

The Argentine Lithium Connection

A junior stock can begin a decent bull run for any number of reasons, but one thing's for sure, it's rarely because a drilling program started. Results? Sure! But explorers exploring is surely no news at all; unless, of course, you're a Grosso Group company. Joseph Grosso and his team have been so long established in Argentina that confidence in their projects is automatically fairly extreme, and the group's past successes coupled with their current asset acquisition plans may just be enough to create lift-off.

The company in question, Argentina Lithium and Energy Corp. (TSXV: LIT | OTCQB: PNXLF), has the option to earn a 100% interest in the Arizaro Lithium Brine Project, including 20,500 hectares in the central core of the Arizaro Salar, the largest in Argentina and third largest in the "Lithium Triangle". Upon announcing that exploration had commenced, LIT shares climbed by over 40%; presumably in confident anticipation of a positive outcome resulting from two things: the aforementioned belief in management, and an announcement citing the company's intention to acquire an additional deposit in the coming weeks.

All of this amounts to a sort of confidence positive feedback loop, especially as successful dealings in Argentina are currently reserved for the experienced only. Recent regime change is often enough to scare away most investors, but the Grosso lot have been cluttering up the place for decades already. In short, and with certainty, the group are sufficiently connected to move at an intensely competitive pace compared to, say, a newcomer to the region. The company's seemingly uninspiring press release has motivated many to hand over rather a lot of cash; apparently, if Joseph Grosso is both breaking ground and buying more, people want in.

Not surprising, really, since the group already have an envious track record of Argentinian exploration. Although little historic exploration work has been done on the Arizaro Salar, the central area is interpreted to have the geologic conditions to be the most prospective for quality brine resources, and now a relatively small drill program of up to four holes will test conductive and semiconductive zones identified by the vertical electric sounding (VES) survey, which are interpreted as geologic units that are saturated with high-density, and potentially lithium-bearing, brines.

The geology of Arizaro includes volcanic rock outcrops and structural conditions similar to other salars in the Puna region where lithium and potash have been found in abundance. In addition, the large size of the Arizaro basin makes it is possible to find geological and hydrogeological conditions for establishing entirely separate sub-basins within the salar. These factors support exploration for deep layers of lithium-rich brine which are not directly linked to the surface fluids at the site.

Furthermore, the Arizaro Salar benefits from a strategic location for infrastructure, including: a railway that connects to the deep water port of Antofagasta, nearby advanced mining projects that are expected to bring significant development of access routes and power, and the availability of water for development. Arizaro gets less than 30mm of rain each year, so while not quite qualifying as a desert, it is certainly dry enough to make evaporation ponds an economical option. The price of lithium is still climbing, salars remain the cheapest extraction method, and management has seen it all before. Shut up and take my money, Joe.

Argentina Lithium & Energy – Probing the Depths

One of the paradoxes of recent times has been the “talking down” of brine lake Lithium deposits (salares) as being in some way “too difficult” or too “long term”. Having said that though two of the most high flying stories of recent times, Orocobre and Lithium Americas are both salar-based and there has been a staking boom in the Argentine part of the Lithium Triangle that makes California in the 1850s pale into insignificance. Explorers, quite literally, cannot get enough of Argentine lithium territory.

The caution relating to salares exploitation is powered by the mishaps that befell Orocobre and Rincon. However, in both these cases the lessons learnt will mean that others will have the benefit of their difficult experiences. The argument that there is a longer lead time for salar development (due to the need to kickstart the evaporation process) does not hold much water (pardon the bad pun) due to the much longer (and more expensive) drilling and resource estimation phase at a hardrock deposit and the much higher development costs at underground mines.

The Background Music

After nearly a decade and a half of irregular iconoclastic governments in Argentina ruled most recently by the dynasts of the Kirchner family and before that the Duhalde regime the country has returned to a certain orthodoxy with the election of Mauricio Macri as President in the last quarter of 2016. While not reinserting Argentina directly into the good books of mining investors it has certainly made thinking about the possibilities not being grounds for insanity. Amongst the measures taken so far that have enhanced the perspective for miners are:

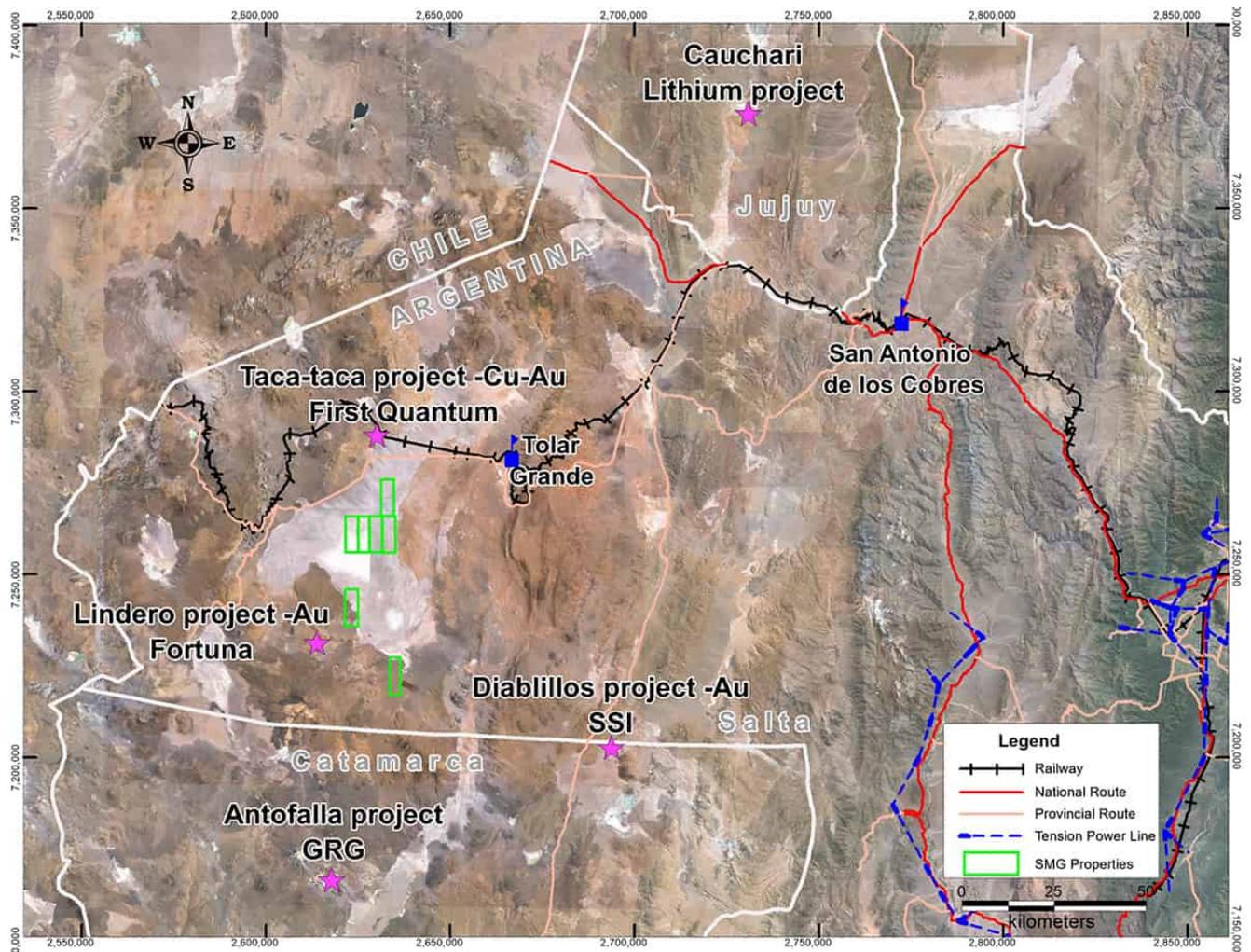
- Lifted currency controls – devalued Peso may result in lower costs for project development
- Eliminated export taxes on concentrates and gold/silver doré
- Some import restrictions lifted – may allow better sourcing of equipment

These changes have removed the major bugbears of foreign miners operating in the country. This reopening has coincided with the Lithium boom. There is a good case to be made that the relative lack of salares moving to production was due to the double negatives of the low lithium price between 2011 and 2016 and the death throes of the Kirchner regime making Argentina an unattractive place to advance projects.

The Prime Asset

It is probably evident to those who know the Grosso group that it should be so well-positioned here. Argentina Lithium & Energy Corp. (TSXV: LIT | OTCQX: PNXLF) has the option to earn a 100% interest in the Arizaro Lithium Brine Project. The terms of the option agreement include \$6mn in staged payments and \$4.2mn in expenditures over a four-year period. Additionally, the company must issue 2.5mn common shares with certain resale restrictions.

The territory optioned covers 20,500 hectares in the central core of the Arizaro Salar, the largest in Argentina and third largest in the “Lithium Triangle”. The whole salar covers an area of 1600 km² within a watershed of 6000 km² and is located in the Andean province of Salta.



However, like many other salares in Argentina it has a portion of the pie rather than the whole pie. Other players with parts of the Salar de Arizaro are Lithium X, Eramet, Sentient and REMSA (an entity of Salta's government).

Volcanic and associated hydrothermal activity is believed to be the main source of lithium and other solutes to the basin. This is verified by the deposits of travertine and occurrences of ulexite that have been found, as well as the presence of lithium bearing clay (hectorite), and lithium mica (lepidolite), in the surrounding areas of the basin. The generation of salt deposits has occurred in stages over time; early-deposited halite and gypsum layers that have been deformed by Andean tectonic activity are found on the eastern side of the salar. The rugged, lunar landscape nature of the salar's surface can be seen below.



Very little historic exploration work has been done on the Arizaro Salar, however the central area is interpreted to have the geologic conditions and thickness to be the most prospective for quality brine resources. Historical sampling on the western margins of the Salar de Arizaro show elevated lithium values near surface contained within a classic halite dominant salar, much like nearby Rincon, Salar del Hombre Muerto and Atacama projects, all of which host advanced or producing lithium brine operations. This salar has a prevalence of halite to the west and gypsum to the east. These evaporites are covered by surficial deposits along the eastern margin of the salar.

The Arizaro salar benefits from good infrastructure in the Puna region, and is set to benefit from further development of adjacent large-scale mining projects, including First Quantum's Taca-Taca copper project and Fortuna Silver's Lindero gold project. Salar de Arizaro is traversed by a

highway and railroad that connect the area to the Chile port of Anotfagasta some 450kms west and east to Pocitos on the main Argentine rail network, where natural gas and an industrial park are found.

The development of brine projects on some other salars in the region has been hindered by a lack of fresh water for processing. At Arizaro, there is a known water recharge area, and the Company has made securing a water source a key component of the exploration program in order to prepare for a feasible mining project.

Exploration

In association with work on the Taca Taca project, holes of approximately 100 metres depth were drilled into the salar and detected interbedded volcanic material, reflecting the volcanic activity that accompanied the evaporite sedimentation. The presence of geological structures such as faults and flow channels solutions were also detected. However, as might be expected these holes were not directed towards establishing the Lithium content of the salar.

Until recently little work had been done and the historical references are mainly to a report from the USGS in 1987 which reported date sampling of brines from the subsurface (to a mere two metres depth) that returned lithium values, up to 160 mg/L, confirming the presence of lithium in the basin but really only (literally) scratching the surface.

Argentina Lithium's exploration campaign thus far includes both near-surface geochemical sampling and a Vertical Electric Sounding (VES) geophysical survey to delineate conductive zones at depth that may host lithium-bearing brines. Data from this first stage of the program has been used to define targets for a drill program that is planned for early in the second quarter of 2017.

The goal now is exploration for deep layers of lithium-rich

brine which are not directly linked to the surface fluids at the Arizaro salar. This initial exploration program at Arizaro was, therefore, designed to acquire initial hydrogeological understanding of this largely un-tested salar and to identify conductive zones at depth that may host lithium-bearing brines. VES is effective to depths of approximately 400-500 metres below which alternative surveys such as Controlled Source Audio-frequency Magneto-tellurics are required.

Near-surface fluid samples collected from the trenches returned low lithium (<10 mg/l) and potash (<1,500 mg/l) levels. However, in the company's opinion, the very large size of the salar and its geomorphology support the potential for discovery of deep brine layers with potential to host higher concentrations of lithium, as well as potash.

The consultants that undertook the VES tests have concluded from the results that, as well as the geologic and geomorphologic setting, climatic conditions, and hydrogeological environment at Arizaro, when compared to other well-studied salars, including Hombre Muerto, Rincón, Antofalla, Llullaillaco, and Rio Grande, indicate that there is a high probability to find brines at depth with high densities of 1,210 to 1,225 g/l and conductivities higher than 200 microS/cm. The VES results identified clear targets for an initial drill campaign. Now three or four holes of up to 400 metres in depth are planned to test these targets.

Conclusion

It's early days for the companies in the Generation X of the Lithium wave. Those from the preceding generation that started out late last decade have moved towards production, now it's the turn of those spawned by the 2016 Lithium price surge or those from the previous generation who were thwarted when prices took a tumble (and political circumstances deteriorated) resulting in wholesale shelving of development plans.

With a price tailwind, a dramatically improved political situation and the deep insertion of Joe Grosso in the Argentine political and economic scene, the scene is set for Argentina Lithium & Energy to make advances if the exploration data starts to stack up in a favorable way.

The winning edge of the Argentina Lithium salt lakes

Niko Cacos, President, CEO and Director of Argentina Lithium and Energy Corp. (TSXV: LIT | OTCQB: PNXLF), in an interview with InvestorIntel's CEO Tracy Weslosky discuss Argentinian lithium and the company's prolific team. Rather than coming from hard rock, Argentinian lithium is found in salt lakes, which is easier and cheaper to extract from, providing a competitive edge. Niko highlights two team members: Joe Grosso, leader of the Grosso Group with an extensive knowledge of the lithium scene, and Dr Daniel Galli who has a Ph.D in thermodynamics.

Tracy Weslosky: Niko, Argentina Lithium & Energy is a new story for us at InvestorIntel – can you tell us more?

Niko Cacos: Argentina Lithium is a new story not just at InvestorIntel. It's a new story right now in the market, but we're not new to Argentina into lithium.

Tracy Weslosky: We all follow lithium. Why Argentina Lithium? Why there?

Niko Cacos: Argentina is in the lithium triangle, which produces half of the world's lithium and most of that comes from Chile. Argentina, underexplored country, has humongous

potential to be the largest producer.

Tracy Weslosky: I was reading about the lithium triangle, which you just referenced. Is the lithium better there, can you explain that for some of us investors?

Niko Cacos: Lithium is lithium, but the form that it's found in, it's found in like these dried up salt lakes, salars or brines, which is very different than getting lithium out of hard rock. It's much cheaper, much more effective.

Tracy Weslosky: I was reviewing your PowerPoint and you certainly seem to have a competitive advantage with your people. It looks like you've amassed a really stellar team. Can you give us a little bit more about who they are?

Niko Cacos: There's two layers that are really important on our team. Joe Grosso and the Grosso Group. We have 24 years of continuous experience in Argentina. This year Joe Grosso, the leader of the group, was inducted in the Argentine Mining Hall of Fame. We know how to deal with Argentina at all levels, governments, vendors, regulators, everything.

Tracy Weslosky: I also noticed on your team that you seem to have a technology expert. Do you have an interesting extraction technology – tell us a little bit more about this gentleman?

Niko Cacos: We have Dr. Daniel Galli. Dr. Galli is a professor of thermodynamics at the University Jujuy in Argentina. He also has his own patents that have put other lithium mines into production...to access the complete interview, [click here](#)

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Deconstructing Silver Standard in Argentina

One doesn't have to have too great a memory to recall the glory days of silver both before the 2008 crash and then the resurgence thereafter (when the metal hit \$50 per oz momentarily). Back at that time one of the 800lb gorillas of the silver space was Silver Standard Resources (TSX: SS0 | NASDAQ:SSRI) and it was a ubiquitous presenter in New York, constantly doing the rounds and keeping its mammoth market cap in play.



At the time its main play was a project (not a mine) called Pirquitas in the far northern province of Jujuy in Argentina. The project eventually came into production and has carried Silver Standard through the dark times, both for silver and for perceptions of Argentina. Now Argentina is (almost) sexy again and silver is back on centre stage (though not as booming as the Tin Foil Hatters would like). And yet machinations are afoot to “distance” Silver Standard from the project that has long been its mainstay.

In this piece we shall look at what is going on to try and divine if this is the creation of a major new champion of the Argentine mining space or the steady retreat of Silver Standard from its traditional stamping ground.

The “Latest” Deal

In October 2015, the current main vehicle of the Grosso Group, Golden Arrow Resources (TSXV: GRG; FSE:GAC; OTCQB:GARWF) and Silver Standard entered into a business combination agreement for the joint development of Golden Arrow’s Chinchillas project and “an agreement to combine the producing Pirquitas Mine and the Chinchillas project, located approximately 35 kilometres apart in Jujuy Province of Argentina, into a single new operation.” The joint venture would be 75% owned by Silver Standard and 25% owned by Golden Arrow.

During the 18-month preliminary period, Silver Standard would invest up to approximately US\$12.6 million “at Chinchillas to advance the project and evaluate the feasibility of developing a combined mining business with its existing Pirquitas operation.”



The Grosso Group

This outfit is headed by Joe Grosso who might be called the doyen of Argentine mining. He was one of the early pioneers of the mining sector in Argentina in 1993 when mining was opened to foreign investment, and was named Argentina's 'Mining Man of The Year' in 2005. He proved to be a useful vector for foreign miners wanting local knowledge during the opening of the Argentine mining sector and fully formed strategic alliances and negotiated with mining industry majors such as Barrick, Teck, Newmont, Viceroy (now Yamana Gold) and Vale S.A., and government officials at all levels.

Rummaging through the dustbin of our mind (well, actually searching our back catalogue of research) brought us to our avid support (in the middle of last decade) for Aquiline in its legal battle over the *La Navidad* deposit with the Grosso Group company IMA (then IMR.v). IMA ended up losing out to Aquiline, then Aquiline was snapped up by Panamerican Silver for around CAD\$626 mn, if memory serves us right, only to have Panamerican mothball the project despite its enormous potential.

Then rolling on to after the 2008 crisis, IMA was reduced to a cashbox and became subject to the predatory moves of a certain Southern Californian guru who engineered its merger into a threeway structure with Kobex and International Barytex in a deal, which we opposed, that created a super cash-box that then did nothing with the money during one of the greatest bargain basement sales in mining history.

The Argentine Assets

Silver Standard's Pirquitas property is a well-known mine. It is positioned at an elevation of 4,100 meters above sea level and is accessible by all-weather roads. The open-pit mine achieved commercial production in December 2009. Ore is crushed and treated in a gravity pre-concentrator prior to processing in a conventional mineral flotation plant. The silver and zinc concentrates produced from the plant are shipped to third party smelters.

The mine delivered record silver production in 2015 with 10.3mn ounces of silver and 9.4mn pounds of zinc. For 2016 the production guidance was between 8-10mn ounces of silver and up to 5mn pounds of zinc.

The Probable Mineral Reserves amounted to 16.5mn ounces of silver at an average grade of 220.1 g/t and 7.7mn ounces of silver in stockpiles at an average grade of 109.1 g/t as at December 31, 2015. The Indicated Mineral Resources of 53.8mn

ounces of silver at an average grade of 122.4 g/t, 18.2mn ounces of silver at an average grade of 241.1 g/t at Pirquitas Underground and 8mn ounces of silver in stockpiles at an average grade of 107.3 g/t as at December 31, 2015.

Here is the San Miguel open-pit at Pirquitas.



The Chinchillas property is a less-well-known quantity in comparison. It has near-surface mineralization providing the potential for an open-pit mining scenario, plus conventional metallurgy that has shown high recoveries of silver, lead and zinc to concentrates in bench-scale testing, and access to infrastructure including highways, power and water. The project which hosts a resource of 100mn ounces of silver (155mn ounces in AgEq) in the Measured & Indicated categories and 44mn ounces of silver (90mn ounces AgEq) in the Inferred category.

However, it's vital to note in light of the storming Zinc price that this resource dates from April 2016 when Zinc was a whole different ball of wax. This project has a Measured and Indicated Zinc component of 401mn lbs with a further 548mn lbs

Zn in the Inferred category. With silver having fallen and Zinc having risen, the AgEq equation would register substantially more ounces now and Zinc would be a greater part of the economics. This is the type of stuff that gets our pulse racing.

This updated resource estimate is the result of the Chinchillas Project pre-development activities, funded by Silver Standard, which are being undertaken to evaluate the feasibility of creating a combined mining business with Silver Standard's Pirquitas mine.

What has Happened?

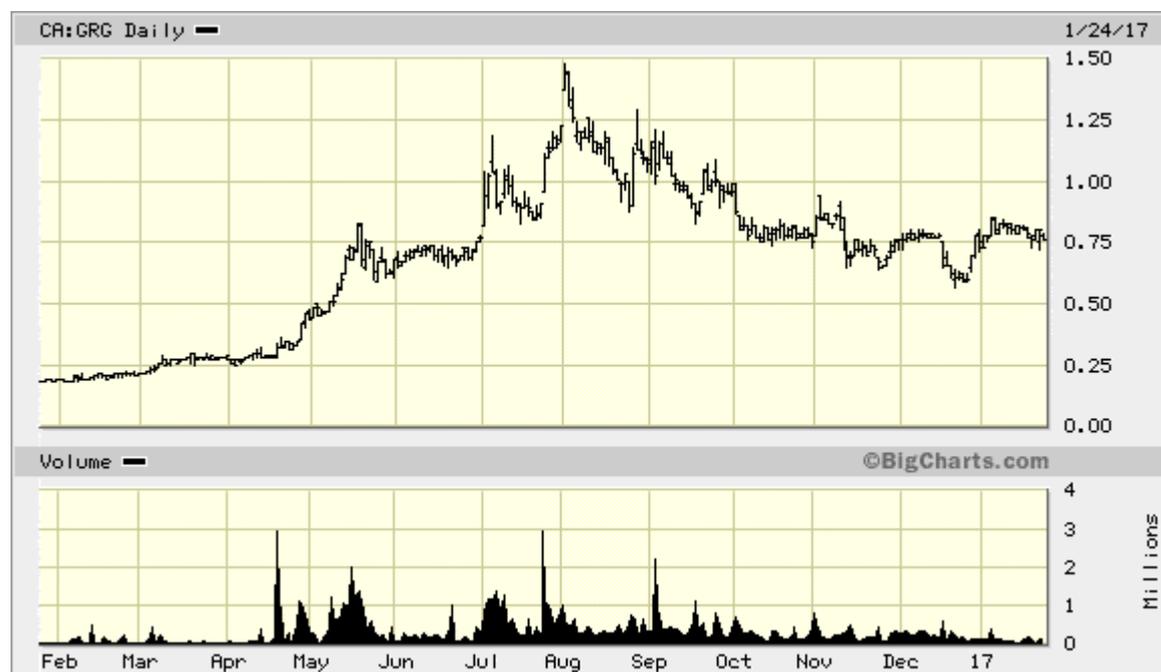
The two major events in the last two months have been the retreat of the silver price from over \$20 and, probably more importantly, the change of government in Argentina. After nearly a decade and a half of irregular iconoclastic governments in Argentina ruled most recently by the dynasts of the Kirchner family and before that the Duhalde regime the country has returned to a certain orthodoxy with the election of Mauricio Macri as President in the last quarter of 2016. While not reinserting Argentine directly into the good books of mining investors it has certainly made thinking about the possibilities not being grounds for insanity. Foreign exchange rules and foreign purchasing restrictions have been freed up thus removing two of the major bugbears of foreign miners operating in the country. This reopening has coincided with the Lithium boom which has placed Argentina at the centre of the action because of its ample supply of *salares* in its northwestern provinces.

With these developments in the foreground the Silver Standard/Golden Arrow alliance has been pattering along in the background. In 2016, work completed included: a Phase VI drill program, an upgraded resource estimate, metallurgical studies, engineering studies, environmental monitoring, and community relations programs. The Environmental Report, which is the

major mine permit application, was submitted to the authorities in September.

Joseph Grosso, chairman, president and CEO of Golden Arrow, went on record in December as saying “as of the end of September 2016, Silver Standard has invested approximately US\$11mn to advance the project towards pre-feasibility”. He also noted that “currently at Chinchillas, there are two drills working to complete detailed geo-mechanical and hydrogeological programs in and around the designed open pit by mid-December. Exploration work is also continuing both at Chinchillas and regionally, to delineate additional potential ore feed for the proposed operation.”

The price action at Golden Arrow seems to echo what has happened with the silver price over the last six months more than any developments on the ground with its Silver Standard deal.



Conclusion

Supposedly J.P. Morgan was once asked how he became so wealthy and his response was “I sold too early”. The question here is whether Silver Standard “sold too early” in engineering the

transaction discussed above. We think not. Production is over the hill at Pirquitas and its best chance of extending its own mine's life and gleaning extra value out of its smelter at the mine. Without an extra source of feedstock, a decision on whether to shutter it will need to be made in the next two months. The obvious solution is to ramp up Chinchillas and start sending a stream of Silver (and Zinc) ore in the direction of Silver Standard's processing facilities at Pirquitas. We are constantly asked where the next big Zinc mine is coming from and have hitherto been saying Chesapeake's Metates project or shrugging our shoulders. However with the silver and zinc planets aligning in Jujuy the combined operation of Pirquitas and Chinchillas adds a major dark horse in the race to production.

As to which of the players to go for, the choice is between Silver Standard with 75% of the combined operation (but with a \$1.5bn market cap) or Golden Arrow with a \$69mn market and 25% of the action. While Silver Standard has two other producing mines (Marigold and Seabee, which are rather ironically both gold mines), Golden Arrow would appear to be the purer play, the cheaper stock and the better leverage to the renascent Argentine mining sector.