ASX Announcement

23 March 2020

Fast Facts

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Monte Azul Zinc Project Update

- Odin Metals Limited (ASX: ODM) ("Odin" or "Company") confirms it has executed its option to acquire 100% of the Monte Azul Zinc Project[1] in Brazil ("Monte Azul" or the "Project") from Vale S.A. as agreed by transferring the initial payment of $US500,000 earlier this month to Vale.
- Drilling at Monte Azul is anticipated to commence as soon as practical after completion of tranche 2 of the A$4.25m placement to be approved by shareholders on the 9th of April 2020.
- First phase of drilling of approximately 3,000m will target the thicker and higher-grade central lens of the deposit to establish a JORC (2012) compliant resource estimate that can form the basis for initial study works (Figure 1)
- Drilling aims to increase confidence and potentially extend the higher-grade zone, that includes intercepts from previous drilling of:
  - 13.92m at 10.39% Zn, 2.13% Pb from 262.50m in FD009[2,3]
  - 10.34m at 6.09% Zn, 0.72% Pb from 328.24m in FD013[2,3]
- Mineralisation at Monte Azul remains open in all directions
- Following drilling at the central lens, Odin will target the northern lens and test extensions to mineralisation down plunge (Figure 1)
- Odin is concurrently progressing low cost exploration to advance and refine priority regional exploration targets at Alto Alegre and along the 40km long belt that can be drill tested following the initial drill program at Monte Azul
- Odin is currently undertaking metallurgical and mineralogical test work to investigate the viability of producing a high-grade pre-concentrate via ore-sorting for sale to a nearby flotation plant that could provide a low capital cost production opportunity.

Monte Azul

Odin has executed its option to acquire 100% of the Monte Azul located in the established mining state of Minas Gerais, Brazil. As per the terms of the acquisition agreement Odin has made the first payment of US$500,000 to Vale S.A.

Drilling at Monte Azul is anticipated to commence as soon as practical after the settlement of tranche 2 of the recently announced A$4.25m placement to be approved by shareholders on the 9th of April 2020. The first phase of drilling of approximately 3,000m will target the thicker and higher-grade core of the deposit to establish a JORC (2012) compliant resource that can form the basis for initial study works (Figure 1).

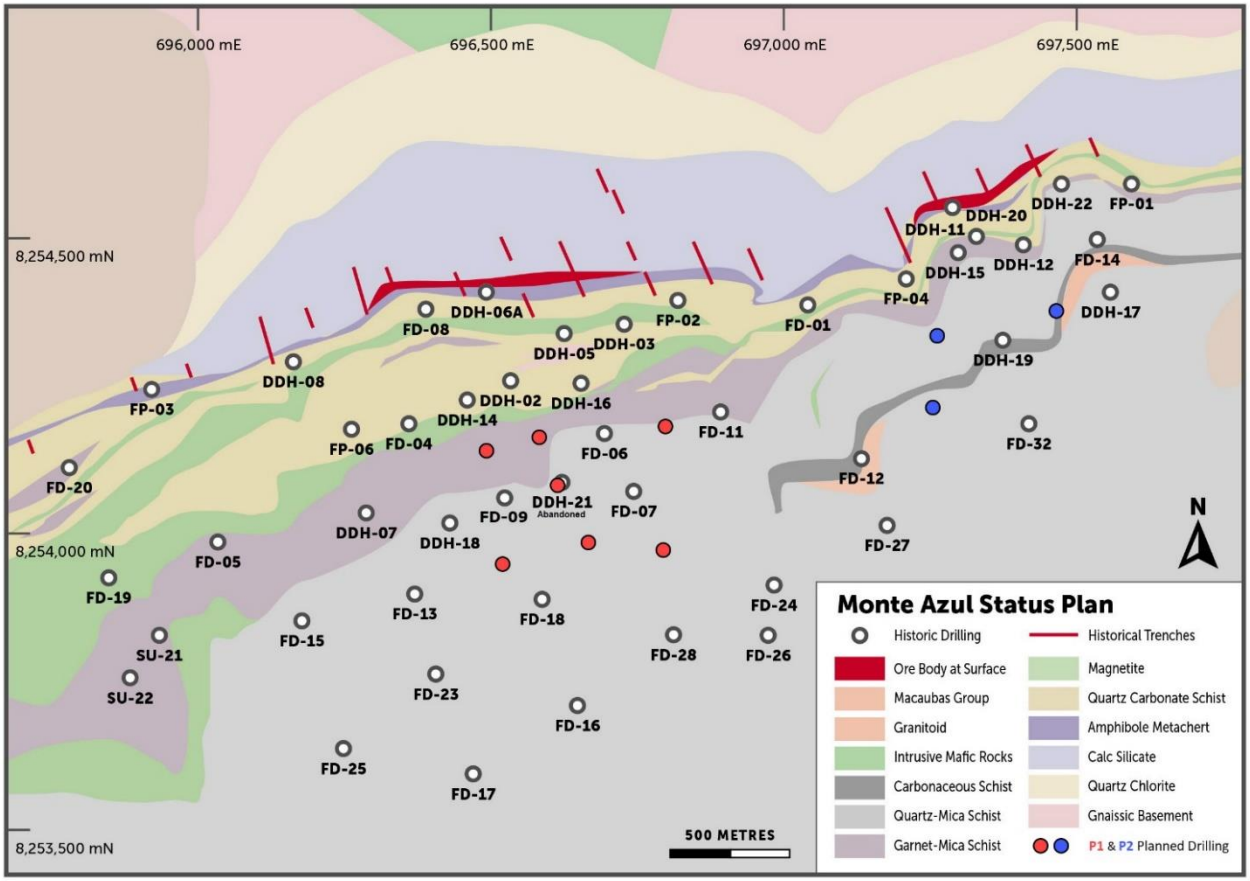
Historic drilling at the Monte Azul's deposit is on 160m – 200m spaced centres on 100m and 200m spaced sections, covering three known lenses across a strike length of approximately 1.4km, which remain open in all directions. The majority of contained metal in Monte Azul's Foreign Resource Estimate resides within the central lens of the deposit.

The initial drill program will aim to increase confidence and potentially extend the higher-grade zone, that includes previous drill intercepts of:

- 13.92m at 10.39% Zn, 2.13% Pb from 262.50m in FD009[2,3]
- 10.34m at 6.09% Zn, 0.72% Pb from 328.24m in FD013[2,3]

Following completion of drilling at the central lens, Odin will target the northern lens with an aim to convert the Foreign Resource Estimate to JORC (2012) and test extensions of mineralisation down plunge (Figure 1).

Figure 1: Monte Azul – Drill Status Plan



Metallurgical and Mineralogical Tests

Initial metallurgical testwork shows ore is amenable to both conventional froth flotation producing high-grade concentrates with recoveries exceeding 80% in first pass tests[4], and pre-concentration where initial testwork by REDWAVE (Austria) showed an average 90% Zn recovery and 87% Pb recovery, to produce a 16.1% Zn, 4.1% Pb pre-concentrate using their XRF ore-sorting technology[5].

Odin is investigating the possibility of producing a pre-concentrate from ore-sorting for sale to a nearby flotation plant that could further enhance the attractiveness to potential offtake partners and provide a low capital cost development opportunity.

Regional Exploration

Odin has secured the vast majority of the ~40km long belt, which includes the highly prospective Alto Alegre prospect to the northeast where zinc mineralisation outcrops at surface. It is the first time this ground position has been consolidated into the one entity and provides additional exploration targets that will be incorporated into a broader exploration strategy.

Odin is concurrently progressing low cost exploration to advance and refine priority regional exploration targets at Alto Alegre and along the belt that will be drill tested following the initial drill program at Monte Azul.

Authorised for release by: Jason Bontempo - Director

For further information please visit www.odinmetals.com.au or contact:

Simon Mottram - Chief Executive Officer

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1. Mineralisation at the Monte Azul Project is of a Sedimentary Exhalative (SEDEX) type
2. See Appendix 1 and 2 for JORC Table 1 material assumptions, and complete results
3. Grades are uncut. Depths and widths are downhole
4. See ASX Announcement "Odin to Acquire Zinc Deposit from Vale S.A", 20 February 2020, for initial froth flotation metallurgical testwork results

Competent Persons Statement:

The information in this report that relates to Exploration results, Metallurgical results and/or Mineral Resources is an accurate representation of the available data and is based on information compiled by Mr Simon Mottram who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Mottram is the Chief Executive Officer of Odin Metals Limited. Mr Mottram has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person (CP) as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Mottram consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

ABOUT THE MONTE AZUL PROJECT

Monte Azul provides Odin with exposure to a near term base metals development asset with significant resource upside at depth and along strike, along with a significant 40km magnetic anomaly that remains underexplored.

The Project is located in the established mining state of Minas Gerais, in an agriculture-based region in proximity to other operating mines and only 6km off national highway BR122. The Project is contained within a single freehold farm with drilling access in place.

Nexa´s Vazante and Morro Agudo zinc operations, and Tres Marias zinc smelter lie ~400km southwest. Grid power and water are available locally, as are suppliers and mining services with the towns of Porteirinha (~40,000 inhabitants) and Janaúba (~70,000 inhabitants) both located ~18km away on the highway.

Figure 2: Location of the Monte Azul Project

XRF Sorting Testwork

Ore is of a SEDEX style with typical simple SEDEX Zn-Pb metallurgy. A single series of pre-concentration tests by XRF sorting were competed by REDWAVE in Austria using their XRF sorting technology. The testwork was completed on a composite sample which had an average grade that is considered typical for the deposit.

XRF Testwork Sample – Composite Grade of Sample

Sample	Zn %	Pb %
	6.29	1.64

The sample was crushed and sieved first to +12.5 to -25mm (coarse fraction), and then the fines sieved again to >6 to 12.5mm (fine fraction). Each fraction was passed through the REDWAVE ore sorter

Ore Sorting Metallurgical Testwork Results (SGS Geosol Laboratories assay results)

Size Fraction		Zn	Pb	Mass Recovery
Coarse	Feed Grade	6.05 %	1.60 %	
	Pre-concentrate Grade	15.72 %	4.10 %	36.72 %
	Waste Fraction	0.44 %	0.14 %	63.28 %
	Concentration Factor	2.60	2.57	
	Recovery	95.4 %	94.4 %	
Fine	Feed Grade	7.24 %	1.83 %	
	Pre-concentrate Grade	17.92 %	3.82 %	28.70 %
	Waste Fraction	2.94 %	1.02 %	71.30 %
	Concentration Factor	2.48	2.10	
	Recovery	71.0 %	60.10 %	
Average	**Feed Grade**	**6.29 %**	**1.64 %**	
	Pre-concentrate Grade	**16.08 %**	**4.06 %**	**35.1 %**
	Waste Fraction	**0.99 %**	**0.33 %**	**64.9 %**
	Concentration Factor	**2.56**	**2.47**	
	Recovery	**89.8 %**	**86.8 %**	

The separated product for each size fraction were sent back for ore grade analysis by SGS Geosol Laboratories in Belo Horizonte, Brazil. Results show the detection and sorting of Zn and Pb ore to be excellent, with nearly all pieces of higher-grade material successfully detected and separated. It can be concluded that the ore is highly amenable to ore sorting using the REDWAVE XRF technology and that further study is warranted.

Future work with a larger bulk sample will begin to examine optimisation of grind sizes and cut-off grades used in the sorter, optimisation of recoveries in finer size fractions and examination of under size rejects.

Appendix 1

XRF Pre-concentration testwork - JORC Code (2012) Edition Table 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	▪ Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. ▪ Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. ▪ Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	▪ Historical drilling consists 57 diamond holes and 6 RC holes for 17,300m. Metallurgical samples for ore sorting testwork were taken from exiting historic diamond drill core to create a composite bulk sample. ▪ Drill collar locations are initially by handheld GPS, and accurately surveyed after completion. Drill samples were logged for lithology, weathering, structure, mineralogy, mineralisation, colour and other features. Half diamond core was collected and placed in marked plastic sacks with a sample ID tag, sealed and shipped to the assay laboratory. ▪ The sample was crushed and sieved first to +12.5 to -25mm (coarse fraction), and then the fines sieved again to >6 to 12.5mm (fine fraction).
Drilling techniques	▪ Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	▪ Diamond core diameters for metallurgical sampling were HQ or PQ in size.
Drill sample recovery	▪ Method of recording and assessing core and chip sample recoveries and results assessed. ▪ Measures taken to maximise sample recovery and ensure representative nature of the samples. ▪ Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	▪ Fresh rock recoveries generally exceed 98%. ▪ The drilling company takes appropriate measures when drilling to ensure sample recovery is maximised ▪ No relationship between sample recovery and grade is known to exist.
Logging	▪ Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. ▪ Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. ▪ The total length and percentage of the relevant intersections logged.	▪ Metallurgical drill samples were logged for lithology, weathering, structure, mineralogy, mineralisation, alteration, colour and other features. ▪ Drilling was geologically logged on-site to a qualitative standard. Core photography was taken on site. ▪ All drill holes are logged in full, from start to finish of the hole.
Sub-sampling techniques and sample preparation	▪ If core, whether cut or sawn and whether quarter, half or all core taken. ▪ If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	▪ Where sampled, core is cut in half using an industry standard core saw, to produce two identical halves. ▪ Historical drill results discussed in this report are all from diamond core.

Criteria	JORC Code explanation	Commentary
	▪ For all sample types, the nature, quality and appropriateness of the sample preparation technique. ▪ Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. ▪ Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling. ▪ Whether sample sizes are appropriate to the grain size of the material being sampled.	▪ Sample preparation is according to industry standard, including oven drying, coarse crushing, and sieving. ▪ An industry standard QAQC program involving Certified Reference Materials "standards" for Zinc (with grades ranging from low to high), which are introduced in the assay batches at an approximate rate of 1 control sample per 20 normal samples, as well as blanks (course and fine) and duplicate samples, which are inserted at an approximate rate of 1 per 20 samples. ▪ Sample sizes are considered to be appropriate and correctly represent the style and type of mineralisation.
Quality of assay data and laboratory tests	▪ The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. ▪ For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. ▪ Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (e.g. lack of bias) and precision have been established.	▪ At the REDWAVE laboratory drill samples were crushed and sieved first to +12.5 to -25mm (coarse fraction), and then the fines sieved again to >6 to 12.5mm (fine fraction). Ore-grade analysis for Zn and Pb was carried out on the recovered fractions from the ore sorting process by SGS Geosol Laboratories of Belo Horizontal, Brazil, using a combination of a multi-acid digest, AAS and XRF techniques. ▪ No instruments were used. ▪ An industry standard QAQC programme involving Certified Reference Materials "standards" (with grades ranging from low to high), blank samples (course and fine), duplicates and Umpire Laboratory check sampling was used.
Verification of sampling and assaying	▪ The verification of significant intersections by either independent or alternative company personnel. ▪ The use of twinned holes. ▪ Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. ▪ Discuss any adjustment to assay data.	▪ Senior geologists or field personnel visually verify significant intersections and results. ▪ No twin holes are discussed or relevant to this report. ▪ All primary data is now stored in the Odin Office in Perth, WA. ▪ No adjustments or calibrations are made to assay data.
Location of data points	▪ Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. ▪ Specification of the grid system used. ▪ Quality and adequacy of topographic control.	▪ Collar locations are initially surveyed with handheld GPS. Easting, northing and elevation values are recorded in meters, using the SIRGAS-2000 23S Datum. Drill collars are accurately surveyed after completion. ▪ SIRGAS-2000 23S ▪ Regional Topographic control (5 m contours) and Digital Terrain Models are used. Drill hole orientation (azimuth and dip) is measured every 3 m downhole using Deviflex or Reflex digital downhole survey equipment.
Data spacing and distribution	▪ Data spacing for reporting of Exploration Results. ▪ Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. ▪ Whether sample compositing has been applied.	▪ Holes are drilled on 160 to 200m spaced centres on 100m and 200m spaced sections. ▪ Additional infill and extensional drilling is required before JORC compliant resource estimation can be undertaken. • No sample compositing has been applied.

Criteria	JORC Code explanation	Commentary
Orientation of data in relation to geological structure	▪ Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. ▪ If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	▪ Drilling has been angled to achieve the most representative intersections through the ore zones. ▪ The company does not believe that any sample bias has been introduced.
Sample security	▪ The measures taken to ensure sample security.	▪ Samples were placed in pre-numbered plastic samples bags with a samples ticket inside and send to the laboratory. All sampling and work on the samples was carried out within the confines of this secure facility constructed onsite. Remnant half core is stored securely onsite at the same facility onsite.
Audits or reviews	▪ The results of any audits or reviews of sampling techniques and data.	▪ There are no known recent audits or reviews of sampling techniques, however wok performed is believed to be of industry standard.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	▪ Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. ▪ The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	▪ The Monte Azul deposit sits within 2 Mining Lease applications (831.911/1993 and 831.912/1993) covering approximately 1,140 Ha, in which Odin has the right to acquire 100%. Odin to pay Vale a 1% Net Smelter Royalty ("NSR") on any zinc and lead production over and above the metal in concentrate determined by the existing Foreign Resource Estimate of 470,000t. All mining projects in Brazil are subject to a Government (CFEM) royalty of 2% on base metals. Landowners are entitled to a royalty equal to 50% of the CFEM royalty. The project is covered in scrub and semi-arid style vegetation in low lying hills, currently not being exploited in any way. There are no known environmental impediments or protection zones that would prevent mining development.
Exploration done by other parties	▪ Acknowledgment and appraisal of exploration by other parties.	▪ The Company's CP has determined that the quality and integrity of historical work is adequate for inclusion, consideration and interpretation with any newly completed work.
Geology	▪ Deposit type, geological setting and style of mineralisation.	▪ The Monte Azul Project is considered a typical SEDEX (sedimentary exhalative) deposit.
Drill hole Information	▪ A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: ○ easting and northing of the drill hole collar ○ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar ○ dip and azimuth of the hole ○ down hole length and interception depth ○ hole length. ▪ If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	▪ "Appendix 2 - Table of Results – Monte Azul Historic Drilling" contained within this report includes the Information relating to Points "A" through to "E" inclusive. ▪ No information relating to to Points "A" through to "E" has been excluded.
Data aggregation methods	▪ In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. ▪ Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. ▪ The assumptions used for any reporting of metal equivalent values should be clearly stated.	▪ Where results are reported, averaging of mineralised intervals are calculated by the following parameters ○ Weighted averaging of grade/thickness ○ A maximum of 2 continuous metres of internal dilution ○ No top-cuts have been used ▪ Where results are reported and intercepts incorporate lengths of "high grade" (in the context of surrounding results), these "high grade" results are detailed transparently and separately in any reported results, both in the text of the report and in any attached tables. ▪ None have been used.

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	▪ These relationships are particularly important in the reporting of Exploration Results. ▪ If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. ▪ If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	▪ Mineralisation discussed in this report, at Monte Azul, is comprised of three lenses that are side by side and have the same geometry (dip/strike). It is possible that they join along strike, however a sufficient amount of drilling has not yet been completed to prove or disprove this. ▪ Downhole lengths have been used and this is clearly stated in the text and tables.
Diagrams	▪ Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	▪ An appropriate location plan has been included, which also shows the location of the representative section presented in the report.
Balanced reporting	▪ Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	▪ All results of significance that are relevant to the metallurgical results discussed in this report have been included.
Other substantive exploration data	▪ Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	▪ All material and meaningful data, relevant to the scope of work in this report, has been included in this report. There is no other information, which is available and/or in the opinion of the Company's CP is lacking in this report.
Further work	▪ The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). ▪ Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	▪ It is expected that infill drilling on the foreign resource estimate will commence as soon as practicable in 2020. ▪ Potential for extension at Monte Azul exists at depth, both down dip and down plunge.

APPENDIX 2

Table of Results – Monte Azul Historic Drilling

Hole ID	UTM-E	UTM-N	RL (m)	Dip	Az	Depth (m)	Status	From (m) Downhole Depth	To (m) Downhole Depth	Width (m) Downhole Depth	Zn (%)	Pb (%)
FD-009	696510.26	8254066.50	818.65	338.0	-70.0	298.80	Complete	262.50	276.42	13.92	10.39	2.13
FD-013	696354.89	8253896.54	807.14	338.0	-60.0	376.95	Complete	328.24	338.58	10.34	6.09	0.72