

Orosur Mining Inc.

Stock Data

Share Price:	39.25p
Market Cap:	£73.4m
Shares in issue:	187.1m
52 week high/low:	39.60p/1.70p

Company Profile

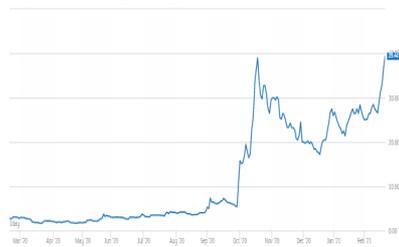
Sector:	Gold Mining
Ticker:	OMI
Exchange	AIM, TSX

Activities

Orosur Mining Inc. ('Orosur', 'the Company', 'OMI') is a South American-focused gold developer and explorer.

Company website: www.orosur.ca/

1-year share price performance



Source: [LSE](https://www.lse.com)

Past performance is not an indication of future performance.

Turner Pope contact details

Tel: 0203 657 0050
Email: info@turnerpope.com
Web: www.turnerpope.com

Andrew Thacker
Corporate Broking & Sales
Tel: 0203 657 0050
andy.thacker@turnerpope.com

Zoe Alexander
Corporate Broking & Sales
Tel: 0203 657 0050
zoe.alexander@turnerpope.com

Barry Gibb
Research Analyst
Tel: 0203 657 0050
barry.gibb@turnerpope.com

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Orosur has provided a further update on the progress of Minera Anzà's drilling campaign that is currently underway on its Anzà project in Colombia. Following last month's addition of a third rig, diamond drill holes MAP-073, 074, 075 and 076 were completed during December 2020 and January 2021. Drilled on three sections, these holes returned high-grade gold intersections, including 21.6m @ 6.02g/t Au, 12.25m @ 5.39g/t Au and 4.35m @ 2.53g/t Au, as well as high grade zinc intersections, including 19.85m @ 6.46% Zn. While assisting in addressing several of the discovery's key structural questions, the uncovering of wide intersections of high-grade zinc added further weight to the concept of its mineralisation being a polymetallic Volcanogenic Massive Sulphide ('VMS') model. With the preliminary 2,300m drill program now largely completed, valuable guidance has been gained with respect to the nature and distribution of the mineralisation at APTA that will allow future drilling to be more efficiently targeted. In the light of this, a decision has been taken to move into the next phase with a 7,000m program for which a fourth diamond drill rig will also be mobilised to site in the coming days.

APTA – A polymetallic, gold rich VMS deposit?

Having largely completed its preliminary drill program of 2,300m, the Orosur team is now developing a greater understanding of APTA, including its nature and paragenetic (geological and structural) controls that had been left unanswered during older campaigns by previous companies. Over 18,000m was drilled by Waymar Resources prior to it becoming part of Orosur in late 2014, however subsequent work by Orosur determined that much of this work was oriented down dip and, although these holes often returned superficially attractive assay results, they did not provide sufficiently reliable geological information to fully understand the nature of the mineralisation or to allow accurate targeting/efficient expansion drilling. The current program was therefore designed to address outstanding orientation and structural questions, as well as to provide insight into the style of mineralisation with a focus on the potential for a hybrid polymetallic VMS/Epithermal model.

Drilling results: MAP-073, MAP-074, MAP-075 and MAP-076

Key intersections included (further sample intercepts have been tabulated overleaf):

- MAP-073 21.60m @ 6.02g/t Au, 6g/t Ag and 3.23 %Zn from 271.75m
- MAP-074 5.20m @ 1.17g/t Au 4.97g/t Ag and 3.02% Zn from 195.40m
- MAP-075 19.85m @ 0.90g/t Au 2.17 g/t Ag and 6.46% Zn from 226.15m
- MAP-076 12.25m @ 5.39g/t Au, 1.65 g/t Ag and 0.18 % Zn from 228.65m

MAP-073 and MAP-076 were drilled on the same section (see figure overleaf), to assist in resolving a geological interpretation issue in the south of the APTA zone, that had resulted from earlier holes having been drilled toward the east or having stopped short of the mineralised zones. Both successfully resolved numerous uncertainties, also returning substantial intersections of high-grade gold and moderate zinc (as tabulated overleaf).

Hole MAP-075 was drilled some 90m down dip of the previously announced MAP-072. Visually, the mineralisation within the breccia zone intersected was similar to that intersected in MAP-072 (see table overleaf), but assay results instead suggest MAP-075 has intersected a different mineralogical domain, transitioning from one that was gold dominant with secondary zinc, to one that is zinc dominant with secondary gold.

Although such metal zoning is an integral characteristic of VMS deposits, orientation problems identified with previous drilling mean that this is the first hole to display this specific feature. It does, however, provide tangible guidance for further targeting. Zinc mineralisation in MAP-075 is at times massive, with grades in excess of 30% over small intervals. Both MAP-072 and MAP-075 also contain minor copper, roughly correlated with zinc, with grades at times as high as 0.8% Cu.

MAP-074 was drilled up dip of a group of previous holes that had defined a complex zone of gold mineralisation (see figure overleaf). Mineralisation was thinner than expected with lower gold grade but, as with hole MAP-075, showed enhanced zinc grades.

Further drill results might also be expected shortly depending on any delays in assaying at the labs due to COVID-19 related issues. Hole MAP-077 located an additional 90m down dip of MAP-075, has been completed and visually demonstrated similar intersections of massive sulphide and pervasive silicification. All samples have already been submitted for assay, and are expected to provide additional guidance that should assist in further developing an understanding of the zonation within the VMS system. Drilling up dip with hole MAP-078 visually shows a thinner breccia package and might suggest the zone is pinching out. With such information being essential for targeting of the orebody, hole MAP-080 has just been commenced down-dip.

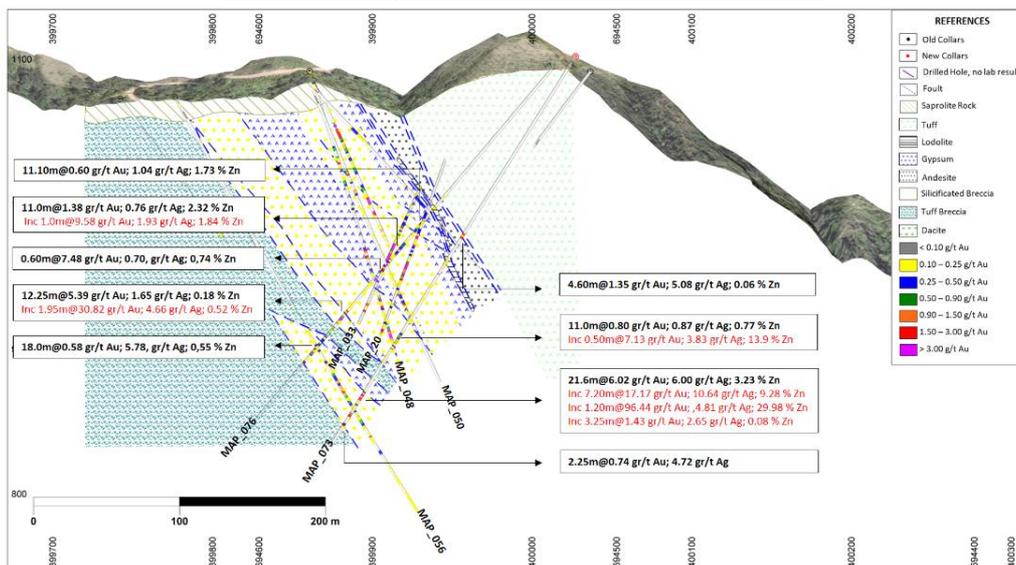
Diamond Drill Hole Sample Intersections¹ including New Holes: MAP-073, MAP-074, MAP-075 & MAP-076

Hole	From (m)	To (m)	Interval (m)	Au (g/t)	Ag (g/t)	Zn (%)
MAP-072	108	112.10	4.10	6.52	29.74	0.28
including	109.85	111.08	1.23	14.55	9.52	0.21
MAP-073	271.75	293.35	21.60	6.02	6.00	3.23
including	272.60	279.80	7.20	17.17	10.64	9.28
including	275.75	276.95	1.20	96.44	34.81	29.98
MAP-074	181.00	200.60	19.60	0.70	6.19	1.42
including	198.70	199.20	0.50	5.30	4.95	2.48
including	195.40	199.20	5.20	1.17	4.97	3.02
MAP-075	216.65	253.95	37.30	0.72	1.80	3.58
including	226.15	246.00	19.85	0.90	2.17	6.46
including	226.15	230.50	4.35	2.53	4.93	12.98
MAP-076	228.65	240.90	12.25	5.39	1.65	0.18
including	236.35	238.30	1.95	30.82	4.66	0.52

¹Intersections are reported as down-hole widths, not true widths. The Company does not yet have sufficient drilling information to accurately calculate true widths of drill hole intersections.

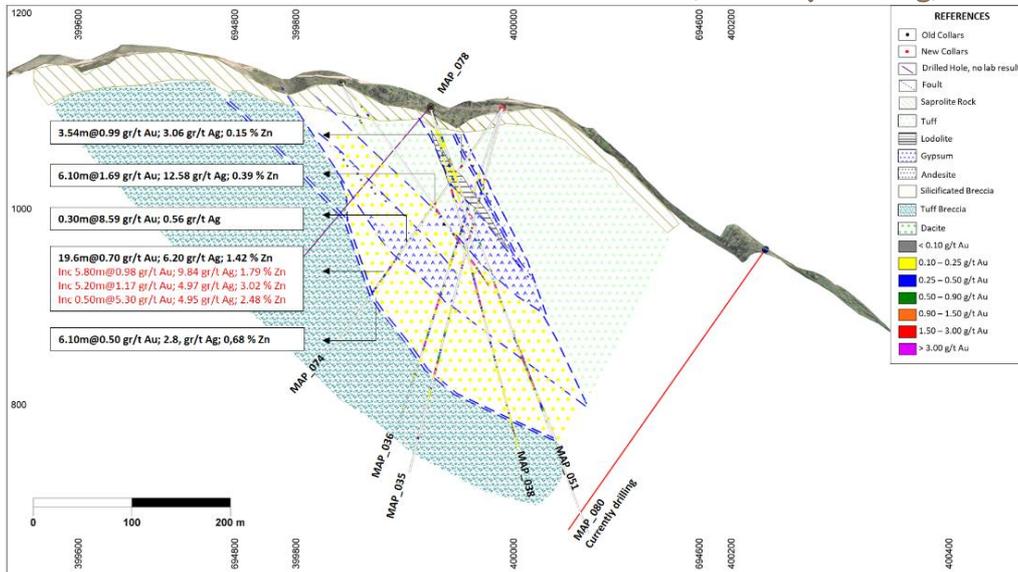
Source: Orosur, RNS of [22 February 2021](#)

Drill Section, Holes MAP-073 and MAP-076



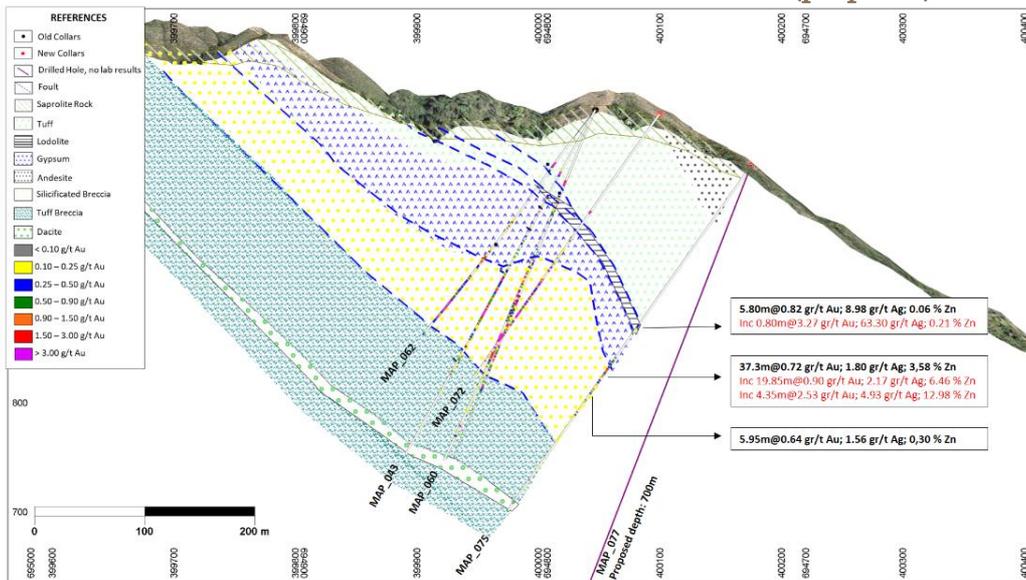
Source: Orosur, RNS of [22 February 2021](#)

Drill Section, Hole MAP-074 and Hole MAP-080 (currently drilling)



Source: Orosur, RNS of 22 February 2021

Drill Section. Hole MAP-075 and Hole MAP-077 (proposed)



Source: Orosur, RNS of 22 February 2021

Presenting both opportunity and challenge

The emerging picture of APTA is as a polymetallic, gold rich, VMS deposit. Although exploration still remains at an early stage, the quite exceptional grades that have already emerged, coupled with potential size plus polymetallic nature, offer scope for both an extended life-of-mine and positive project economics. As Orosur’s Chief Executive, Brad George notes, this presents both opportunity and challenge. Metal zoning issues might be seen to complicate mine planning, while recovery of precious metals from such deposits has also not always proved to be easy. That said, solutions can be found through modern, technological approaches. The application of sulfide flotation, for example, has improved significantly as a result of updated process (such as Glencore Technologies’ Albion process), the use of different reagents and more sensitive monitoring technology, which together create potential to increase recoveries beyond 80%.

Investor interest in such projects is, not surprisingly, high. One of the world's best-known and most successful polymetallic VMS deposits, for example, is the Flin Flon mines which are located in Manitoba, Canada and began producing for their operator, Hudbay Minerals (TSX:HBM,NYSE:HBM), all the way back in 1930. Another is the Kidd mine, also in Canada, where work began in the 1960s and its current operator, Glencore (LSE:GLEN), is now mining at 9,600 feet, making it the world's deepest base metals mine below sea level. Both the Flin Flon and Kidd mines have produced significant quantities of copper and zinc, as well as silver or gold. The 777 mine at Flin Flon, for example, has average annual copper production of 25,000 tonnes, while Kidd produced some 39,000 tonnes of the metal in 2017. The numbers climb still higher when it comes to zinc; according to Hudbay Minerals, Flin Flon's 777 mine produces about 51,000 tonnes of the metal annually with Kidd having reportedly produced over 72,000 tonnes in past years.

Possibly a more obvious and constructive comparison could be made with Agnico Eagle's own flagship VMS mine, the LaRonde Complex, ('LaRonde') which is located in the Abitibi region of north-western Quebec. The experience Agnico gained from working with such mineralisation is now providing Orosur with important guidance regarding next steps to be taken. Alternatively, further south the Romero Gold Project ('Romero') is a gold and copper resource development that has intermediate sulphidation epithermal style mineralisation located in Dominican Republic's Province of San Juan. Owned by GoldQuest Mining Corp., Romero is presently at the permitting stage to construct a 2,800 tonne-per-day underground mine.

LaRonde Complex

Comprises a VMS gold-rich deposit with lenses formed mainly by sulphide precipitation from hydrothermal fluids on the seafloor and by replacement below providing gold-copper and zinc-silver mineralization that occurs in the form of massive and disseminated sulphide lenses. The stacking of the LaRonde lenses is the result of successive volcanic events, intercalated by cycles of hydrothermal activity associated with reactivation of synvolcanic faults.

The presence of silver and base metals adds considerably to the value of LaRonde's gold ore, reducing the total cash cost to produce each ounce of gold on a by-product basis. LaRonde has produced over 6 million ounces of gold since it opened in 1988. LaRonde's 2.2-km deep Penna Shaft is now the deepest single-lift shaft in the Western Hemisphere. Five different mineralized horizons are known to exist adjacent to the Penna Shaft; zinc-silver mineralization with lower gold values, common in the upper mine, grades into gold-copper mineralization within the lower mine. The predominant base metal sulphides are chalcopyrite (copper) and sphalerite (zinc).

Romero Gold Project

A Pre-Feasibility Study ('PFS') technical report for the Romero Gold Project was published on 10 November 2016. It describes the deposit's proposed development for an underground mine utilizing long hole incorporating drift and fill mining methods with cemented paste backfill. The total planned mine life is approximately 8 years producing some 7 million tonnes of mineralized material mined and processed, leading to LOM production estimated to be 448 thousand tonnes (dry) of a bulk Cu-Au-Ag concentrate. The Project's Total Probable Mine Reserve Estimate in compliance with National Instrument ('NI') standards have been detailed below:

Romero Gold Project – Mineral Reserve Estimate

Mine Reserves \$70 NSR Cut-off ⁽²⁾	Tonnes	Au		Ag		Cu		Au-Eq ⁽¹⁾	
		(g/t)	(oz)	(g/t)	(oz)	(%)	(M lb)	(g/t)	(oz)
Total Probable	7,031,000	3.72	840,000	4.33	980,000	0.88	136	4.9	1,117,000

1. Gold equivalent metal prices \$1,300/oz Au, \$20.00/oz Ag and \$2.50/lb Cu

2. Cut-off NSR metal prices: Cu \$2.50/lb - Au \$1,250/oz - Ag \$17.00/oz;

Recovery: Cu-96.8% Au-71.7% Ag-54.4%, Payable: Cu-96.5 Au-90.0 Ag-95.0,

Treatment Charges, Refining Charges (TCRC): \$257.83/dmt, Cu concentrate 20%

Source: [IDS Energy & Mining Inc. \(2016\)](#)

The PFS concludes that the project's potential mining and processing cost (including G&A) could be as low as US\$45.97/tonne, which represents good guidance for South American projects of this scale which typically end up quite significantly lower than similar proposals in North America. This was based on an estimated total capital costs (including a 15% contingency) at US\$250.9m together with an estimated LOM total operating cost of US\$323.2m. Its economic model derived a pre-tax break-even Au price of US\$640/oz, cash costs of US\$669/oz and cash costs net of by-products (Cu & Ag) of US\$191 with Au estimated to represent 73%

of payable metal by value over the LOM. The project NPV (pre-tax) is forecast to be US\$317.2m or US\$202.7m after tax, both using a discount rate of 5%. As such, its pre-tax internal rate of return ('IRR') was estimated at 38.7%, or 28.2% after tax, implying a simple payback period (after-tax) of 2.5 years.

Favouring underground mining for APTA

Possibly one of APTA's key planning takeaways is that it needs to demonstrate a high enough metal value/tonne to support underground mining, as it is considered that an open pit is now unlikely to be successfully permitted on Colombia's Mid-Cauca belt. This has already been demonstrated with major low-grade porphyry projects like, for example, AngloGold Ashanti's La Colosa that is ultimately likely to be abandoned on such grounds, as was Greystar Resources' seemingly ill-fated Angostura gold deposit which similarly stalled a decade or so back. Contrasting with the relatively dry condition of the naturally draining Altiplano region of Chile, these projects found themselves located in a rugged, hot and wet part of Colombia, meaning that not only would the 'scar' that such surface mining creates on the landscape raise the hackles of environmentalists, but they also create complex and expensive problems when dealing with waste and tailings disposal in an ecological manner. Moreover, APTA's ore has a high sulphide content which becomes mixed with rainfall in the region's ambient temperatures, suggests acid drainage could also become an issue. Such problems of course do not arise when working underground, given that there is little surface footprint and little or no waste given that all tailings are simply pumped back underground as backfill.

Orosur now has limited execution or funding risk

As part of the private placement Orosur completed on 30 November 2020, Newmont was granted a right to participate in future equity offerings of Orosur in order to maintain its ownership level at 19.9% (following the Placing, Newmont's participation was cut to 15.6%). The Exploration and Option Agreement originally entered into includes a three-phase earn-in structure to earn up to 75% through a minimum commitment of US\$30.0 million in qualifying expenditures over twelve years, completing a NI 43-101 compliant feasibility study while making cash payments to Orosur totalling US\$4.0 million during phases 1 and 2. Most recently, for example, on 10 November 2020, Orosur received the sum of US\$582,170, from Minera Monte Águila S.A.S. ('Monte Águila'), the new name for Newmont Colombia SAS, a Colombian company that is a 50:50 JV between Newmont and Agnico Eagle Mines Limited ('Agnico', NYSE:AEM, TSX:AEM), in connection with maintaining the earn-in rights pursuant to the Option Agreement. TPI estimates that cash generated from the Placing, along with existing cash/receipt of remaining instalments remains sufficient to carry Orosur through to the completion of a pre-feasibility study for APTA. Today's news provides not only further verification of previous drill results and a greater understanding of the geological structure, but also sufficient confidence for management to move into the next phase of drilling with along with the addition of a fourth rig.

Realistically, Monte Águila will wait for Minera Anzá to complete the planned 2,400m over eight holes plus the next 7,000m program and then comprehensively analyse the data generated, following which it could then take a formal decision to assume operational control of the Anzá Project. On this basis, its participation could potentially increase to a majority within 18 or so months thereafter. In this respect, the Board's decision to ensure that the campaign will not be unduly hindered by the Pandemic most certainly appears to be in shareholder's best interests, particularly when considering drilling results reported by Los Cerros Limited (ASX:LCL) whose nearby Quinchia Project in the Mid-Cauca gold belt on 21 January 2021 reported latest drilling from its Tesorito South porphyry target returning its strongest gold intercept ever recorded, including 102m @ 2.11 g/t Au from 28m. This further demonstration of the regions exceptional prospectivity resulted in Los Cerros' share price spiking some 50% the news. Given the resounding verification delivered by recent drilling, together with the Board's expectation that the remaining assays will produce similar polymetallic gradings and widths, the Anzá Project appears capable of driving strong mining economics. On this basis, TPI considers a positive decision from Agnico & Newmont could potentially be delivered within the next 12 to 18 months which, in turn, would add considerably to Orosur's current valuation.

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