

## 20.2 SOCIAL AND COMMUNITY IMPACT AND SECURITY

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### 20.2.1 SOCIAL AND COMMUNITY IMPACT

Telson has been in discussions with the various local communities since its acquisition and re-opening of the Campo Morado Project to work on areas which mutually are beneficial, and which will assist in improving the living standards of the locals. Discussions related to the needs of the individual communities and groups within the area are ongoing.

Telson has initiated discussions with the state and federal governments over the potential to upgrade the conditions found on the various access roads and highways in the area. Telson notes that not only will this benefit themselves with easier shipment of concentrates, but it will also assist the locals.

Wherever possible, Telson has hired locals to work at the Project. This has reduced unemployment in the area and has increased the standard of living for locals employed at the mine.



*Titley Consulting Ltd.*



## 20.2.2 SECURITY

A private security firm, as well as a small unit from the Mexican army, cover security for the site. Security personnel operate at the main gate at the entrance to the property and patrol the property to ensure that unauthorized individuals do not encroach onto the property. The military provides secondary support for the security of the mine. At the time of Micon's site visit the security at the Campo Morado Project was good, and there had been no incidents. Security should continue improve at the Project as Telson demonstrates longer term commitments to the mining the various zones at the Project and as it continues to help improve the lives of the locals. However, given the interplay between the cartels, federal police and military within the state and in Mexico, there is always a risk it could become an issue in the future.



## 21.0 CAPITAL AND OPERATING COSTS

All material capital and operating cost estimates and other inputs to the cash flow model for the project have been prepared using constant, first quarter 2018 money terms, i.e., without provision for escalation or inflation.

Costs incurred in Mexican pesos (MXN) have been converted at the rate of MXN 18.75/USD.

### 21.1 CAPITAL COSTS

The Project is a previously operating mine that is currently being brought back into production. Consequently, this PEA treats the capital invested in the existing plant and infrastructure as a sunk cost, and all subsequent investment is considered as sustaining capital expenditure. Over the LOM period, sustaining capital is provided for as shown in Table 21-1.

**Table 21-1 Sustaining Capital for the Campo Morado Mine**

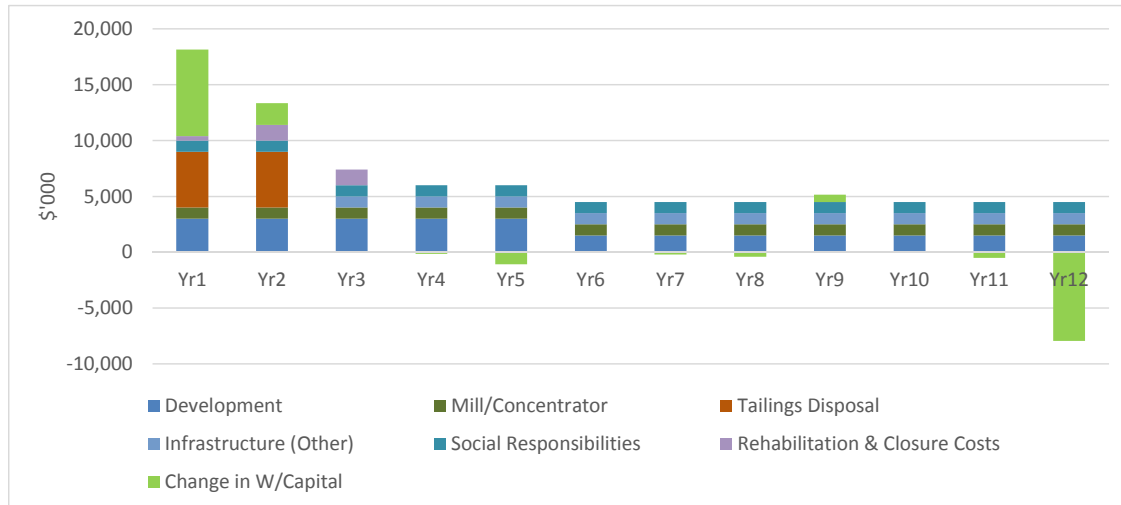
Sustaining Capital	LOM TOTAL (USD'000)
Development	25,500
Mill/Concentrator	12,000
Tailings Storage	10,000
Infrastructure (Other)	10,000
Social Responsibilities	12,000
Rehabilitation & Closure Costs	3,200
<b>Total</b>	<b>72,700</b>

The sustaining capital cost estimates given above are based on preliminary estimates for the development costs of access to each area of the underground mine, as well as ongoing work to enhance mill performance (increasing throughput, metal recoveries and grade of concentrate). Additional tailings storage capacity is also required, and provision is also made for continuing social and environmental work, as well as funding for eventual mine closure and rehabilitation.

Working capital is provided for on the basis of 30 days accounts receivable and 60 days stores, offset by 30 days of accounts payable.

The annual distribution of the capital expenditures and working capital flows is summarized in Figure 21-1.

**Figure 21-1 Annual Capital Expenditures**



## 21.2 OPERATING COSTS

Operating cost estimates for the Project are forecast on the basis of previous operating experience at the Project, modified where appropriate to reflect increased throughput and proposed changes in the underground mining method.

Over the LOM period, operating costs are forecast as shown in Table 21-2.

**Table 21-2 Operating cost estimate for the Campo Morado Mine**

Project Operating Costs	LOM Average USD/t milled	LOM TOTAL USD'000
Selling Costs	23.52	228,997
Royalties	2.97	28,896
Mining	32.78	319,190
Processing	24.72	240,745
G&A	14.76	143,744
<b>TOTAL Operating Costs</b>	<b>98.74</b>	<b>961,571</b>

### 21.2.1 SELLING COSTS

Selling costs comprise concentrate transport and treatment charges, and refining costs for payable metals in concentrate. These are calculated based on Micon's understanding of the terms agreed between Telson and Trafigura for the sale of zinc and lead/copper concentrates.

Over the LOM operating period, approximately 78% of the gross value of metal in concentrates is payable. Penalties for deleterious elements have been taken into account where appropriate. Transport, handling, treatment and refining charges account for a further 15% of the gross metal value, resulting in an overall NSR value of close to 63% of the gross value of metal in concentrate.

### 21.2.2 ROYALTY

A 3% royalty payable to SGM on the NSR value of concentrate sales (before transport costs) has been provided for in the cash flow model.

A royalty of between 0.5% and 4.25% of the NSR value of the concentrate sales (before transport costs) is payable on zinc production from the Project. However, Telson has an option to buy out the royalty for a lump sum of USD 4.0 million, and exercising of that option is assumed to take place prior to the cash flow period and so, for the purposes of this PEA, it is treated as a sunk cost.

### 21.2.3 MINING COSTS

Mine development and production costs have been projected on the basis of a variable cost component of USD 21/tonne of mill-feed mined, plus a fixed cost component of USD 10.6 million per year to cover management, operating and equipment maintenance labour costs, the provision of technical services (including survey, geology, sampling and grade control analysis, mine planning, etc.) as well as indirect operating costs such as dewatering, ventilation, and haulage road/ramp maintenance.

Over the LOM period, total mining operating costs average USD 32.78/t mill-feed, as shown in Table 21-3.

**Table 21-3 Mine operating cost estimate for the Campo Morado Mine**

Mine Operating Costs	\$/t milled	USD'000/y	LOM TOTAL
Mining Production	21.00		204,498
Fixed/overhead costs		10,600	114,692
<b>Mine Operating Costs</b>	<b>32.78</b>		<b>319,190</b>

### 21.2.4 PROCESSING COSTS

Forecast processing costs comprise variable costs of USD 14.50/t mill-feed, plus a fixed cost component of USD 9.2 million/year, for an average over the LOM operating period of USD 24.72/t mill-feed, as shown in Table 21-4.

**Table 21-4 Plant operating cost estimate for the Campo Morado Mine**

Plant Operating Costs	\$/t milled	USD'000/y	LOM TOTAL
Variable costs:			



Reagents	4.00		38,952
Consumables	4.50		43,821
Power	5.00		48,690
Tailings disposal	1.00		9,738
Supervision		3200	34,624
Labour – operating		3000	32,460
Labour – maintenance		3000	32,460
<b>Plant Operating Costs</b>	<b>24.72</b>		<b>240,745</b>

### 21.2.5 GENERAL AND ADMINISTRATIVE COSTS

General and administrative costs include provisions for the costs of general management supervision, environmental management, ongoing rehabilitation, water supply/treatment, site access road maintenance, security, insurance, licensing, professional fees and social responsibilities. In total, this amount to a total cost of USD 13.3 million/year, or approximately USD 14.76/t mill-feed.

## 22.0 ECONOMIC ANALYSIS

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### 22.1 BASIS OF EVALUATION

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Micon has prepared its assessment of the project on the basis of a discounted cash flow model, from which Net Present Value (NPV) can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested.

The objective of the study was to determine the potential viability of an underground mine and on-site mill producing a zinc concentrate and a separate lead/copper concentrate, both of which are sold to off-takers as a feedstock for further processing. In order to do this, the cash flow arising from the base case has been forecast, enabling a computation of the NPV to be made. The sensitivity of this NPV to changes in the base case assumptions is then examined.

### 22.2 MACRO-ECONOMIC ASSUMPTIONS

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#### 22.2.1 EXCHANGE RATE AND INFLATION

Price assumptions for each product and by-product are given in United States dollar (USD, or \$) terms and, unless otherwise stated, all financial results are also expressed in U.S. dollars. All material capital and operating cost estimates and other inputs to the cash flow model for the project have been prepared using constant, first quarter 2018 money terms, i.e., without provision for escalation or inflation.

Costs incurred in Mexican pesos (MXN) have been converted at the rate of MXN 18.75/USD.

#### 22.2.2 WEIGHTED AVERAGE COST OF CAPITAL

In order to find the NPV of the cash flows forecast for the project, an appropriate discount factor must be applied which represents the weighted average cost of capital (WACC) imposed on the project by the capital markets. The cash flow projections used for the valuation have been prepared on an all-equity basis. This being the case, WACC is equal to the market cost of equity, which Micon has estimated to be approximately 8.0% in real terms.

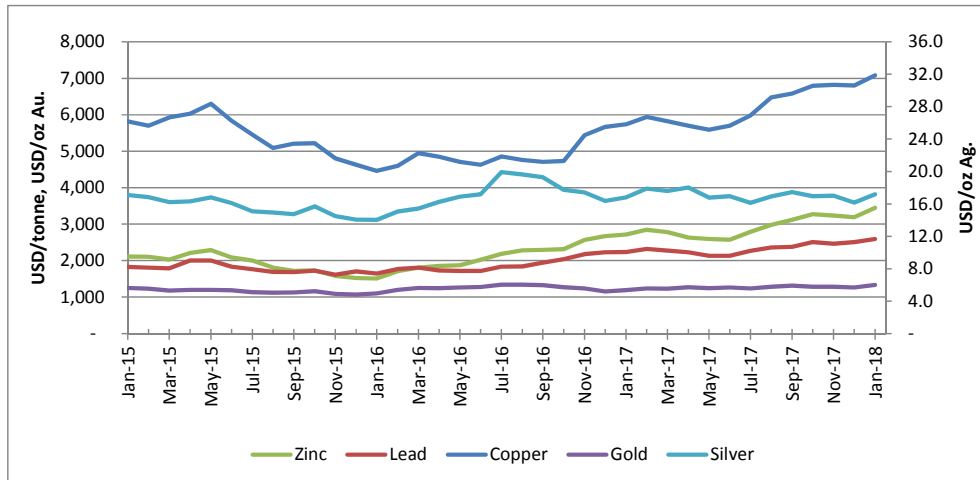
Micon has applied a real discount rate of 8.0% to the base case cash flow.

#### 22.2.3 EXPECTED METAL PRICES

The base case cash flow projection assumes static prices in real terms for zinc, lead, copper, silver and gold. Figure 22-1 shows the spot prices of zinc, lead, copper, silver and gold over the past three years.



**Figure 22-1 Metal Price History**



The prices used in the cash flow projection are rolling average prices for each metal for the 12 months ended January 2018, which Micon believes provide a reasonable estimate of project revenues for this preliminary economic assessment. The prices used are shown in Table 22-1.

**Table 22-1 Metal Price Forecast**

Metal	Unit	Price (USD/unit)
Zinc	tonne	2,954.70
Lead	tonne	2,346.40
Copper	tonne	6,274.20
Silver	troy ounce	17.08
Gold	troy ounce	1,269.00

#### 22.2.4 CORPORATE TAXATION

The project evaluation takes into account corporate income tax in Mexico, charged at 30% with an additional 7.5% Special Tax applied to mining companies on an EBIT basis. A loss of USD 82.5 million is carried forward into the cash flow period, reducing the project's taxable profits by that amount.

Note that a royalty to the Mexican government on the basis of 0.5% of gold sales is specific to companies who sell doré with 99% of gold content. Since the project sells concentrates with less than 99% gold content, this royalty is not applicable for Campo Morado Mine.



#### **22.2.5 ROYALTY**

A royalty of 3.0 percent on the NSR value of concentrate sales (before transport costs) is payable to SGM and has been provided for in the cash flow model. Buy-out of the Nyrstar royalty is assumed to take place prior to the cash flow period and is treated as a sunk cost.

#### **22.2.6 SELLING EXPENSES**

In September 2017, Telson entered into an Offtake Agreement with Trafigura Mexico S.A. de C.V. to sell 100% of the lead and zinc concentrates produced at the Campo Morado Mine, from the commencement of commercial production through December 2021. Commercial confidentiality prevents disclosure of the precise terms of that off-take agreement but Micon has reviewed the terms and considers them to be fair and reasonable, and has used those terms as the basis for its evaluation of the project.

Note: at the same time, Trafigura also provided Telson with a credit facility of USD 5.0 million under a separate agreement.

### **22.3 TECHNICAL ASSUMPTIONS**

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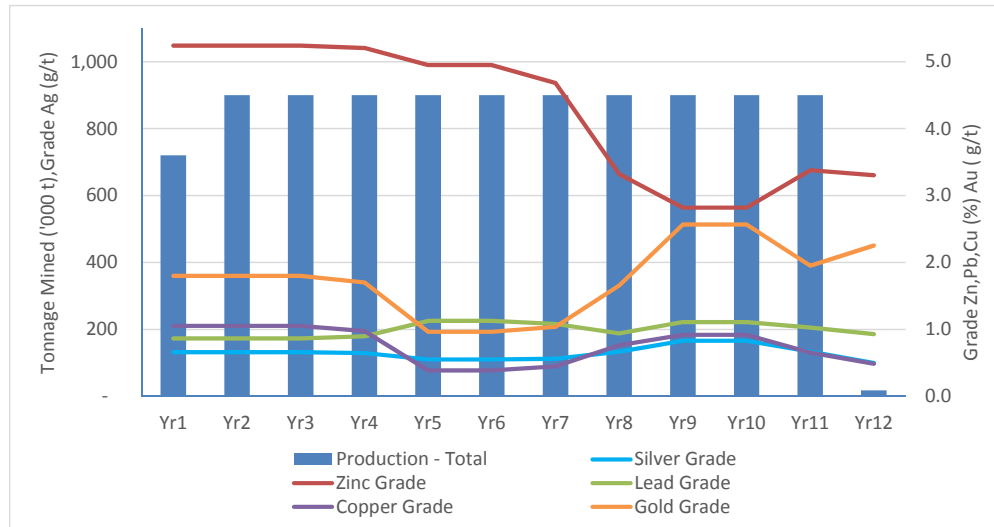
The technical parameters, production forecasts and estimates described elsewhere in this report are reflected in the base case cash flow model. These inputs to the model are summarised below. Except where precious metal quantities are measured in troy ounces (oz), weights and measures used in the study are metric.

#### **22.3.1 MINE PRODUCTION SCHEDULE**

Figure 22-2 shows the annual tonnage of mill-feed material mined from underground, as well as the mill head grades for zinc, lead, copper, silver and gold content.



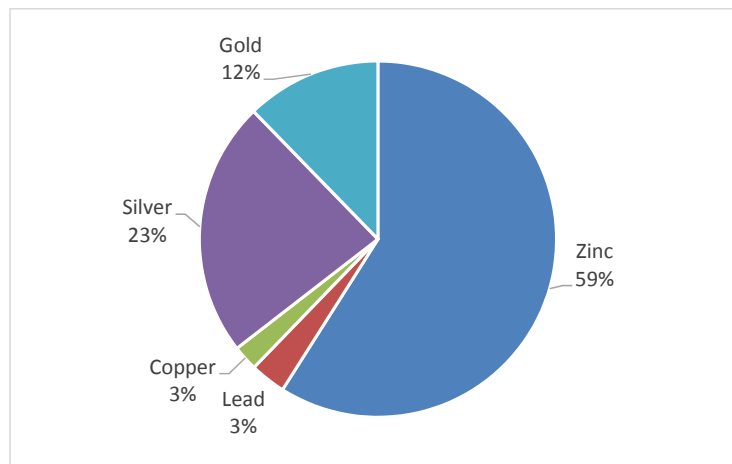
**Figure 22-2 Underground Mine Production**



**22.3.2 SALES REVENUE**

Applying the NSR terms reviewed by Micon results in the distribution of revenue among the payable metals shown in Figure 22-3.

**Figure 22-3 Sales Breakdown by Payable Metal**

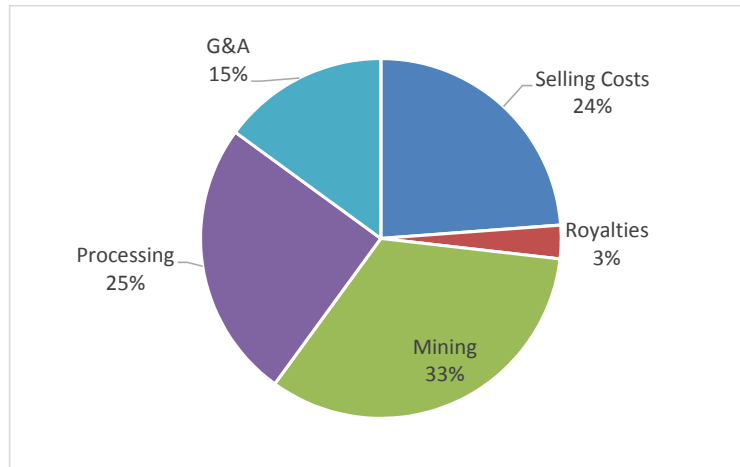


**22.3.3 OPERATING COSTS**

Total cash costs over the LOM period average \$98.74/t milled. A breakdown of these is presented in Figure 22-4.



**Figure 22-4 Operating Costs Breakdown by Area**



#### 22.3.4 CAPITAL COSTS

Since the project has already been constructed, no initial capital costs are provided for in this PEA. As noted above, sustaining capital is estimated at \$72.7 million over the LOM period, mainly for underground development, mill enhancements and expansion of tailings storage capacity.

Working capital has been estimated to include 30 days allowance for product inventory on site, in transit, and accounts receivable on concentrates delivered. Stores provision is for 60 days of consumables and spares inventory, less 30 days accounts payable. On this basis, an average of approximately USD 9 million of working capital is required during the LOM operating period.

## 22.4 BASE CASE CASH FLOW

### 22.4.1 FORWARD-LOOKING INFORMATION

The results of the economic analyses discussed in this section represent forward-looking information as defined under Canadian securities law. The results depend on inputs that are subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those presented here. Information that is forward-looking includes:

- Mineral Resource estimates
- Assumed commodity prices and exchange rates
- The proposed mine production plan
- Projected recovery rates
- Sustaining costs and proposed operating costs



- Assumptions as to closure costs and closure requirements
- Assumptions as to environmental, permitting and social risks.

Additional risks to the forward-looking information include:

- Changes to costs of production from what is assumed
- Unrecognized environmental risks
- Unanticipated reclamation expenses
- Unexpected variations in quantity of mineralized material, grade, or recovery rates
- Geotechnical and hydrogeological considerations during mining differing from what was assumed
- Failure of plant, equipment, or processes to operate as anticipated
- Accidents, labour disputes and other risks of the mining industry.

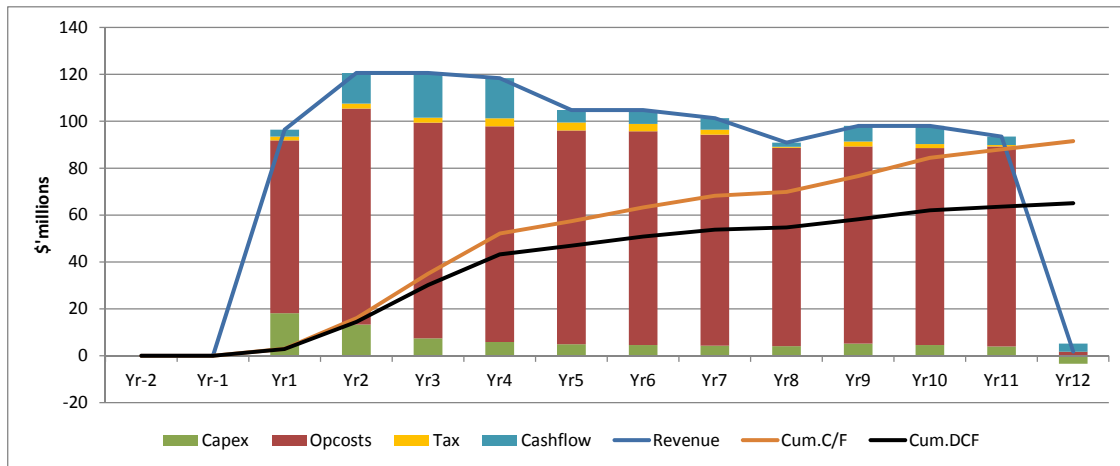
The LOM base case project cash flow is presented in Table 22-2.

**Table 22-2 LOM Base Case Project Cash Flow Forecast**

\$/t milled	LOM TOTAL USD'000
Zinc Revenue	713,849
Lead Revenue	70,526
Copper Revenue	21,084
Silver Revenue	228,914
Gold Revenue	114,471
<b>Gross Revenue</b>	<b>1,148,845</b>
Selling Costs	256,447
Royalties	28,896
Mining	319,190
Processing	240,745
G&A	143,744
<b>Total Cash Operating Costs</b>	<b>961,571</b>
<b>Operating Margin (EBITDA)</b>	<b>187,273</b>
Initial Capital	0
Sustaining Capital	69,500
Reclamation & Closure	3,200
<b>Capital Invested</b>	<b>72,700</b>
<b>Net Cash Flow before tax</b>	<b>114,573</b>
Taxation Payable	23,038
<b>Net Cash Flow after tax</b>	<b>91,535</b>

Annual cash flows are presented in Figure 22-5 and in Table 22-3 (following page).

**Figure 22-5 Annual Cash Flow Forecast**



This preliminary economic assessment is preliminary in nature; it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

**Table 22-3 Annual Cash Flow Forecast**

CASH FLOW PROJECTION	Item	Units	LOM TOTAL	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11	Yr12
REVENUE	Zinc Revenue	USD'000	713,849	63,849	79,812	79,812	79,281	75,423	75,423	71,333	50,584	42,923	42,923	51,480	1,007
	Lead Revenue	USD'000	70,526	4,496	5,620	5,620	5,825	7,317	7,317	7,028	6,095	7,200	7,200	6,688	121
	Copper Revenue	USD'000	21,084	3,189	3,986	3,986	3,314	0	0	0	1,711	2,147	2,147	605	0
	Silver Revenue	USD'000	228,914	16,477	20,597	20,597	20,151	16,917	16,917	17,463	21,860	27,897	27,897	21,823	317
	Gold Revenue	USD'000	114,471	8,433	10,541	10,541	9,789	5,079	5,079	5,528	10,604	17,866	17,866	12,839	303
	Gross Revenue	USD'000	1,148,845	96,444	120,555	120,555	118,360	104,737	104,737	101,352	90,855	98,033	98,033	93,435	1,747
OPERATING COSTS	Selling Costs		228,997	19,168	23,960	23,960	23,913	23,574	23,574	22,459	17,243	16,492	16,492	17,828	337
	Royalties		28,896	2,429	3,036	3,036	2,972	2,572	2,572	2,497	2,304	2,534	2,534	2,367	44
	Mining		319,190	23,600	29,500	29,500	29,500	29,500	29,500	29,500	29,500	29,500	29,500	29,500	590
	Processing		240,745	17,800	22,250	22,250	22,250	22,250	22,250	22,250	22,250	22,250	22,250	22,250	445
	G&A		143,744	10,628	13,285	13,285	13,285	13,285	13,285	13,285	13,285	13,285	13,285	13,285	266
	Total Cash Operating Costs	USD'000	961,571	73,625	92,031	92,031	91,920	91,180	91,180	89,991	84,582	84,061	84,061	85,230	1,682
	Operating Margin (EBITDA)		187,273	22,820	28,525	28,525	26,441	13,557	13,557	11,362	6,274	13,972	13,972	8,205	66
CAPITAL COSTS	Initial Capital		0	0	0	0	0	0	0	0	0	0	0	0	0
	Sustaining Capital		69,500	10,000	10,000	6,000	6,000	6,000	4,500	4,500	4,500	4,500	4,500	4,500	4,500
	Reclamation & Closure		3,200	400	1,400	1,400	0	0	0	0	0	0	0	0	0
	Working Capital Mvmt		0	7,755	1,939	-26	-150	-1,092	0	-209	-412	652	0	-509	-7,947
	Capital Invested	USD'000	72,700	18,155	13,339	7,374	5,850	4,908	4,500	4,291	4,088	5,152	4,500	3,991	-3,447
CASH FLOW	Net Cash Flow before tax	USD'000	114,573	4,664	15,186	21,151	20,591	8,649	9,057	7,071	2,185	8,820	9,472	4,214	3,513
	Taxation Payable	USD'000	23,038	1,711	2,139	2,139	3,496	3,400	3,160	2,155	471	2,097	1,650	615	5
	Net Cash Flow after tax	USD'000	91,535	2,953	13,046	19,012	17,095	5,249	5,897	4,916	1,715	6,724	7,822	3,599	3,508
CUMULATIVE C/F	Cum. Cash Flow before tax			4,664	19,850	41,001	61,592	70,241	79,297	86,368	88,553	97,374	106,846	111,060	114,573
	Cum. Cash Flow after tax			2,953	15,999	35,011	52,106	57,355	63,252	68,167	69,882	76,606	84,428	88,027	91,535
				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DISCOUNTED	Net Cash Flow before tax	USD'000	<b>NPV 81,232</b>	4,488	13,530	17,449	15,729	6,117	5,931	4,288	1,227	4,585	4,559	1,878	1,450
	Net Cash Flow after tax	USD'000	<b>65,038</b>	2,841	11,624	15,684	13,058	3,712	3,862	2,981	963	3,495	3,765	1,604	1,448
CUMUL. DISCOUNTED	Cum DCF before tax			4,488	18,018	35,467	51,196	57,313	63,244	67,532	68,759	73,344	77,904	79,782	81,232
	Cum DCF after tax			2,841	14,465	30,149	43,208	46,920	50,782	53,763	54,726	58,221	61,986	63,590	65,038
				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Unit costs for the base case are presented on a zinc equivalent basis in Table 22-4.

**Table 22-4 Unit cost estimate on Zinc Equivalent Basis**

	LOM total (\$'000)	\$/t milled	Gross Rev. (%)	Margin (%)	\$/lb ZnEq
Mining	319,190	32.78	28%		0.35
Mill/Concentrator	240,745	24.72	21%		0.27
G&A	143,744	14.76	13%		0.16
<b>Direct site costs</b>	<b>703,679</b>	<b>72.26</b>	<b>61%</b>	<b>39%</b>	<b>0.78</b>
Transport, TC/RC	228,997	23.52	20%		0.25
<b>Cash Operating Costs</b>	<b>932,676</b>	<b>95.78</b>	<b>81%</b>	<b>19%</b>	<b>1.03</b>
Royalties	28,896	2.97	3%		0.03
<b>Total Cash Costs</b>	<b>961,571</b>	<b>98.74</b>	<b>84%</b>	<b>16%</b>	<b>1.06</b>
Capital Expenditure	72,700	7.47	6%		0.08
<b>Total Production Costs</b>	<b>1,034,271</b>	<b>106.21</b>	<b>90%</b>	<b>10%</b>	<b>1.15</b>

## 22.5 DISCOUNTED CASH FLOW EVALUATION

At an annual discount rate of 8.0%, the discounted cash flow evaluates to a net present value (NPV) of USD 65 million.

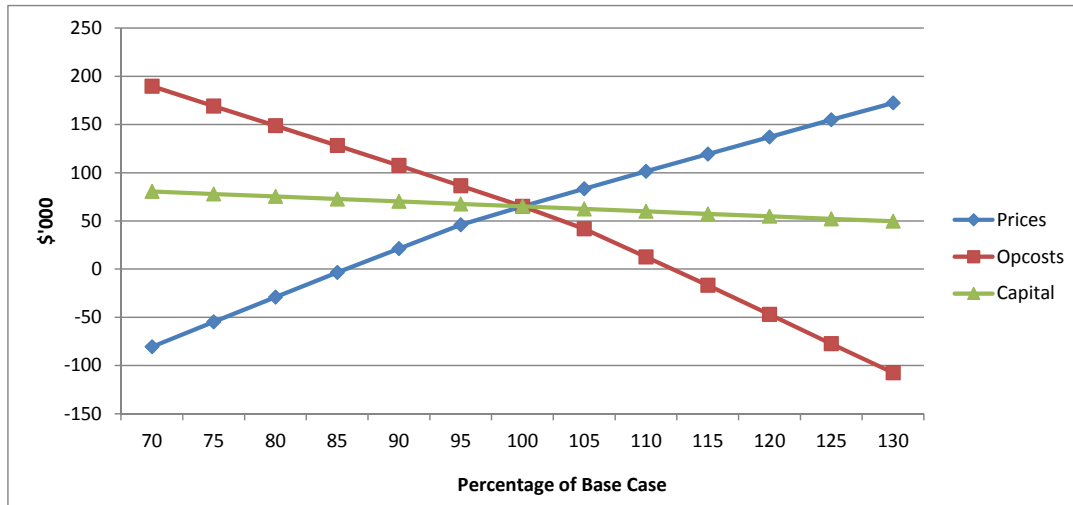
Owing to the absence of pre-production capital expenditures in the forecast period, no internal rate of return (IRR) or payback period can be determined.

## 22.6 SENSITIVITY STUDY

The sensitivity of project returns to changes in all revenue factors (including grades, recoveries, and metal prices) and also to capital and operating costs was tested over a range of 30% above and below base case values. See Figure 22-6, showing net present values on an after-tax basis, with an annual discount rate of 8%.

The chart suggests that the project is almost equally sensitive to revenue drivers and operating costs with NPV reduced to near-zero with an adverse change of 14% and 12% in each, respectively. The project is least sensitive to changes in capital cost, which is consistent with the relatively minor amounts of capital in the cash flow forecast.

Figure 22-6 NPV Sensitivity Diagram



## 22.7 CONCLUSION

Micon concludes that this study demonstrates the potential economic viability of the project within the range of accuracy of the estimated capital and operating costs, production forecast, and price assumptions.

## 23.0 ADJACENT PROPERTIES

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The Campo Morado Project is not subject to the influence of nearby properties. However, there are a number of mining projects in the region with similar styles of mineralization and deposit types.

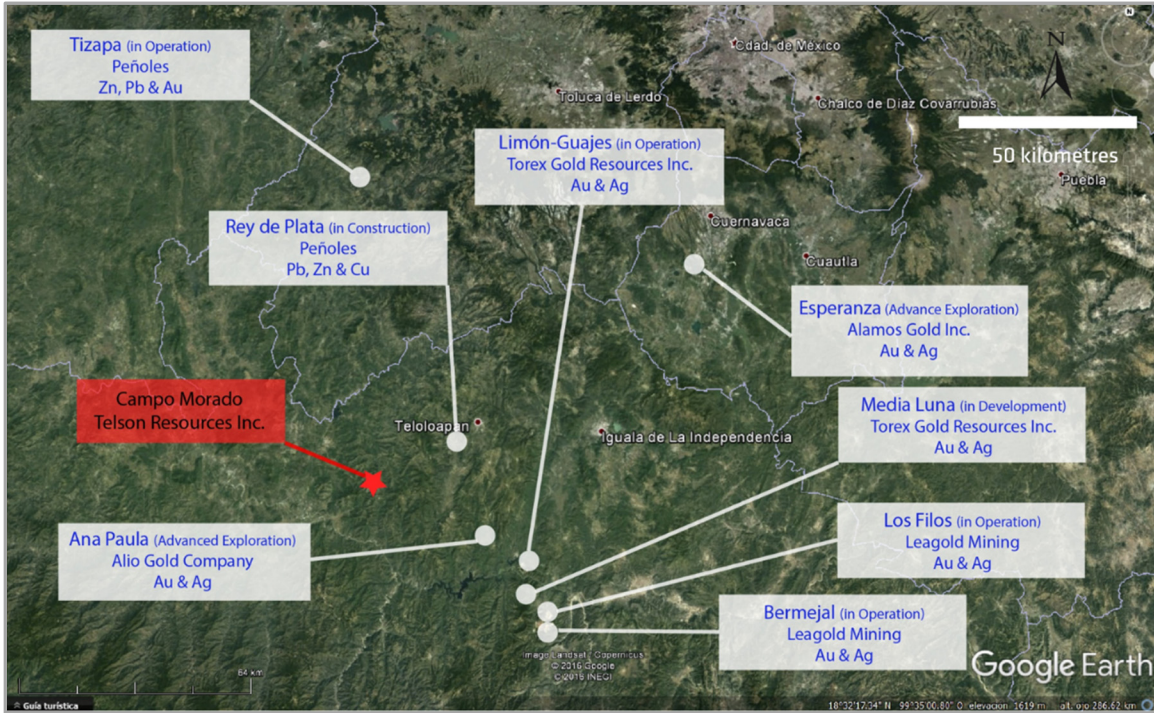
Figure 23-1 shows the locations of advanced mineral development and mining properties in the Campo Morado region and the commodities associated with them.

The Rey de Plata project of Industrias Peñoles, SAB de CV, (Peñoles), 40 kilometres to the northeast of Campo Morado in Guerrero State is an underground lead, zinc, copper polymetallic mine currently under construction. It is a Kuroko-style polymetallic volcanogenic massive sulphide deposit. A mill with the capacity to process 1.3 million tonnes of ore per year to produce lead, zinc and copper concentrates is planned at Rey de Plata. It is anticipated that construction will conclude in December 2018.

The Tizapa Mine of Peñoles (51%), Sumitomo Corporation (10%) and Dowa Mining Corporation (39%) in the State of Mexico 85 km north of Campo Morado has been in operation since 1994. It produces lead, zinc and copper concentrates with a capacity of 800,000 tonnes per year of ore. It is a polymetallic volcanogenic massive sulfide and manto deposit with a high zinc grade and important gold, silver and lead content.

The information on adjacent properties is derived from the respective company websites. The QPs did not independently verify the information on the adjacent properties and this information is not necessarily indicative of the mineralization on the Campo Morado property that is the subject of this Technical Report.

**Figure 23-1 Adjacent Properties**







## 24.0 OTHER RELEVANT DATA AND INFORMATION

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The Campo Morado Mine was shut down for almost three years and in care and maintenance. Telson has recently re-hired a mining and mineral processing team. A number of technical professionals and employees have been cleaning, servicing and repairing, where necessary, mine and mill components and rehabilitating underground access to the planned mining areas.

Telson restarted operations for production at the Mine in October 2017 and began processing preproduction development material from their renewed underground mining program at an approximate rate of 1,400 tonnes per day. About 29,500 tonnes of coarse material was delivered to the mill site crushing patio and at least 9,000 tonnes were placed on the crushed material stockpile by October 23, 2017. The material mined by Telson since taking over the Campo Morado Project has not been depleted from the 2017 mineral resource estimate.

Prior to the effective date of this report, Telson metallurgists began to conduct numerous metallurgical tests at the mine site laboratory from material targeted for mining in the initial months of production. Testing was done to determine if, initially removing carbon organic matter contained within the mined material as the first step, plus the addition of new types of reagents to the flotation process, would lead to an improvement in recoveries. To that end, an initial carbon flotation circuit and new reagents have been added to the Campo Morado processing plant circuit now in operation. These recent modifications to the processing circuit are in the process of being fully tested. The results of this testwork will be discussed in future reports.

## 25.0 INTERPRETATION AND CONCLUSIONS

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### 25.1 INTRODUCTION

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Telson purchased the Campo Morado mine that was on a care and maintenance schedule from Nyrstar in the summer of 2017. After careful consideration, the Board of Telson decided to authorize the reopening of the Campo Morado mine and initiate pre-production activities.

This Technical Report has been primarily issued to update the mineral resource estimate in accordance with the current May 10, 2014, CIM Definition Standards for Mineral Resources and Mineral Reserves, and to use those estimates as the basis of a Preliminary Economic Assessment of the potential viability of Campo Morado mine as Telson continues to bring the mine back into production and conduct further studies to optimize the processing and mining facilities.

This report also summarizes the historical exploration and development programs completed by Farallon and Nyrstar as well as the work completed by Telson to take the mine off its care and maintenance status and back into production. Telson is fully committed to conducting further studies such that the Campo Morado mine can achieve an optimized production schedule under its ownership.

### 25.2 GEOLOGY AND MINERAL RESOURCE ESTIMATE

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The Campo Morado Project hosts several important polymetallic massive sulphide deposits containing zinc, copper, silver, gold and lead mineralization where both historical and recent mining and mineral processing activity has taken place. The exploration, drilling and underground development programs completed thus far are appropriate to the type of the deposit. The exploration, drilling, geological modelling and research work supports the interpreted genesis of the mineralization.

It is the opinion TCL that the drill database for the Campo Morado deposits is reliable and sufficient to support the primary purpose of this technical report which has been to update the mineral resource estimates and for their inclusion in the PEA. Estimations of mineral resources for the Campo Morado Project conform to industry accepted practices.

Factors that may affect the Mineral Resource estimate include: changes to the geological and deposit models, recovery of missing drill hole assay information, infill drilling and underground development to convert mineral resources to a higher classification and drilling to test for extensions to known resources. Additional factors which may affect the cut-offs used to constrain the estimates are commodity prices, changes in the metallurgical processing / metallurgical recovery assumptions used to estimate zinc equivalent, updated surveys of the existing underground excavations and updating of the underground excavation models to account for material mined by Telson starting in October 2017. The assay information that appears to be missing from a number of drill holes that intersect modeled mineralized bodies,



was included at zero grade for these intervals for the purposes of the 2017 mineral resource estimate. Further investigations should be completed to confirm if this information has been permanently lost or still exists and can be restored from the archives of the previous Project operator Nyrstar. It should be noted that all factors pose potential risks and opportunities, of greater or lesser degree, to the current mineral resource.

### **25.3 PRELIMINARY ECONOMIC ASSESSMENT**

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The results of the economic analyses discussed in this section represent forward-looking information as defined under Canadian securities law. The results depend on inputs that are subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those presented here.

This preliminary economic assessment is preliminary in nature; it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.

At an annual discount rate of 8.0%, the discounted cash flow results in an after tax net present value (NPV) of USD 65 million. Owing to the absence of pre-production capital expenditures in the forecast period, no internal rate of return (IRR) or payback period can be determined.

The project is almost equally sensitive to revenue drivers and operating costs with NPV reduced to near-zero with an adverse change of 14% and 12% in each, respectively. The project is least sensitive to changes in capital cost, which is consistent with the relatively minor amounts of capital in the cash flow forecast.

Micon concludes that this study assesses the potential viability of the project within the range of accuracy of the estimated capital and operating costs, production forecast, and price assumptions.

## 25.4 RISKS AND OPPORTUNITIES

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### 25.4.1 INTRODUCTION

A number of risks and opportunities were identified by Titley Consulting and Micon and were discussed in the Report in the relevant discipline areas.

### 25.4.2 GEOLOGY, EXPLORATION AND MINERAL RESOURCES

#### *Opportunities*

- There are a number of exploration targets on the Campo Morado property that represent an excellent upside opportunity. They could potentially add to the resource base with further work.
- Several drill holes with missing assay that have been assigned zero grade. If this information is found, it will likely have a positive impact on the grade in the local area of these drill holes.
- The mining sequence has been prepared on an area-by-area basis and so there may be an opportunity to improve the production grade profile in a more detailed plan.

#### *Risks*

- A number of the Mineral Resource assumptions for reasonable prospects of eventual economic extraction at the Reforma, Naranjo, El Largo and El Rey deposits are based on analogues to G-9, including metallurgical recoveries and mining methods. Actual data collected from the deposits may vary from these assumptions.
- There is a risk some of the Measured Mineral Resources at Reforma, Naranjo and El Rey will not have the appropriate drill support until grade control drilling is completed.

### 25.4.3 MINE PLAN

#### *Risks*

- The tonnages and grade for the potentially recoverable pillars at G9 are based on the assumption that a practical, economically feasible method can be developed to mine them.
- Evaluation is at a PEA level only. Mining engineering may reveal planning constraints not recognised in this study.

### 25.4.4 METALLURGY, PROCESS AND TAILINGS

#### *Opportunities*

- Subject to further testwork, leach recovery of copper, gold and silver from reprocessing existing tailings may be possible
- Equipment for finer grinding is on site but not yet installed



- The Campo Morado tailings have a high precious metals content that may, in the future, be reprocessed if an economically viable method for precious metals recovery is developed
- Unit cost savings might be possible in some areas at the planned higher rates of plant throughput

#### *Risks*

- Expansion of storage capacity is required to accommodate material in the PEA plan.
- Achieving planned plant throughput and recovery into concentrate may increase operating costs.

#### 25.4.5 INFRASTRUCTURE

##### *Opportunities*

- Telson has all of the infrastructure currently necessary to operate the Campo Morado Project.

#### 25.4.6 ENVIRONMENTAL, PERMITTING AND SOCIAL

##### *Opportunities*

- Telson has all the current environmental permits to operate.
- The communities and various groups in the area appear to support the resumption of mining activities
- Security is good at the present time, with a small military component on site, and Telson has the support of all social groups or factions in the area. Security should continue to improve as Telson continues to demonstrate a longer term commitment to the area

#### *Risks*

- Environmental laws may be tightened and become more stringent as a result of Mexico's involvement in the Paris Agreement, NAFTA and various other Free Trade agreements.
- Security may become unstable within the state or local area.

#### 25.4.7 FINANCIAL ANALYSIS

##### *Risks*

- Project returns are sensitive to metal prices and any change in NSR terms.
- Changes in the fiscal regime may affect the cashflow estimates.

## 26.0 RECOMMENDATIONS

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### 26.1 INTRODUCTION

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Telson's Board has authorized the re-opening of the Campo Morado mine in the Mexican State of Guerrero after purchasing it from Nyrstar. As part of its reopening of the Mine, it has conducted an updated mineral resource estimate following the latest CIM Definition Standards for Mineral Resource estimates.

### 26.2 METALLURGICAL TESTWORK

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As part of its reopening of the Campo Morado mine, Telson is planning to spend approximately USD 350,000 to conduct further studies to optimize both the metallurgical recoveries within the processing facility and the planned mining activities and sequence at the mine. This work will also provide Telson with a better understanding of the economic risks and opportunities as it brings the Campo Morado back into full production.

### 26.3 MINERAL RESOURCES

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Additional information on the distribution of iron and arsenic is required for mine planning and mineral processing. It is recommended that exploratory data analysis on iron and arsenic be conducted and the grades of iron and arsenic be estimated into the G9 and G9 del Oro block models for each of the mineralized zones and sub-zones.

- Statistical review and estimation of Fe and As USD 10,000

### 26.4 DEFINITION DRILLING FOR MINING

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Additional definition drilling for further geotechnical work and to convert any inferred mineral resources to higher confidence categories within the various mineralized zones to optimize any mining plans for these areas both prior to and during mining. A provisional budget of USD 200,000 is suggested for the first 12 months of this program.

### 26.5 ENVIRONMENTAL

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Telson starts immediate work on the detailed plans to raise the tailings facility with its Mexican environmental tailings consultants now that it is in the process of restarting the mining and processing at the Campo Morado Project and plans to increase the processing throughput to 2,500 tpd. As part of this process, Telson will need to update the water management protocols for the Campo Morado project to comply with its zero discharge requirements and to ensure

that adequate water stored to cover the processing and mining requirements during the dry season. A budget of USD 300,000 should be adequate to begin working on the detailed tailings plans and water management protocols.

## **26.6 PRELIMINARY FEASIBILITY STUDY**

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Telson should consider the preparation of a Preliminary Feasibility Study in order to quantify more precisely the investment required to bring the Campo Morado property to full production and identify a mineral reserve on the property. A budget of USD 500,000 is provisionally estimated for this work.

## **26.7 BUDGET SUMMARY**

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Metallurgical Testwork	USD 350,000
Statistical review and estimation of Fe and As	USD 10,000
Definition drilling program (12 months)	USD 200,000
Environmental (tailings and water management)	USD 300,000
Preliminary Feasibility Study	USD 500,000
<b>Total estimate</b>	<b>USD 1,360,000</b>

## 27.0 DATE AND SIGNATURE PAGE

---

### **Titley Consulting Ltd.**

*Eric Titley {signed and sealed as of the report date}*

Eric Titley, BSc, PGeo,

Report Date: March 31, 2018

Titley Consulting Ltd.

Effective Date: March 30, 2018

### **Micon International Limited**

*William J. Lewis {signed and sealed as of the report date}*

William J. Lewis, BSc, PGeo,

Report Date: March 31, 2018

Senior Geologist and Director,

Effective Date: March 30, 2018

*Christopher Jacobs {signed and sealed as of the report date}*

Christopher Jacobs, MBA, CEng, MIMMM,

Report Date: March 31, 2018

Vice President and Senior Consultant (Mineral Economics), Effective Date: March 30, 2018





*James W.G. Turner (signed and sealed as of the report date)*

James W.G. Turner BSc (Hons) ACSM MSc MCSM MIMMM CEng,  
2018

Report Date: March 31,

Senior Mineral Processing Engineer,

Effective Date: March 30, 2018

*Bruce Pilcher (signed and sealed as of the report date)*

Eur Ing Bruce Pilcher, CEng, FIMMM, FAusIMM (CP), Report Date: March 31, 2018

Senior Mining Engineer,

Effective Date: March 30, 2018



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## 29.0 CERTIFICATES OF QUALIFIED PERSONS

---

I, Eric Titley, PGeo, am a Consulting Geologist and President of Titley Consulting Ltd.

This certificate applies to the technical report titled "Campo Morado Project, Guerrero State, Mexico, Technical Report on Preliminary Economic Assessment" that has an effective date of March 30, 2018 (the "technical report").

I am a Professional Geoscientist registered with Engineers and Geoscientists British Columbia (EGBC) in the province of British Columbia, Canada. I graduated from the University of Waterloo, Waterloo, Ontario, Canada with a Bachelor of Science degree in Earth Sciences (geography minor) in 1980.

I have practiced my profession for 35 years on Projects in North America, Africa, Asia, South America, Europe and Australia. I have been directly involved in providing technical assistance to mineral exploration, mineral development and mining projects, in the development of resource models and in resource estimation on mineral projects.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101).

I am a co-author of the report entitled "Campo Morado Multi-Metal Project Mineral Resource Estimate and Preliminary Economic Assessment" with an effective date of March 30, 2018, (the "Technical Report").

I visited the Campo Morado Project on August 24 and 25, 2017.

I am responsible for Sections 1.1, 1.3 to 1.8, 1.19, 1.20, 1.21, 1.22.1, 1.22.3, 2.1, 2.2, 2.3, 2.4.1, 2.5, 3, 4.1 to 4.3, 5, 6, 7, 8, 9, 10, 11, 12, 14, 23, 24, 25.1, 25.2, 25.4, 25.4.1, 25.4.2, 26.1, 26.3, 28 and 30 of the technical report.

I am independent of Telson Mining Corporation as independence is described under section 1.5 of National Instrument 43-101.

I provided technical assistance to the project operator Farallon Resources Ltd. and Farallon Mining Ltd. (collectively Farallon) between 1998 and 2010 as an employee of Hunter Dickinson Inc. and Hunter Dickinson Services Inc. (collectively HDSI). I visited Campo Morado three times during this period. HDSI provided technical and management services to Farallon. I have had no involvement with the Campo Morado Project since 2010, until the start of this Preliminary Economic Assessment for Telson.

I have read National Instrument 43-101. The sections of the Technical Report that I am responsible for have been prepared in compliance with that Instrument.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report that I am responsible for preparing contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 31st day of March 2018,

"Signed and sealed"

Eric Titley, P.Geol.

Titley Consulting Ltd.,  
3550 West 13<sup>th</sup> Avenue  
Vancouver, British Columbia, Canada, V6R 2S3



### CERTIFICATE OF QUALIFIED PERSON

**William J. Lewis**

As the co-author of this report for Telson Mining Corporation entitled "Campo Morado Project, Guerrero State, Mexico, Technical Report on Preliminary Economic Assessment" dated March 31, 2018 with an effective date of March 30, 2018, I, William J. Lewis do hereby certify that:

1. I am employed by, and carried out this assignment for, Micon International Limited, Suite 900, 390 Bay Street, Toronto, Ontario M5H 2Y2, tel. (416) 362-5135, fax (416) 362-5763, e-mail [wlewis@micon-international.com](mailto:wlewis@micon-international.com);
2. This certificate applies to the Technical Report titled "Campo Morado Project, Guerrero State, Mexico, Technical Report on Preliminary Economic Assessment" dated March 31, 2018 with an effective date of March 30, 2018;
3. I hold the following academic qualifications:

B.Sc. (Geology)	University of British Columbia	1985
-----------------	--------------------------------	------
4. I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of Manitoba (membership # 20480); as well, I am a member in good standing of several other technical associations and societies, including:
  - Association of Professional Engineers and Geoscientists of British Columbia (Membership # 20333)
  - Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories (Membership # 1450)
  - Professional Association of Geoscientists of Ontario (Membership # 1522)
  - The Canadian Institute of Mining, Metallurgy and Petroleum (Member # 94758)
5. I have worked as a geologist in the minerals industry for 33 years;
6. I am familiar with NI 43-101 and, by reason of education, experience and professional registration, I fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 4 years as an exploration geologist looking for gold and base metal deposits, more than 11 years as a mine geologist in underground mines and more than 15 years as a surficial geologist and consulting geologist on precious and base metals and industrial minerals;
7. I have read NI 43-101 and this Technical Report has been prepared in compliance with the instrument;
8. I visited the Campo Morado Project between November 17 and 19, 2017;
9. I have not worked on or been associated with the Campo Morado Project prior to this Technical Report;
10. I am independent Telson Mining Corporation and its subsidiaries according to the definition described in NI 43-101 and the Companion Policy 43-101 CP;
11. I am responsible for Sections 1.15.1, 1.15.4, 1.15.5, 1.15.6, 1.16, 1.22.5, 1.22.6, 2.4.2, 4.4, 12.4, 19, 20, 25.4.6, 26.5 and 26.6 of this Technical Report.
12. As of the date of this certificate, 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 this technical report not misleading;

Report Dated this 31st day of March, 2018 with an effective date of March 30, 2018.

*"William J. Lewis" (signed and sealed as of the report date)*

William J. Lewis, B.Sc., P.Geo.



**CERTIFICATE OF QUALIFIED PERSON**  
**Christopher Jacobs**

As the co-author of this report for Telson Mining Corporation entitled "Campo Morado Project, Guerrero State, Mexico, Technical Report on Preliminary Economic Assessment" dated March 31, 2018 with an effective date of March 30, 2018, I, Christopher Jacobs, do hereby certify that:

1. I am employed by, and carried out this assignment for, Micon International Limited, Suite 900 - 390 Bay Street, Toronto, Ontario M5H 2Y2. tel. (416) 362-5135, email:[cjacobs@micon-international.com](mailto:cjacobs@micon-international.com).
2. I hold the following academic qualifications:
  - B.Sc. (Hons) Geochemistry, University of Reading, 1980;
  - M.B.A., Gordon Institute of Business Science, University of Pretoria, 2004.
3. I am a Chartered Engineer registered with the Engineering Council of the U.K. (registration number 369178).
4. Also, I am a professional member in good standing of: The Institute of Materials, Minerals and Mining; and The Canadian Institute of Mining, Metallurgy and Petroleum (Member).
5. I have worked in the minerals industry for more than 35 years; my work experience includes 10 years as an exploration and mining geologist on gold, platinum, copper/nickel and chromite deposits; 10 years as a technical/operations manager in both open-pit and underground mines; 3 years as strategic (mine) planning manager and the remainder as an independent consultant when I have worked on a variety of deposits including cobalt, copper and gold.
6. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101.
7. I have not visited the Property that is the subject of this report.
8. I am responsible for Sections 1.2, 1.17, 1.18, 1.22.7, 21, 22, 25.3, 25.4.7 and 26.7 of this Technical Report.
9. I am independent of Telson Mining Corporation and related entities, as defined in Section 1.5 of NI 43-101.
10. I have had no previous involvement with the Property.
11. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.
12. As of the date of this certificate to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this March 31, 2018

*"Christopher Jacobs" (signed and sealed as of the date of the report)*

Christopher Jacobs, CEng, MIMMM





## CERTIFICATE OF QUALIFIED PERSON

**James W.G. Turner**

As the co-author of this report for Telson Mining Corporation entitled “Campo Morado Project, Guerrero State, Mexico, Technical Report on Preliminary Economic Assessment” dated March 31, 2018 with an effective date of March 30, 2018, I, James W.G. Turner do hereby certify that:

1. I am employed by, and carried out this assignment for, Micon International Co Limited, Tremough Innovation Centre, Penryn Campus, Penryn, Cornwall TR10 9TA, tel. +44 (0) 1326-567338, e-mail [jturner@micon-international.co.uk](mailto:jturner@micon-international.co.uk).
2. This certificate applies to the Technical Report titled “Campo Morado Project, Guerrero State, Mexico, Technical Report on Preliminary Economic Assessment” dated March 31, 2018 with an effective date of March 31, 2018;
3. I am a graduate of the Camborne School of Mines with a Bachelor of Science (Honours) in Mineral Processing Technology (1984) and a Master of Science in Minerals Engineering (1993).
4. I am a member in good standing of the Institute of Materials, Minerals and Mining (IOM3) (#46967) and a registered Chartered Engineer (CEng) with the Engineering Council UK (#46967).
5. I have worked as a mineral processing engineer in the minerals industry for 33 years;
6. I am familiar with NI 43-101 and, by reason of education, experience and professional registration, I fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes approximately 21 years working abroad on site-based operations up to Process Manager level, mostly on gold operations but also including base metals, and 11 years working in the UK mining industry, including 6 years specifically working for Consultancy companies.
7. I have read NI 43-101 and this Technical Report has been prepared in compliance with the instrument;
8. I visited the Campo Morado Project between November 17 and 19, 2017;
9. I have not worked on or been associated with the Campo Morado Project prior to this Technical Report;
10. I am independent Telson Mining Corporation and its subsidiaries according to the definition described in NI 43-101 and the Companion Policy 43-101 CP;
11. I am responsible for Sections 1.7, 1.13, 1.14, 1.15.2, 1.15.3, 1.22.2, 13, 17, 18, 25.4.4, 25.4.5 and 26.2 of this Technical Report.
12. As of the date of this certificate, 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 this technical report not misleading;

Report Dated this 31st day of March, 2018 with an effective date of March 30, 2018.

*“James W.G. Turner” {signed and sealed as of the report date}*

James W.G. Turner BSc (Hons) ACSM MSc MCSM MIMMM CEng.

## CERTIFICATE OF QUALIFIED PERSON

### Eur Ing Bruce Pilcher

As the co-author of this report for Telson Mining Corporation entitled “Campo Morado Project, Guerrero State, Mexico, Technical Report on Preliminary Economic Assessment” dated March 31, 2018 with an effective date of March 30, 2018, I, Bruce Pilcher do hereby certify that:

1. I am employed by, and carried out this assignment for  
Micon International Co Ltd  
Tremough Innovation Centre, Penryn Campus, Penryn, TR10 9TA Cornwall, UK  
tel.: +44 1326 567338  
e-mail: [bpilcher@micon-international.co.uk](mailto:bpilcher@micon-international.co.uk)
2. This certificate applies to the Technical Report titled “Campo Morado Project, Guerrero State, Mexico, Technical Report on Preliminary Economic Assessment” dated March 31, 2018 with an effective date of March 30, 2018;
3. I am a graduate of the University of Sydney with a Bachelor of Engineering (Mining Engineering, 1984).
4. I am a fellow in good standing of the Institute of Materials, Minerals and Mining (IOM3)(#50141), a fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) (#101906) and am a registered Chartered Engineer (C Eng) with the Engineering Council UK (#526806), Chartered Professional (Mining) with the AusIMM (#101906) and European Engineer (Eur Ing) with the European Federation of National Engineering Associations (FEANI) (#30087).
5. I have worked as a mining engineer in the minerals industry for 30 years;
6. I am familiar with NI 43-101 and, by reason of education, experience and professional registration, I fulfill the requirements of a Qualified Person as defined in NI 43-101. My relevant experience of over 30 years in both underground and surface mining operations as a mining engineer in the mining industry in Australia, Africa, South America, UK, Europe and the former Soviet Union countries.
7. I have read NI 43-101 and this Technical Report has been prepared in compliance with the instrument;
8. I visited the Campo Morado Project between November 17 and 19, 2017;
9. I have not worked on or been associated with the Campo Morado Project prior to this Technical Report;
10. I am independent Telson Mining Corporation and its subsidiaries according to the definition described in NI 43-101 and the Companion Policy 43-101 CP;
11. I am responsible for Sections 1.9 to 1.12, 1.22.4, 15, 16, 25.4.3 and 26.4 of this Technical Report.
12. As of the date of this certificate, 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 this technical report not misleading;

Report Dated this 31st day of March, 2018 with an effective date of March 30, 2018.

*“Bruce Pilcher” {signed and sealed as of the report date}*

Eur Ing Bruce Pilcher C Eng FIMMM FAusIMM CP(Min)



## 30.0 APPENDIX - UNIT MEASURES AND ABBREVIATIONS

Abbreviation	Unit or Description
a	Annum (year)
AAS	Atomic absorption spectroscopy (geochemical analysis)
AES	Atomic emission spectroscopy (geochemical analysis)
Ag	Silver
amsl	Above mean sea level
ANFO	Ammonium nitrate, fuel oil blasting agent
Au	Gold
Aut	Autorización (Authorization)
BC	British Columbia, Canada
cm	Centimetre
cm <sup>2</sup>	Square centimetre
cm <sup>3</sup>	Cubic centimetre
CEng	Chartered Engineer registered with Engineering Council of Britain
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CRF	Cemented rockfill (mine backfill)
CRM	Consejo de Recursos de Minerales (Mexican Mineral Resources Council)
CAD	Canadian dollars
Cu	Copper
°	Degree
°C	Degrees Celsius
d	Day
D1	Deformation event number one (structural geology)
DGIRA	Dirección General de Impacto y Riesgo Ambiental (Environmental Impact and Risk Branch of SEMARNAT)
DGM	Dirección General de Minas
Abbreviation	Unit or Description



EGBC	Engineers and Geoscientists British Columbia
ERA	Evaluación del riesgo ambiental (Environmental risk assessment)
Eur Ing	European Engineer, European Federation of National Engineering Associations (FEANI)
FA	Fire assay (precious metal geochemical analysis)
FAusIMM (CP)	Fellow of the Australasian Institute of Mining and Metallurgy (Chartered Professional)
Fe	Iron
FIMMM	Fellow of the Institute of Materials, Minerals and Mining (IOM3)
g	Gram
g/t	Grams per tonne
>	Greater than
H	Hour
Ha	Hectare (10,000 m <sup>2</sup> )
HPC	Hazard Potential Classification
IP	Induced Polarization (geophysical survey)
ICP	Inductively coupled plasma (geochemical analysis)
IDW	Inversed distance weighted
K	Kilo (thousand)
K80	80 percent passing (particle size screen)
Kg	Kilogram
Km	Kilometre
km <sup>2</sup>	Square kilometre
kV	Kilovolt, a measure of 1,000 volts of electric potential difference
kW	Kilowatt, a measure of 1,000 watts of electrical power
kWh	Kilowatt hour, a composite unit of energy equivalent to one kilowatt (1 kW) of power sustained for one hour
lb	Pound (weight)
<b>Abbreviation</b>	<b>Unit or Description</b>
<	Less than



L	Litre
LHD or LHDs	Load haul dump (mining equipment)
m	Metre
m <sup>2</sup>	Square metre
m <sup>3</sup>	Cubic metre
M	Million
Ma	Millions of years ago
MIA	Manifestación de Impacto Ambiental (mining permit)
µm	Micron
mg	Milligram
Micon	Micon International Limited or Micon International Co Limited
MIMMM	Professional Member of the Institute of Materials, Minerals and Mining (IOM3)
mm	Millimetre
'	Minute (plane angle)
'	Minute (plane angle)
min	Minute (time)
mo	Month
MLC or MLCs	Mine load centre used to transform high voltage input to low voltage outputs
MPa	Megapascal unit of pressure
NI	National Instrument (43-101)
NQ	Drill core size (47.6 millimetre diameter)
NSR	Net smelter return
OTCBB	Over-the-counter bulletin board (electronic trading service United States)
oz	Troy ounce
±	Plus or minus (above or below)
Pb	Lead
<b>Abbreviation</b>	<b>Unit or Description</b>
PEA	Preliminary Economic Assessment



PEO	Professional Engineers Ontario
PEng	Professional Engineer
%	Percent
PFS	Pre-Feasibility Study
PGeo	Professional Geoscientist
PLC or PLCs	Programmable logic controller
PPA	Programa de prevención de accidentes (accident prevention program)
ppb	Parts per billion
ppm	Parts per million
psi	Pounds per square inch, a unit of pressure
QAQC	Quality assurance / quality control
QP	Qualified Person (defined by NI 43-101)
ROFR	Right of first refusal
"	Second (plane angle)
s	Second (time)
SEDEX	Sedimentary exhalative (mineral deposit type)
SEMARNAT	Secretaria de Medio Ambiente y Recursos Naturales (Mexican Secretariat of Environmental and Natural Resources)
SGM	Servicio Geológico Mexicano, (Mexican Geological Service)
SMD	Stirred media detritor (process plant equipment)
TCL	Titley Consulting Ltd.
3D	Three dimensional
t	Tonne (1,000 kg)
t/d	Tonnes per day
TSF	Tailings storage facility
TSN	Telson Mining Corporation (TSXV trading symbol)
<b>Abbreviation</b>	<b>Unit or Description</b>
TSXV	TSX Venture Exchange

USD	United States dollars
UTEM	University of Toronto electromagnetic system (geophysics)
VMS	Volcanogenic massive sulphide (mineral deposit type)
VnetPC	Mine ventilation computer software
VTM	Vertimill® grinding mill (process plant equipment)
Zn	Zinc
ZnEq	Zinc equivalent