

## Solid Resources



*Solid Resources has a promising early-stage tantalum-tin-rare metals project in an accessible region of northwestern Spain where it expects to have a NI 43-101-compliant resource estimate shortly*

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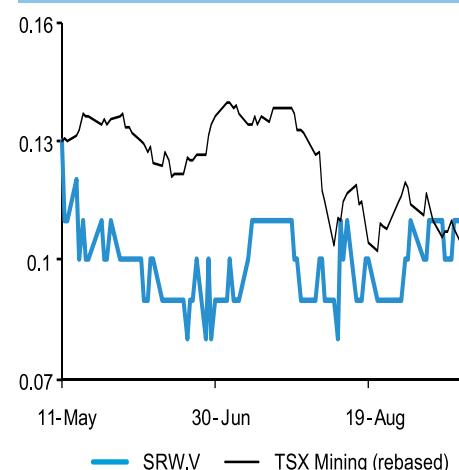
## Key Points

27 Sep 2011  
Price: C\$0.09

**Solid Resources has a promising early-stage tantalum-tin-rare metals project in an accessible region of northwestern Spain. The company has completed a 2011 drill programme, drilling two mineralised zones, and expects to complete a NI 43-101-compliant resource estimate in October, and achieve quick production thereafter.**

- The Doade-Presqueiras property is Solid's flagship project**  
Solid's management is focused on exploration and development of its 100-percent-owned Doade-Presqueiras property in northwestern Spain. The company's optimism is based on historic tin mining that took place on the property and more recent drilling assays that show encouraging quantities of rare metals, notably tantalum, lithium, niobium and rubidium.
- A significant drilling programme now completed**  
Solid commenced drilling early this year at Doade-Presqueiras with the intent of completing 29 holes for 3,500 metres. The drilling was to target a northern zone with 16 infill holes, with 13 holes planned for the southern portion of the property. This programme was subsequently increased to 31 holes based on an unexpected and highly encouraging assay obtained from the northern zone. Metallurgical work is currently under way and should be complete in November.
- Assays to date have returned significant values of tantalum, tin and rare metals**  
Solid now has assays for 18 holes drilled this year into the northern mineralised zone at Doade-Presqueiras, and for 13 holes targeting the southern mineralised zone. Drilling this year suggests the deposit is considerably larger than previously believed. Assays have been significantly higher than in earlier drilling. Local values within the north zone range as high as 207 parts per million (ppm) tantalum, with potential continuity between all areas and with thicknesses of up to 11.5 metres. High-grade mineralisation in the most southern zone, known as Taboazas, has averaged 256 ppm tantalum, 1,216 ppm tin, 0.98% lithium and 167 ppm niobium.
- Tantalum is the emerging story at Doade-Presqueiras**  
Tantalum is a strategic metal, vital for the manufacture of most electronic devices, such as capacitors, cellular telephones, and computers, and without a viable substitute. A substantial proportion of global supply comes from politically troubled areas and a supply shortfall has sparked a significant price increase recently. Development of a "conflict-free" mine in Spain could ease concerns over the source of supplies – particularly in the consumer electronics industry.
- Solid also has an early stage copper-gold prospect under option in Peru**  
Last year, Solid acquired an option to earn a 100-percent interest in an early stage copper and gold prospect in northwestern Peru. Grab samples have returned anomalous values of gold and copper, ranging as high as 30 grammes of gold per tonne and 1.0 percent copper.
- Solid has recently completed a C\$1m financing to further its exploration in Spain and Peru**  
Solid's management has successfully raised C\$1m through a private placement of 10 million shares at C\$0.10. Further, the company has a considerable quantity of options and warrants outstanding that could provide several million dollars in a rising market.
- Valuation of Solid yields a base-case valuation of C\$0.21 per share**  
Our assessment of Solid Resources and its Doade-Presqueiras project, based on reasonable probabilities of exploration success, yields a base-case valuation of C\$0.21. Assuming success at all stages of future exploration and development, our assessment would increase to C\$0.39, and with more optimistic assumptions, to C\$0.83.

Price chart (C\$)



### Value of equity

Expected Value	US\$19.7m
<b>Value per share</b>	<b>C\$0.21</b>
Optimistic Scenario	US\$42.3m
<b>Value per share</b>	<b>C\$0.46</b>

### Company details

Quote	
Shares	
- TSX Venture	SRW.V
- OTC QX	SLDRF.OTCQX
- Frankfurt	YRS.F
Hi-Lo last 12-mos. (C\$)	0.24 - 0.06
Shares issued (m)	93.9
Fully diluted (m)	147.3
Market Cap'n (C\$m)	10.6
Website:	<a href="http://www.solidresources.com">www.solidresources.com</a>

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## Overview

Solid Resources Inc is a Canadian junior mineral exploration company listed on the TSX Venture Exchange, symbol SRW, on the OTCQX under the symbol SLDRF, and on the Frankfurt Exchange, symbol YRS. The company was incorporated more than 20 years ago, but has been under current management for approximately one year. The company has an emerging tin and rare metals project in northwestern Spain that has become its flagship project, and a copper-gold prospect in northwestern Peru.

### The Doade-Presqueiras project tops Solid's priority list

Solid first acquired the Doade-Presqueiras project in the early 2000's under previous management and in 2003 the company completed its initial drill programme, followed by a second programme in 2005. The results of these two programmes were encouraging.

In the northern zone, assays of tin averaged 491 parts per million (0.049%) and ranged as high as 1,141 parts per million (0.114%). Tantalum pentoxide ( $Ta_2O_5$ ) assays averaged 79 parts per million, with local values as high as 267 parts per million, while lithium oxide assays averaged 0.80% and reached as high as 2.0%. The drilling encountered significant widths of mineralisation, reaching 15.2 metres in places. Due to the shallow nature of the mineralisation, the North Zone is believed favourable for open pit mining.

Drilling in the southern portion of the property also encountered mineralisation over significant widths of up to 10.8 metres. Tin assays averaged 924 parts per million (0.092%) and tantalum pentoxide ( $Ta_2O_5$ ) values averaged 267 parts per million. Significant lithium oxide grades were obtained as well, averaging 0.72%. Because of its deeper nature, the mineralisation in the southern zone must be accessed by underground mining.

### A third phase of drilling was completed in 2011

Solid's current management has made Doade-Presqueiras a priority and the company commenced a third drilling programme on the property early this year, wrapping up the work this summer. Eighteen infill holes targeted the northern area, and 13 holes were completed in the southern zone.

### Doade-Presqueiras property



Source: Solid Resources

The purpose of the drill programme is to prove the continuity of the mineralised pegmatite dykes, leading to a NI 43-101-compliant resource calculation by late fall of 2011.

Assays from 18 holes into the North Zone have been received. These tests have averaged 586 parts per million (0.059%) of tin, 93 parts per million of tantalum pentoxide ( $Ta_2O_5$ ), 84 parts per million of niobium pentoxide ( $Nb_2O_5$ ), 801 parts per million of rubidium (Rb) and a lithium oxide ( $Li_2O$ ) content of 0.31%. (The 2003 testing did not assay for rubidium.)

Assays from the southern Taboazas zone have been received. These tests have averaged 649 parts per million (0.064%) of tin, 145 parts per million of tantalum pentoxide ( $Ta_2O_5$ ), a lithium oxide ( $Li_2O$ ) content of 0.77%, 109 parts per million of niobium pentoxide ( $Nb_2O_5$ ) and 848 parts per million of rubidium (Rb).

Localised values were particularly high in one hole, averaging over 2.0% lithium oxide, 2,350 parts per million of tin, 183 parts per million of tantalum and 143 parts per million of niobium pentoxide. These elevated values occurred in a previously unidentified extension of the main zone, prompting management to drill two further holes into the area.

### **Recent assays and price shifts have transformed Doarde-Presqueiras into a tantalum play**

When first envisaged, Doarde-Presqueiras was considered primarily a tin project, although Solid's first drill programme produced significant rare metals assays. Since then, drilling, supply concerns and recent price shifts have transformed the project into a tantalum-dominated rare metals-tin project.

The demand for tantalum is especially strong because of its strategic importance. Tantalum is a metal of vital importance in the electronics industry, used to manufacture capacitors, and high-tech equipment including computers, cell phones, and flat screen televisions. Tantalum is also vital for the manufacture of semiconductors and in the nanotechnology sector.

Traditionally, a substantial proportion of global supply has been sourced from politically troubled areas. Recent legislation has embargoed supply from certain areas and the resulting supply shortfall has sparked a significant price increase. As a result, the development of a "conflict-free" source of tantalum, tin and other rare metals in Spain would be welcomed.

### **Solid has also commenced work on a copper-gold prospect in Peru**

In 2010, Solid acquired an option on a 1,000-hectare property in northwestern Peru that is favourable for copper and gold. Solid can acquire the property by making staged payments of US\$0.5m before the end of 2012. The company has made all required payments to date.

Forty grab samples were collected over the previous two years, within a structural belt approximately 1.5 kilometres long on the property. These tests returned anomalous values of gold and copper, with gold values ranging from 0.05 grammes to 30 grammes per tonne, and copper values ranging from 0.1% to 1.0%.

The assays defined several broad areas of gold and base metal anomalies. Further, small-scale hand mining has been carried out in the past by local prospectors. No drilling has been reported on this property to date. Modern exploration on the Ecuadorian side of the border has recently delineated a number of world-class gold and copper deposits.

Solid is planning a scout drilling programme to collect a minimum of 500 metres of core.

# Valuation

## Our valuation approach

We have valued Solid Resources by assessing the economic potential of the company's flagship project, the Doade-Presqueiras tantalum-tin-rare metals project in northwestern Spain after accounting for:

- the economics of mineral extraction operations by way of tax, operating costs etc;
- the probability-adjusted potential resource by way of classification and size; and
- the probability of production, after taking account of geological, social and regulatory issues.

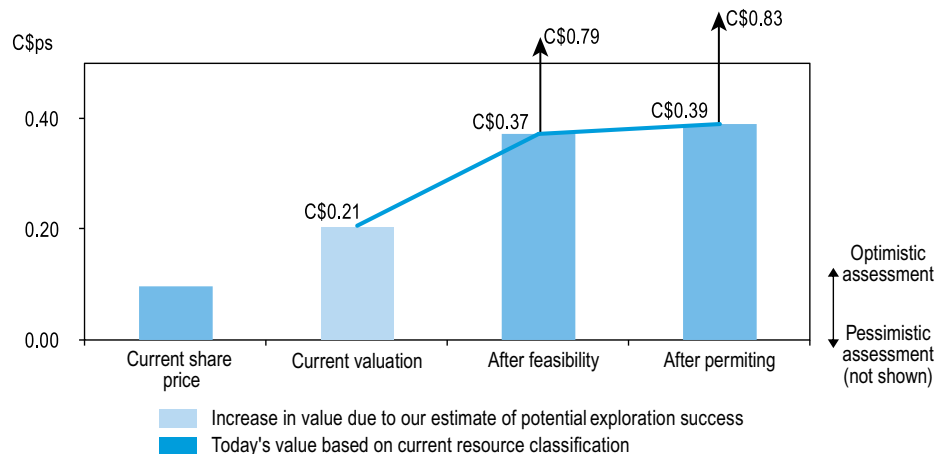
Our assessment depends on commodity prices, both prices prevailing when extraction occurs, and the management's operational response to them. From a valuation perspective, we take account of management's ability to "mothball" operations when prices are below the marginal cost of extraction.

This creates "optionality" – something that traditional NPV fails to capture. This can be understood by thinking of NPV as assuming that positive and negative deviations from our mid-case have a similar likelihood of occurring and hence balance each other. In the resource sector, by contrast, the downside is capped at the cost of "mothballing" the operation.

We capture this by valuing each year's production as an option, assuming that prices revert to mean over the long run – i.e., the mine will only be operated if the commodity price is above the extraction cost. This means that we value the probability that the price is above the extraction cost, rather than the discounted value of the cash flow using the mid-case of the commodity price.

In valuing the economic potential of resource projects, we assume that while commodity prices are volatile they revert to an inflation-adjusted, long-run mean. For example, tin historically trades at US\$11.50 per pound in current dollars, with deviations from mean correcting over 12.0 years with a volatility of 19 percent.

## What Solid Resources could be worth - now and in the future



Source: Objective Capital

## Fair value summary (US\$m)

Scenario	Base	Pessimistic	Optimistic
Property portfolio			
– Doade-Presqueiras Project	29.1	(1.0)	64.4
– other	0.5	0.5	0.5
Total	29.6	(0.5)	64.9
Less: overhead	7.0	7.0	7.0
<b>Expected value of portfolio</b>	<b>22.6</b>	<b>(7.5)</b>	<b>57.9</b>
Add: other investments	1.1	1.1	1.1
Add: starting cash + new funds	1.1	1.1	1.1
Total current value for firm	24.8	(5.3)	60.0
Less: bank & other debt	0.0	0.0	0.0
Total value to equity claims	24.8	(5.3)	60.0
Less: warrants and options	5.0	0.0	17.7
Ordinary equity holders	19.7	(5.3)	42.3
Value per share (US\$)	<b>0.21</b>	<b>(0.06)</b>	<b>0.46</b>
Value per share (C\$)	<b>0.21</b>	<b>(0.06)</b>	<b>0.46</b>

## Expected value of Solid Resources

Scenario	Risked	Doade-	SRW	Value per
	resources	Presqueiras	Valuation	share
	(m tonnes)	property value	(US\$m)	(C\$)
<b>Base case outlook</b>	<b>2.8</b>	<b>29.1</b>	<b>19.3</b>	<b>0.21</b>
<b>Value for scenarios of further exploration success</b>				
Full proved up	7.2	106.7	68.3	0.73
Optimistic outlook	4.8	64.4	41.8	0.45
Pessimistic outlook	0.8	(1.0)	(5.8)	(0.06)
<b>Value with no further exploration success</b>				
Current resource estimate	0.0	(1.0)	(5.8)	(0.06)

### Notes:

- 'fully proven up' scenario assumes that current mineable resource estimates are upgraded to 'Proven' status
- for further details see Doade-Presqueiras property section

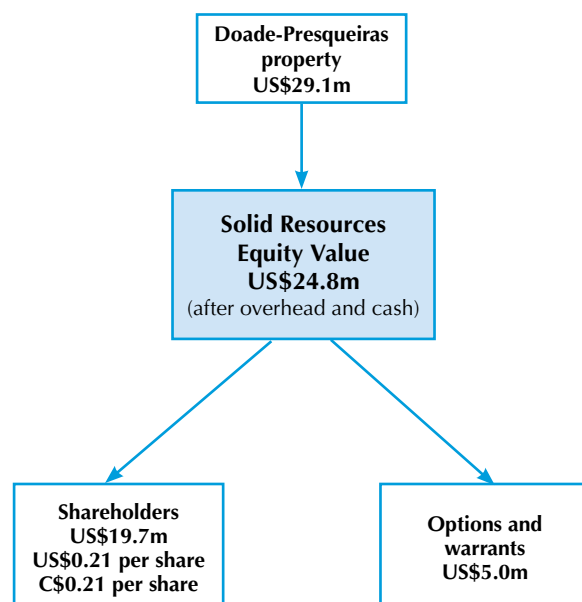
## Sensitivity to market assumption on...

Long run real tantalum price (US\$/lb)	80	2	12	22	32
Value (C\$/share)	0.14	0.17	0.21	0.24	0.27
Change in value (%)	-32%	-16%		+16%	+32%
Time for tantalum price to revert to mean (years)	1	2	3	4	5
Value (C\$/share)	0.16	0.21	0.27	0.34	0.43
Change in value (%)	-25%		+30%	+66%	+108%
Volatility of tantalum price (%)	90%	95%	100%	105%	110%
Value (C\$/share)	0.20	0.21	0.22	0.23	0.24
Change in value (%)	-4%		+5%	+10%	+15%
Change in interest rate (%)	-1.0%	-0.5%	0.0%	+0.5%	+1.0%
Value (C\$/share)	0.25	0.23	0.21	0.19	0.17
Change in value (%)	+22%	+11%		-10%	-20%
Sovereign risk premium (%)	0.0%	1.0%	2.0%	3.0%	4.0%
Value (C\$/share)	0.21	0.17	0.13	0.10	0.07
Change in value (%)		-20%	-37%	-53%	-66%

## Sensitivity to operating assumption on ...

Change in metal recovery rate (%)	60%	65%	70%	75%	80%
Value (C\$/share)	0.07	0.14	0.21	0.27	0.34
Change in value (%)	-66%	-33%		+33%	+66%
Operating Costs (US\$ per milled tonne)	14.25	15.00	15.75	16.50	17.25
Value (C\$/share)	0.23	0.21	0.19	0.17	0.15
Change in value (%)	+10%		-10%	-19%	-29%
Increase in Capital Cost (%)	+0%	+10%	+20%	+30%	+40%
Value (C\$/share)	0.21	0.19	0.18	0.16	0.15
Change in value (%)		-7%	-14%	-22%	-29%

## Components of Solid Resources' entity value



## Doade-Presqueiras Project valuation (US\$m)

Scenarios for exploration success	Base	Optimistic	Pessimistic
<b>Net value of production</b>	<b>265.0</b>	265.0	265.0
Expected mining success*	35%	60%	10%
<b>Expected net value of production</b>	<b>92.7</b>	159.0	26.5
Add: tax shield on depreciation charge	16.2	16.2	16.2
Less: development & operational capex	52.4	52.4	52.4
<b>Value of mining operations</b>	<b>56.6</b>	122.8	0.0
Probability of putting into production **	53%	53%	53%
<b>Expected value of deposit</b>	<b>30.1</b>	65.4	0.0
Less:			
- expect pre-development costs***	1.0	1.0	1.0
- further exploration costs ****	—	—	—
Expected value of project	29.1	64.4	(1.0)
effective risk haircut	87%	71%	100%
Ownership	100%	100%	100%
Solid Resources' s share	29.1	64.4	(1.0)

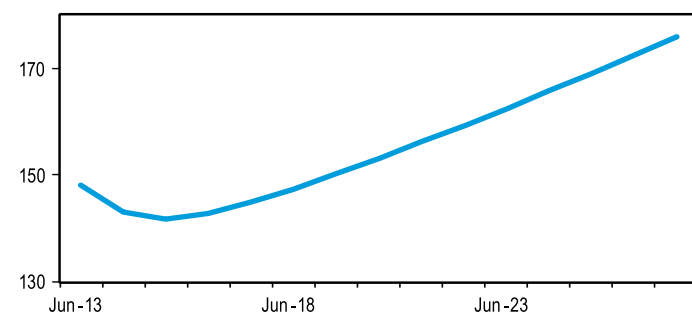
- \* portion of reserve/resource expected to be converted to an extractable resource, probability-weighted for our confidence they will be proven-up
- \*\* probability of successfully completing pre-feasibility, full feasibility and required permitting and actual construction in realistic timeframe
- \*\*\* shown as expected value of being incurred after allowing for likelihood of reaching each development stage
- \*\*\*\* present value

## Commodity assumptions

Tantalum prices are assumed to be mean reverting based on:

Historic long run real level (shown at current prices)	100.0 US\$/lb
Avg time to revert to mean	2.0 years
Volatility	95%
Inflationary price growth	2.0%

## Expected tantalum price (inflation adjusted) (US\$/lb)



## **Our key assumptions**

Solid's primary asset is its Doade-Presqueiras tin-rare metals project in northwestern Spain.

We model a hypothetical mine based on the following rough assumptions:

- Future delineation of 16 million tonnes of mineralisation that could translate into a mineable resource of eight million tonnes.
- A hypothetical open pit mine operating at 1,000 tonnes per day, expanding through introduction of underground mining to 1,500 tonnes per day in year four and to 2,000 tonnes per day in year seven.
- Initial capital cost of US\$35m.
- Initial operating (mining, processing and transportation) costs of US\$20 per tonne for open pit operations and US\$45 per tonne for underground mining.
- Commencement of production in Q1 2013.

## **Our results**

After allowing for likely economics, our analysis suggests an expected value of C\$29.1m for Solid's Doade-Presqueiras project. We further ascribe a nominal book value of C\$0.5m for the company's Peruvian gold and copper prospect.

After allowing for corporate overhead and outstanding warrants, our assessment of Solid's ordinary equity results in a base-case current valuation of C\$19.7m, or C\$0.21 per share, with an optimistic current valuation of C\$0.46 per share, assuming higher probabilities of exploration and development success beyond our hypothesised estimates.

Our analysis suggests that Solid's current value is based largely on successful development of Doade-Presqueiras, with increasing upside potential with continuing exploration as the company achieves important milestones, such as formal delineation of a resource, successful completion of a preliminary economic study and a formal feasibility study.

Should there be no further or limited exploration success, then the current level of risked resources may not be sufficient to justify continued extraction. Alternately, if all hypothesised mineralisation is ultimately converted to a mining reserve and were to be available for exploitation,, they could yield up to C\$1.36 per share.

Our base-case and optimistic outlooks, assuming continued success through permitting and construction, result in valuations of C\$0.39 and C\$0.83 per share respectively. Delineation of resources on the company's Peruvian property could add further to our modelled valuation of Solid.

Solid Resources' Doade-Presqueiras project is still at an early stage of exploration and development and therefore carries a high risk that adverse developments may render the project uneconomic. The ability of Solid to economically exploit the mineralisation believed present on the property depends on several key factors, including...

### **...continuing "scarcity" of rare metals**

Future profitability depends on continuing price increases for rare metals, which will require demand to continue to outstrip supply. It must be noted that many rival companies have taken up the challenge of locating, delineating and developing rare metals deposits and one large discovery could alter the currently favourable price regime considerably.

### **...the company's ability to adequately delineate a rare metals deposit**

Success depends on Solid's continuing exploration programme adequately identifying an economically viable deposit at Doade-Presqueiras, which currently does not have a resource outlined to NI 43-101 standards.

### **...the company's ability to design, construct and operate an economic discovery**

Assuming exploration success, Solid's success would then depend on the company's ability to envisage, engineer and construct a mine at Doade-Presqueiras within stringent cost and time constraints. Unforeseen developments could adversely impact the company's plan. These could include fuel and commodity costs rising faster than expected, adverse interest rate or exchange rate moves, or unexpected engineering and logistical issues.

### **...the company's dependence on key personnel**

The success of Solid Resources will depend heavily upon the company being able to hire and keep key personnel acquainted with mining issues in Spain and possessing the specialised knowledge required to exploit a tantalum, tin and rare metals deposit.

### **...the company satisfactorily meeting environmental and permitting regulations**

Environmental regulations related to mining could pose unforeseen operational and engineering challenges, and in extreme cases could negatively impact the company's ability to obtain the required permits for building and operating a mine.

### History

Solid Resources is a junior resource explorer currently based in Edmonton, Alberta, Canada and listed on the TSX Venture Exchange (TSX-V: SRW). The company, co-founded by Alan Harter, has been in existence for over 20 years but has experienced a number of changes of control during that time.

The latest change in management occurred last autumn, when Greg Pendura replaced Joerg Schuetz as Chief Executive Officer. That move completed what was nearly a complete turnover in the company's insiders. The previous year, Randy Hayward was appointed chairman. He was joined on Solid's board by Rick Gliege. The only continuing director, Harry Allen McKinders, has been on Solid's board since 1998.

### Corporate Strategy

Solid considers itself primarily an explorer for rare metals, a company willing to consider prospects both overseas and in Canada. Currently, Solid's two exploration properties are international projects, the company having recently divested itself of the Bear property in Canada's Northwest Territories.

Solid acquired an initial 60-percent interest in what is now the Doade-Presqueiras property in northwestern Spain in 2001 during a period of high tantalum prices. Since then, the project has intermittently been the company's primary focus, a focus that has become much sharper under current management.

Solid now holds a 100-percent interest in Doade-Presqueiras, which the company considers its flagship project. The company also holds an option to acquire a copper-gold project in northwestern Peru.

### Capital Structure

As of Mar. 31 2011, Solid had 80.96 million shares on issue, an increase from 46.3 million shares as of Dec. 31 2009, and 79.3 million shares on Dec. 31 2010, the end of the company's previous two fiscal years.

As of Mar. 31 2011, Solid had 7.4 million share purchase options outstanding, most of them exercisable at C\$0.17 per share. This is an increase from the 6.7 million options outstanding at the end of 2010, 700,000 options having been issued with a C\$0.13 exercise price during the first quarter of 2011.

Solid also has a substantial number of share purchase warrants outstanding. As of Mar. 31 2011, the company had 41.64 million warrants, exercisable at a weighted average of C\$0.14, outstanding.

Solid currently has 93.9 million shares issued, the result of exercise of options and warrants and a recently completed private placement of 10 million shares at 10 cents, which raised C\$1m. The cash is earmarked for Doade-Presqueiras, the Peruvian project, and for general working capital.

The shares sold in the latest private placement were accompanied by one share purchase warrant, exercisable at C\$0.15 over a two-year period. Exercise of these, and previously outstanding warrants and options would provide Solid with over C\$8m in cash, but at the cost of considerable dilution to existing shareholders.

### Tantalum

Tantalum is a hard, ductile, blue-gray, lustrous transition metal that is highly corrosion resistant and has a high melting point. It is part of the refractory metals, which are widely used as a minor constituent in alloys. The chemical inertness of tantalum makes it a valuable substance for laboratory equipment, and as a substitute for platinum.

Tantalum, which always occurs together with the chemically similar rare metal niobium, occurs in the minerals tantalite, columbite, and in coltan, which is a mix of columbite and tantalite.

### Demand

The main use of tantalum today is in electronic equipment, primarily as tantalum capacitors or high-power resistors, in items such as cellular telephones, DVD players, video game systems and computers. The electronics industry accounts for over 70 percent of annual consumption of tantalum. Its use – for which there is no substitute – in the key components of every-day electronic components and high-tech and military hardware makes tantalum a strategic metal.

Tantalum is also used to produce a variety of alloys that have high melting points, are strong and have good ductility. When alloyed with other metals, tantalum is used in making carbide tools for metal-working equipment, and in the production of superalloys for jet engine components, chemical process equipment, nuclear reactors, and missile parts.

Because of its ductility, tantalum can be drawn into fine wires or filaments. As such the metal is used for evaporating metals such as aluminium. Tantalum is resistant to corrosion by bodily fluids and is non-irritating, making it widely used in the manufacture of surgical instruments and implants.

The following materials can be substituted for tantalum, but usually with less effectiveness: niobium in carbides; aluminum and ceramics in electronic capacitors; glass, niobium, platinum, titanium, and zirconium in corrosion-resistant equipment; and hafnium, iridium, molybdenum, niobium, rhenium, and tungsten in high-temperature applications.

### Supply

During 2010, global production of tantalum reached 670 tonnes, led by Brazil which accounted for 170 tonnes of the metal, followed closely by Australia. Global reserves of tantalum are currently reported at 110,000 tonnes, much of it in Brazil and Australia. Several African nations are also significant producers of tantalum, but these countries are coming under greater scrutiny for their political unrest and human rights violations.

In July 2010, the United States passed the Dodd-Frank Wall Street Reform Bill, wide-ranging legislation that included provisions to restrict the import of commodities produced in troubled nations. This legislation has the potential to significantly reduce the supply of tantalum, other rare metals and other minerals. As a result, the market will require production from other, politically stable nations, which can demonstrate and deliver long-term supply.

### **Prices**

Tantalum metal and concentrates are not traded in a central market. Rather, a spot market exists in which buyers and sellers establish prices on a transaction-by-transaction basis. Various studies are conducted which keep track of prices. During the 1950's the price for the metal was approximately US\$3 per pound. Today, a typical spot price for a 30% tantalum concentrate would be in the range of US\$150 per pound while tantalum oxide is in the range of US\$250 per pound, a clear indication of the increased demand for tantalum products.

We currently model the price of tantalum with a long-term average real price of US\$100 per pound in 2011 dollars, a mean time to revert of 1.6 years and a volatility of 95 percent.

### **Tin**

Tin is a malleable and ductile metal with a silvery-white colour and a low melting point, which is not easily oxidised. Tin is a highly crystalline metal and because of its twin crystal structure, bending a bar of tin generates a crackling sound. Tin makes up just a small percentage of the earth's crust – it is the 49th most abundant element averaging just two parts per million compared with 75 parts per million for zinc – and in order for the metal to be economically recovered, a deposit must have been concentrated by alluvial or geological processes. Nevertheless, tin ore is very easy to mine.

Tin does not occur naturally by itself and must be extracted from a base compound, typically cassiterite ( $\text{SnO}_2$ ), a tin oxide ore that is the only commercially noteworthy source of tin, which is found on Solid's Doade-Presqueiras property. Most of the world's tin is mined from placer deposits that may average no more than 0.015 percent tin.

### **History**

Tin mining and consumption began during the Bronze Age, approximately 3000 BC, when metal alloys were first created. The earliest bronze alloys averaged less than 2 percent tin, suggesting its inclusion was by accident. Once it was noted that adding tin to copper increased the hardness of the resulting alloy, the ratio of tin to copper increased significantly.

The first evidence of tin being used to make bronze was noted in the Near East and the Balkans, although the origin of the tin and evidence of mining is not apparent. Europe's earliest tin mining occurred near Erzgebirge, near the border of Germany

and the Czech Republic, approximately 2500 BC. From there, knowledge of tin mining spread to the United Kingdom, France and the Iberian Peninsula. Demand for tin continued to grow through Roman times and by the medieval period, mines near Devon and Cornwall largely supplied the European market.

Tin began to be exploited in China and the Far East around 2,000 BC although the deposits in Yunnan province were not mined until later, about 700 BC. Elsewhere, tin mining industries developed later. In Africa, the Bantu culture began mining tin after 1,000 AD, around the same time mining began in the Americas. Tin mining in Australia did not commence until the arrival of Europeans in the 1600s.

### **Demand**

The demand for tin is not subject to large fluctuations and continues to grow at approximately 5 percent annually. The steady demand is largely a product of its primary use, as a basic ingredient in solder. Approximately 50 percent of annual tin production goes into solder production. All modern electronic appliances and components contain tin. For example, a typical cellular telephone contains approximately eight grammes of tin.

Tin bonds readily with iron and is used for coating lead, zinc and steel to prevent corrosion. Tin-plated steel containers are used widely for food preservation, accounting for another large amount of tin consumption, approximately one-sixth of annual supply. A comparable amount of tin is used by the chemical industry with the remainder used to create alloys, mainly bronze, and other uses.

### **Supply**

Mining yielded 261,000 tonnes of tin during 2010, matching the previous year's production. China was the largest producer, accounting for 115,000 tonnes, followed by Indonesia at 60,000 tonnes and Peru at 38,000 tonnes.

China reports the largest unmined reserve of tin, at 1.5 million tonnes, followed by Indonesia at 800,000 tonnes, Peru at 710,000 tonnes and Brazil at 590,000 tonnes. In total, the global tin reserve stands at 5.2 million tonnes.

### **Price**

The price of tin was US\$5.40 per pound in late 2008. The metal performed strongly during 2010 and subsequently soared to a record high of over US\$14.00 per pound early in 2011, largely because of decreased tin production in Indonesia. Tin production and pricing has been volatile because of increasing reliance from mining in Congo-Kinshasa.

We currently model the price of tin with a long-term average real price of US\$11.50 per pound in 2011 dollars, a mean time to revert of 12.0 years and a volatility of 19 percent.

## Other Target Metals

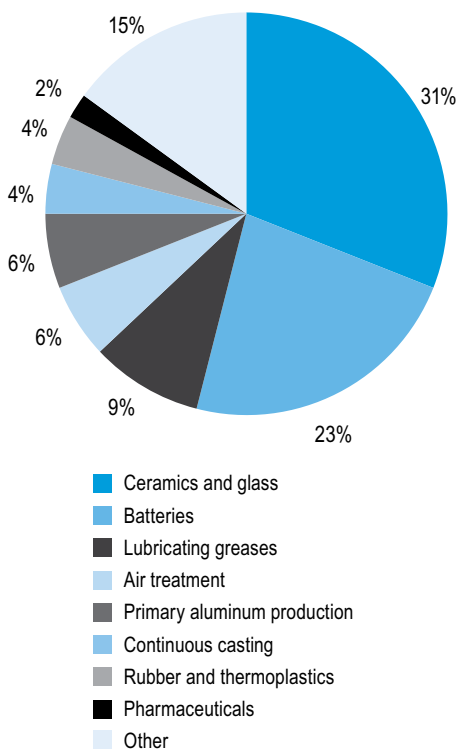
### Lithium

Lithium is a soft, silver-white metal belonging to the alkali metal group of elements. With an atomic number of 3, lithium is the lightest metal and the least dense solid element. Like all alkalis, lithium is highly reactive and inflammable and is therefore typically stored in mineral oil.

When cut open, lithium exhibits a metallic luster, but contact with moist air corrodes the surface quickly to a dull silvery gray, then black, tarnish. Because of its high reactivity, lithium never occurs free in nature, appearing only in compounds that are usually ionic. Lithium occurs in a number of pegmatitic minerals, but is also commonly obtained from brines and clays. On a commercial scale, lithium is isolated electrolytically from a mixture of lithium chloride and potassium chloride.

The nuclei of lithium are not far from being unstable, since the two stable lithium isotopes found in nature have among the lowest binding energies per nucleon of all stable nuclides. As a result, lithium is less common than 25 of the first 32 chemical elements.

#### Lithium demand



Source: Solid Resources

#### Demand

Trace amounts of lithium are present in the oceans and in all organisms. The element serves no apparent vital biological function, since animal and plants survive in good health without it but non-vital functions cannot be ruled out. The lithium ion  $\text{Li}^+$ , administered as any of several lithium salts, has proved to be useful as a mood-stabilising drug due to neurological effects of the ion in the human body.

Lithium and its compounds have several industrial applications, including heat-resistant glass and ceramics, high strength-to-weight alloys used in aircraft, lithium batteries and lithium-ion batteries. These uses consume more than half of lithium production. The use of lithium in batteries is becoming the most important use of the metal and demand is expected to grow substantially in the medium and longer terms.

#### Supply

Today, lithium minerals are mined exclusively from pegmatite hard rocks using traditional mining techniques and methods, either through open pit or underground hard-rock mines. Worldwide, numerous deposits, primarily containing spodumene and petalite, are being intensively explored for lithium. The ore is typically processed and concentrated for further processing into lithium compounds.

Mining during 2010 produced 25,300 tonnes of lithium, a substantial increase over the 18,800 tonnes produced in 2009. Chile was the largest producer at 8,800 tonnes, followed closely by Australia at 8,500 tonnes. (Production in the United States is unreported to avoid disclosure of proprietary data.)

Global reserves currently stand at approximately 13 million tonnes, led by 7.5 million tonnes in Chile and 3.5 million tonnes in China. Identified lithium resources have reached 29 million tonnes, including 4.0 million tonnes in the United States, 9.0 million tonnes in Bolivia and 7.5 million tonnes in Chile.

### **Price**

The price of lithium carbonate has increased dramatically since bottoming at US\$0.75 in the early 2000s. Increased demand pushed the price to US\$2 per pound late in the decade and the price has now surpassed US\$3 per pound.

We currently model the price of lithium with a long-term average real price of US\$2.70 per pound in 2011 dollars, a mean time to revert of 7.4 years and a volatility of 15 percent.

### **Niobium**

Niobium is a soft, grey, ductile transition metal, one of the rare metals. Niobium has physical and chemical properties similar to those of the element tantalum and the two are therefore difficult to distinguish. Niobium exists commercially in columbite and pyrochlore ores.

### **Demand**

Niobium is used mostly in alloys, much of it in the manufacture of specialty steels, including material used in the construction of gas pipelines. Although a typical alloy contains just 0.1 percent niobium, the metal significantly improves the strength of steel. The temperature stability of superalloys containing niobium makes the material an important commodity in the manufacture of jet and rocket engines.

Superconducting alloys, also containing tin and titanium, are used widely in the manufacture of superconducting magnets, such as those employed in MRI scanners.

Other applications of niobium include uses in welding, electronics, nuclear industries and optics. Niobium's low toxicity and its ability to be coloured through anodisation make the metal useful in the numismatics and jewellery sectors.

### **Supply**

Global production of niobium stood at 63,000 tonnes in 2010, a slight increase from 62,900 tonnes in 2009. Nearly all of that, 58,000 tonnes, came from Brazil, with Canada accounting for 4,400 tonnes. Nearly all of the global reserve of 2.9 million tonnes resides in Brazil, although several other countries are developing significant niobium resources.

### **Prices**

Niobium prices have been increasing along with other rare metals. Current spot prices are in the neighbourhood of US\$20 to US\$25 per pound.

We currently model the price of niobium with a long-term average real price of US\$19.80 per pound in 2011 dollars, a mean time to revert of 16.0 years and a volatility of 19 percent.

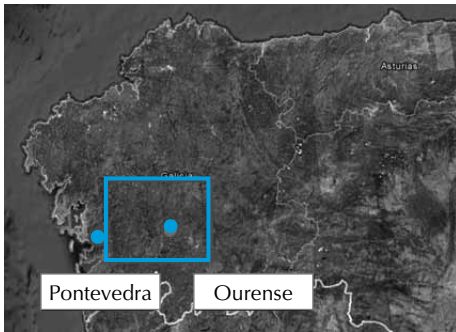
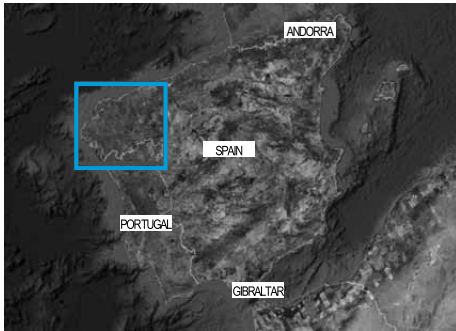
# The Doade-Presqueiras Property

## Location, climate and infrastructure of the property

The centre of the 3,690-hectare Doade-Presqueiras property, also known as Alberta 1, lies 25 kilometres east of Pontevedra, a deep-sea port on the northwestern coast of Spain in the province of Galicia. The concession is oriented roughly north-to-south, covering a belt of mica schist hosting numerous en echelon pegmatite dykes.

## Doade-Presqueiras property

About 25 km's east of Pontevedra in northwestern Spain



Source: Solid Resources

The project lies in an area with good all-weather access. The property is connected to Pontevedra by a series of secondary roads that criss-cross the property running from Cerededo in the north toward the communities of Alfonsin, Doade, Rubillon and Taboazas. Cerededo is located on a main highway running from Pontevedra to Orense.

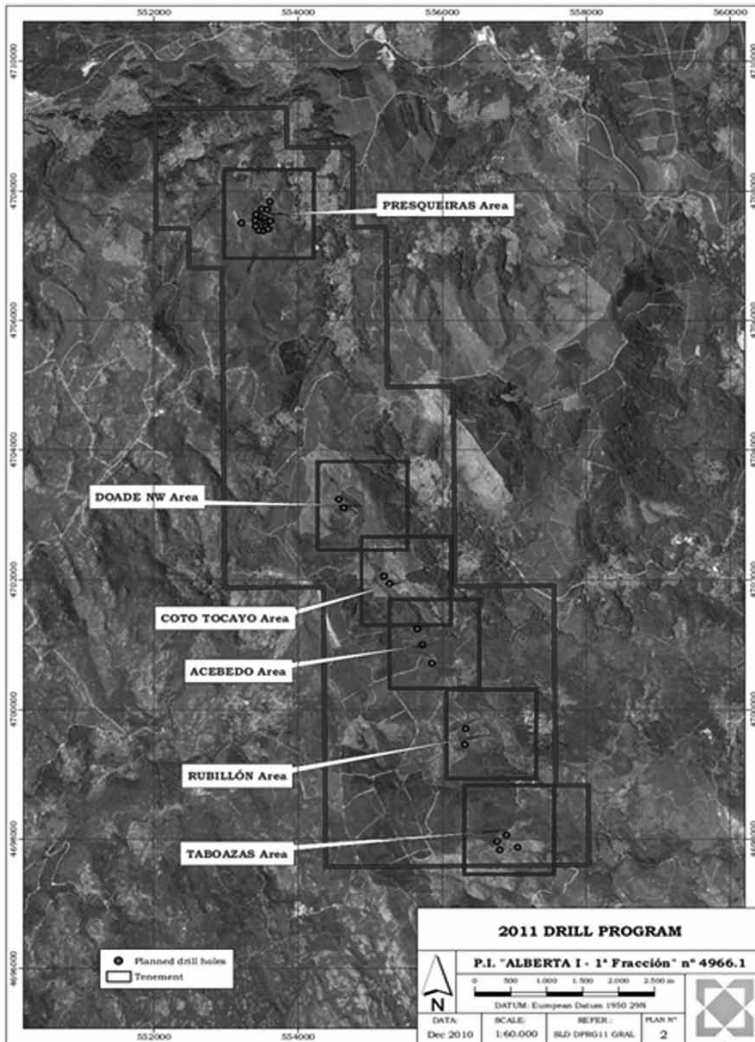
The topography of the area is rather rugged, with wooded hills and ridges separated by narrow steep valleys interspersed with rivers and streams. The elevation ranges from 500 metres to 900 metres above sea level, with flat regions in the valleys used by local inhabitants for small-scale agriculture, generally vegetable plots, some cereal crops and pasture for livestock.

The average rainfall is about 1,100 millimeters and occurs mostly from November to February. Summers see the hottest days whilst January is the coldest month and snow is intermittently present at higher elevations for short periods.

The hills and valleys are covered with dense prickly underbrush of gorse, heather and bramble bushes which, during periods experiencing significant rainfall, vigorously re-establish in the cleared areas around adits and trenches. The forested areas consist mainly of pine, oak and eucalyptus, providing a good habitat for wild pigs and deer, the only wildlife native to the property.

Several villages are located within the Doade-Presqueiras permit areas. The local residents of these villages have been involved with small scale mining activity for tin at various locations on the property, and they have experience and knowledge of the mineralisation beneficial to its development. Further, finding a suitable workforce should not be a problem, as unemployment is high in Spain and especially so in the rural areas of Galicia.

Uninterrupted year-round production of resources from the property is feasible, given the climate of the area. Further, local infrastructure is amenable to placing any economic deposit into production without massive capital costs for power and water. Several hydro power lines traverse the property and wind powered electricity is becoming established in the area. Ample quantities of water are available all year from the local rivers.



Source: Solid Resources

### Geology of Doade-Presqueiras

The Iberian Peninsula contains rocks from every age from Ediacaran to recent, and almost every kind of rock is represented. The core of the Iberian Peninsula consists of an Hercynian cratonic block known as the Iberian Massif. In the northeast this is limited by the Pyrenean fold belt, and in the southeast it is limited by the Betic fold chain. These two fold chains are part of the Alpine belt. The western peninsula is delimited by the continental boundary formed by the magma poor opening of the Atlantic ocean. The Hercynian fold belt is mostly buried by Mesozoic and Tertiary cover rocks on the east side but in places outcrops through the Iberian Chain and the Catalanian Coastal Ranges.

The property lies in part of a much larger structural unit of the Iberian Massive created during the Hercynian Orogeny. The lower and oldest portion of the Massive hosts a wide asymmetrical syncline, the Forcarei Synform, with a north north-west to south south-east striking fold axis. This synform sequence is up to seven kilometres thick and is essentially of meta-sedimentary lithology identified as the Parano Group, which hosts the rare mineral pegmatites on the Doade Presqueira property.

The intrusion of the fertile S-type Cerdedo two-mica granite along the western boundary and the development of rare element pegmatite dykes into the basal units of the Forcarei Synform occurred in the third phase of the Hercynian Orogeny. The Beariz granite is situated along the lower third of the concession, outside the eastern boundary, possibly hosting historic gold and tungsten mineralisation and staked in part by I.P. No. 4790 (Jonas). A geological map of the area prepared in 1967 by Hensen showed a Late Hercynian biotite granite several kilometres south of the property boundary. This is not considered to be associated with the rare metal pegmatites.

The rare metal pegmatites are restricted to a belt about 200 to 300 metres wide and extend the length of the property, 14 kilometres in a north-northwest to south-southeast direction conformable to the regional schistosity. There are approximately 40 pegmatite dykes exposed at surface within this belt of the host Parano metasedimentary schist. The rare element pegmatites occur as “en echelon” dykes up to 11 metres thick and have a strike length of up to 500 metres. The exception is the sill-form pegmatite in the Presqueira area that dips gently to the southwest and is up to 13 metres thick. Recent manifestation of the Hercynian Orogeny is exhibited in the transcurrent faults which lie predominantly along a north-northeast-south-southwest axis, and only rarely along an east-west axis. These faults cut both the granite and the Parano sediments; however, the impact on the pegmatite dykes in the area is not known.

### ***The rare metal pegmatites***

The geochemical and mineralogical characteristics of the pegmatites, and their internal structure and their conditions of emplacement classifies them as LCT (lithium, cesium tantalum) rare metal pegmatites (Cerny 1991-Appendix B). Pegmatites occur as sharply bounded homogeneous to zoned bodies within metamorphic host rocks. Hard rock lithium deposits are in close relationship with granitic pegmatite dykes rich in spodumene, petalite and possible lepidolite. Within a pegmatite field, the enrichment of the different rare metals in the pegmatite dykes is a function of their distance from the co-genetic intrusion. Scout drilling in 2003 on the Doade-Presqueiras concession in the southern portion of the property intersected the pegmatite dykes situated furthest from the co-genetic source. Rare metal pegmatites may host several economic commodities such as tantalum, tin (cassiterite), lithium (spodumene and petalite), rubidium (lepidolite and K-feldspar), and cesium (pollucite) collectively known as rare metals, and ceramic grade kaolin rich in feldspar, mica and quartz.

Dyke attitude and shape is variable ranging from tabular (Presqueira region) to moderately dipping at 30 to 50 degrees westerly towards the source granite in the southern portion. According to Hensen, the pegmatites are leucocratic with albite as the main constituent along with K feldspar at 15%, quartz at 25% to 60%, and muscovite at 5% to 15%.

Drilling to date has intersected surface and blind dykes varying in width from 0.5m to over 10m true width to a vertical depth of 150m and are believed to continue down dip (Spat. 2004). Petalite, spodumene and other leucocratic minerals are difficult to recognise macroscopically because of the white color and the small grain size. The one-to-two-metre-thick contact zones between the pegmatites and the host schist may contain fine grained muscovite and quartz along with very fine grained cesium (possibly pollucite) and apatite. With increasing degrees of fractionation away from the granite/schist contact, the following types of elements in the pegmatites have been distinguished:

- Type 1 occurs generally within 500 to 1,000 metres of the granite-pegmatite contact, containing albite, quartz, muscovite, biotite and K feldspar with aplitic texture.
- Type 2 occurs beyond 1,000 metres from the granite-pegmatite contact, containing mainly albite, quartz and muscovite.
- K feldspar is rare, while biotite disappears completely. Accessory minerals are garnet, tourmaline and tantalum/tin mineralisation. Lithium occurs as one-to-ten-centimetre-wide concretions, partly associated with kunzite.

Rock samples of Type 2 pegmatites returned values up to 230 parts per million (ppm) tantalum, 2,300 ppm tin and 1,600 ppm lithium. There appears to be zonality to the Doade-Presqueiras pegmatite field with increasing fractionation of rare element minerals from west to east away from the granite/schist contact and a southward increase in complexity and higher mineral content of lithium, tin and tantalum. Chip sampling of pegmatite dykes in the southern portion of the property by previous operators and results from the 2003 drill programme indicated stacked pegmatite dykes with widths of over 10 metres returning high tantalum and lithium assays.

### ***The granite mineralogy***

According to Cerny (1991), the LCT granite sources (S-type) are part of the orogenic suites associated with crustal shortening in zones of subduction and continental collision with isotopic indications of a mixed crust and mantle source. Fertile granites contain unique minerals and textures such as blocky potassium feldspar crystals, graphic muscovite with quartz overgrowths. Bulk analysis of the muscovite and potassium feldspar in the granite may indicate elevated levels of tantalum, rubidium and cesium.

The resulting granitic magmas will fractionate as they rise with feldspar and quartz crystallising out of the system and concentrating rare element minerals in the remaining magma. The Cerdedo Granite forming the western margin of the concession is an S-type granite derived from the melting of subducted

metasedimentary crust. The mineral components are potassium feldspar at 30% to 35%, plagioclase at 25% to 30%, Quartz, 40%, muscovite, 10%, biotite, 5% to 7%, with accessory minerals of zircon, apatite and opaque minerals.

The lithia content of the biotite in the granite is low and does not seem possible to provide a pool of rare elements indicating a genetic relationship between the granite and the pegmatites. Recent studies have proposed that pegmatite production and increased rare element content occurs during anatexis (partial melting of the host metasediments at the lowest levels of the crust) and regenerated as magma believed to carry the rare elements derived from the host metasediments. The more evolved dykes are located farthest from the granite/metasediments contact which is considered as the parental granite owing to its structural and geochemical characteristics and close spatial association.

### ***Metamorphism***

The third phase of Hercynian metamorphism was so intense that the granite intrusion produced very weak aureoles of contact metamorphism with the Parano metasediments and at the pegmatite-schist contacts. This intense regional metamorphism also facilitated the pegmatite dykes intruding between one kilometre and two kilometres into the Parano metasediments without significant chill margins. This infers that the pegmatites and the host metasediments were close to the same temperature allowing a longer period of fractionation.

The Parano Group metasediments are a grey to brownish quartzitic two mica schists of Paleozoic age with feldspar and locally andalusite and garnet as Hercynian metamorphic products. The intensity of metamorphism decreases from the north to the south with biotite more common in the north and chlorite to the south in the Forcarei Syncline.

### **Deposit type**

The LTC rare element pegmatites are derived from a fertile S-type, peraluminous (Al rich) granite produced by partial melting of preexisting sedimentary source rocks (Parano sediments). The granitic melt may crystallise into several different granitic units including the two-mica granite (Cerdedo granite) located along the western boundary of the property. The residual melt enriched in incompatible elements (rubidium, cesium, niobium, tantalum, and tin) and volatiles (water, lithium, fluorine, beryllium and phosphates) from such a pluton can then migrate into the host rock and crystallise as pegmatite dykes.

The lithium, cesium, tantalum (LCT) type pegmatites are almost exclusively intruded into a compressive environment during collision of continental plates and mountain building. The degree of fractionation and rare-element content of the pegmatite dykes increases with increasing distance from the fertile parent granite. The abundance of rare element lithophile elements in pegmatites is the result of

classic crystallisation selection of compatible versus incompatible trace elements in the magma melt and not the result of anomalously enriched source rocks from which the melt was formed as a result of eutectic melting.

The crystallisation of granitic magma contains several percent dissolved water and as the magma cools, feldspar is the first mineral to crystallise leaving an increasing water rich magma containing rare elements such as lithium, beryllium and niobium which because of large ionic radius do not readily substitute in the main granitic minerals. When this fraction is injected into the country rock a pegmatite dyke is formed. The pegmatite dykes situated farthest from the fertile granite source crystallise at a greater depth and tend to contain higher values in tin, niobium, tantalum, beryllium and lithium minerals. These gross characteristics are readily apparent on the concession with strong albitisation of the dykes and increased fractionation from west to east away from the granite/host mica schist contact and a north to south increase in lithium, tantalum and tin mineralisation due to greater distance from the granite/schist contact.

### **Mineralogy**

The pegmatites are leucocratic and albite is the main mineral followed by quartz, potassium feldspar and muscovite. Petalite, spodumene and most of the accessory minerals are difficult to recognise macroscopically because of their white colour and fine grain size. Cassiterite, columbite-tantalite and beryl are more easily identified by their larger grain size and dark colour. The highest grades of tin and tantalum can be correlated in the same position within the dykes whereas the higher lithium grades (petalite, spodumene) may occur in the pegmatite dykes and/or as lepidolite in the hanging wall/footwall schists near the contact. Cesium (pollucite) grades are reported in the host mica schist near the pegmatite-schist contact.

Additional analysis for rubidium coincided in place and grade with lithium with values reaching 2,200 ppm/1m (Spat, Burkhardt, 2004). Some of the minerals believed present on Doade-Presqueiras are as follows:

- Petalite, a lithium-aluminum silicate ore of lithium. Petalite is the only basic raw material suitable for the production of “glass ceramics” used in stove tops and cooking utensils due to the exceedingly low thermal expansion and high tensile strength. The pressure-temperature conditions of the pegmatite system influences the formation of either petalite or spodumene. Primary petalite in the pegmatite system can be geochemically altered to spodumene and quartz.
- The pink clay mineral “kunzite” is the alteration mineral of petalite and was observed in the Presqueira area.

- Spodumene, a lithium-aluminum silicate, an ore of lithium. Spodumene and petalite are difficult to differentiate from albite in the pegmatite dykes because of similar light to whitish colour and small grain size. In the central and southern portion of the property, Hensen noted that spodumene was more common in the dykes in the Acebedo area, where it constitutes 25% to 35% of the rock. The white to colourless crystals are fine grained and have prismatic to platy habit. Spodumene replaces K feldspar and is commonly associated with quartz and albite within the dykes.
- Lepidolite, a potassium-lithium-aluminum silicate; an ore of lithium, is the field term for any light-coloured lithium bearing mica where lithium cations will substitute for some of the aluminum in the mica crystal structure. Lepidolite consists of pale lilac-to-rose-coloured micaceous plates occurring mainly in granite pegmatites associated with quartz, feldspar, albite and spodumene. Lithium minerals are also found within at least two metres of the contact zone in the hanging wall and footwall of the host mica schist and frequently return grades over 1,000 ppm.
- Cassiterite, or tin oxide, is an ore of tin. Cassiterite is found dispersed through the pegmatite as crystals to 0.5 centimetres in size. Macroscopically, the mineral is black to reddish brown. Cassiterite is more commonly associated with the lithium rich sections of the pegmatite.
- Columbite, or tantalite-iron-manganese-tantalum-niobium oxide, is an ore of niobium and tantalum.
- Columbite and tantalum share a portion of their crystal structure to form a series of minerals with slightly different characteristics. These minerals are found together in granitic pegmatites rich in lithium and phosphorous minerals. It is often associated with albite, spodumene, cassiterite, lepidolite, tourmaline and apatite. Columbite is another name for niobium and is the most widespread niobium mineral with 78%  $Nb_2O_5$  in its crystal structure.
- Rubidium, a soft and highly reactive element often found associated with lithium in the rare element pegmatites and in the host schist to a lesser degree.
- Cesium. Cesium is an incompatible element because of its large ionic radius, so during magma crystallisation, it is concentrated in the liquid phase and is the last to crystallise. Cesium is most frequently found in the two mica schist host rock.
- Albite, a sodium-aluminum silicate host rock in pegmatites. Albite is the last of the feldspars to crystallise from a molten rock. This process of crystallisation from molten rock serves to isolate rare element minerals in the

last stage of crystallisation and effectively concentrates rare mineral species- lithium, tantalum, tin, niobium and rubidium in the Doade-Presqueiras pegmatites.

- Kaolin. The mineralogy of the rare element pegmatites with abundant feldspars, quartz and muscovite would indicate a tailings resource of kaolin used in high quality ceramics, porcelain, paint, rubber, greases, quality paper and your bathroom essentials-toilets and bathtubs. The quantity and quality of the kaolin tailings resource has not been determined to date.

### **Historical exploration**

Solid Resources was attracted to the Doade-Presqueiras project because of an old tin mine with shallow workings, in the area of Presqueiras in Galicia. In 1857 a Ricardo de Urulburru noticed a belt of pegmatite dykes thirteen kilometres long within the area. In that time the dykes were mined by so-called “adventurers” and the mine was called the Mina de Barro, or mud mine, because the dykes were so soft. Artisanal mining was carried out along one dyke.

During the 1950s, the Spanish Compania Estanifera de Galicia (Galicia Tin Mining Company) started mining cassiterite along one large dyke to the north of the property. The underground workings of this mine are still accessible. This operation ceased when the price of tin fell in the late 1950s. The northern Presqueira area of the property was mined by the local inhabitants for tin until the 1980s, when the price of tin once again dropped.

The underground workings are located between two open cast pits and cover an area about 100 metres square, or about one hectare. The mine workings are irregular in the eastern zone of the permit but become more orderly toward the west. Four different gallery levels were defined, which follow the dip of the main pegmatite structure. The mostly well-kaolinised albite pegmatite is up to eight metres thick.

The concentrates from this mine typically contained significant amounts of columbo-tantalite, a dull black metallic ore from which the elements niobium, (formerly columbium) and tantalum are now, when co-deposited, known as the ore coltan.

The potentially exploitable minerals in the area are:

- Cassiterite; the main ore mineral of tin.
- Columbo-tantalite; coltan or niobium and tantalum.
- Feldspar; predominantly sodium feldspar, which occurs as an important component of the pegmatite host rock and as a by-product may be economically exploited.
- Lithium, which Solid found occurrences in chemical analyses of potentially mineable grades during exploration.

In 1980, the Spanish Geological Survey, ENADISMA, conducted chip sampling of pegmatite structures in the north and central portion of the property. A scout drilling programme consisting of eight vertical holes of which five were in the northern section and three in the central section around the Acebedo-Rubillon area. These holes intersected dykes to a depth of 11.5 metres, with tin grades to 3500 ppm, and 273 ppm tantalum over a length of 0.6 metre. Records of these results are still available.

In 1982, Sevelar-Rio Ibex, the Spanish subsidiary of Rio Algom, carried out an exploration programme that included preparation of geological maps and trenching followed by a 20-hole drill programme totaling 2,069 metres. The location is unknown and the results are not available.

In 2000, Solid Mines España started an initial exploration programme consisting of systematic stream sampling. The sediments were analysed for niobium, tantalum, tin, tungsten and lithium. This was followed by rock sampling of pegmatites occurring in the anomalous areas. The samples were geochemically analysed to identify lithium and tantalum.

In 2002 the local Mines Branch official survey accurately surveyed and delineated the concession boundaries of the Alberta 1 licence. Following this, an Investigation Permit title (IP-4,966) for the Alberta 1 concession was granted to "DRG", the sole administrator of Solid Mines España, a 100-percent-owned subsidiary of Solid Resources Ltd.

In 2003, a 10-hole diamond scout drill programme tested three locations on the concession. The following year, a NI 43-101-compliant report of the 2003 drill programme was filed.

In 2004, the Presqueira sill-form pegmatite in the north end of the concession became the priority target for starting production based on good tonnage estimates for the mineralisation of tin, tantalum and lithium. The shallow overburden was amenable to open pit mining and the soft kaolinised nature of the dyke could be easily excavated for mill feed.

In 2005, a seven-hole diamond drill programme was designed to further extend the limits of the 13-metre-thick sub-horizontal rare element dyke in the northern part of the Presqueira area.

## Doade-Presqueiras risked mineable resource assumptions

Reserves		Probability	Tonnes (m)
Proven		90%	0.0
Probable		50%	0.0
<b>Total</b>		<b>0%</b>	<b>0.0</b>
Resources	Conversion	Probability	Tonnes (m)
Measured	90%	90%	0.0
Indicated	70%	50%	0.0
Inferred	70%	10%	0.0
Hypothesised	50%	0%	16.0
<b>Total</b>	<b>50%</b>	<b>0%</b>	<b>16.0</b>
Mineable resource			Tonnes (m)
<b>Mineable resource</b>			<b>8.0</b>
Risked mineable resource			Tonnes (m)
Current classification			0.0
<i>Scenarios for exploration success</i>			
- base case			2.8
- optimistic case			4.8
- pessimistic case			0.8
<b>Notes:</b>			
- mineable resource have been estimated as reserves plus the portion of resources that would be expected to convert to reserves considering deposit type and likely grade variability			
- risked mineable resource refers to the various classes of resource/reserve weighted by their assumed confidence level			

## Proforma Doade-Presqueiras operation profit and loss

Proforma P&L (US\$m)	Year ending June							
	'12	'13	'14	'15	'16	'17	'18	'19
<b>Gross revenues</b>	<b>0.0</b>	<b>9.3</b>	<b>21.7</b>	<b>21.9</b>	<b>40.0</b>	<b>40.6</b>	<b>41.2</b>	<b>75.3</b>
Operating costs	0.0	3.3	7.8	8.0	16.6	17.0	17.5	30.9
<b>Operating profit</b>	<b>0.0</b>	<b>6.0</b>	<b>13.9</b>	<b>13.8</b>	<b>23.4</b>	<b>23.5</b>	<b>23.7</b>	<b>44.4</b>
Depreciation	0.0	1.5	3.6	3.6	5.1	5.1	5.1	7.4
Administrative costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>EBIT</b>	<b>0.0</b>	<b>4.5</b>	<b>10.3</b>	<b>10.3</b>	<b>18.3</b>	<b>18.4</b>	<b>18.6</b>	<b>37.0</b>
<i>Assumptions</i>								
Capital costs (US\$m)	24.5	10.7	0.5	0.5	16.1	1.1	1.1	12.0
Tonnes ore processed (millions pa)	0.0	0.2	0.4	0.4	0.5	0.5	0.5	0.7
Payable metal/minerals								
- Tin (000 lbs)	0	174	405	405	771	771	771	1,389
- Lithium (000 lbs)	0	2,083	4,860	4,860	6,943	6,943	6,943	9,997
- Tantalum (000 lbs)	0	21	49	49	116	116	116	250
- Niobium (000 lbs)	0	24	57	57	135	135	135	292

Source: Objective Capital

### Current exploration

Solid Resources commenced an aggressive new drill programme early this year. The Phase 3 programme, is now complete with a total of 31 holes, totaling approximately 3,500 metres.

The work included 31 infill holes, totaling 2,000 metres, in the North zone open pit area, as well as 13 holes, for 1,500 metres, targeting the South zone.

Assay for the 2011 drill programme are now available. The tests in the northern zone average 93 ppm Ta<sub>2</sub>O<sub>5</sub>, 586 ppm Tin, 0.31% Lithium, 83 ppm niobium, and 0.44 percent Li<sub>2</sub>O. Of particular interest is hole SO-11-12, which intersected 11.75 metres with locally higher grades of tin, lithium and tantalum pentoxide.

The results of one-metre intervals within this zone of mineralised pegmatite include a one-metre interval averaging more than two kilogrammes per tonne of tin, more than 2 percent of Li<sub>2</sub>O and 183 ppm Ta<sub>2</sub>O<sub>5</sub>.

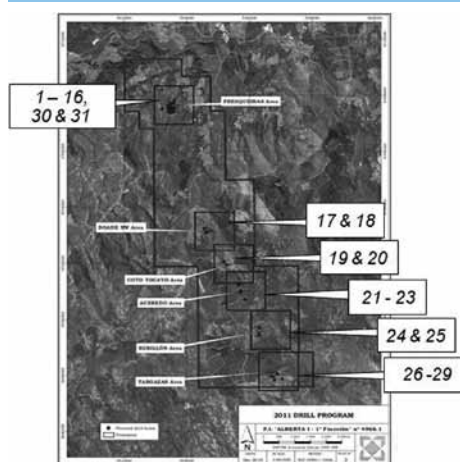
Solid believes hole SO-11-12 is significant for two reasons. First, the results are the best to date in the northern section of the property, known as the Presqueiras area. Secondly, these results come from a new extension of the mineralised zone, which was previously unknown, and therefore extends the drilling zone to a new area. As a result, although the company had intended to drill just this one hole in this area, two additional holes were drilled surrounding hole SO-11-12.

Based on the encouraging results, and the discovery of new blind dikes along with the continuity of the previously known dikes, the company will immediately move forward to construct a resource model for both the north and south zones of the property.

Assays for the 13 holes in the southern zones are now available. These tests have averaged 649 parts per million (.064%) of tin, 145 parts per million of tantalum pentoxide ( $Ta_2O_5$ ), 109 parts per million of niobium pentoxide ( $Nb_2O_5$ ), 848 parts per million of rubidium (Rb) and a lithium oxide ( $Li_2O$ ) content of 0.77%.

Of particular interest is a near-surface zone in these holes that would be amenable to open pit mining. The assays range as high as 1,325 ppm tin, 231 ppm  $Ta_2O_5$ , 137 ppm  $Nb_2O_5$ , and 957 ppm rubidium.

#### Doade-Presqueiras 2011 drill programme hole numbers



Source: Solid Resources

#### South zone highlights (inclusive)

Length (m)	Tin (ppm)	Tantalum (ppm)	Niobium (ppm)	Lithium (%)
13.25	907	176	119	0.53
3.2	1198	251	167	0.058
23.2	644	145	115	0.98
16.8	883	151	104	0.26
3.35	1075	256	126	0.19
11.0	838	168	129	1.31
5.7	1216	205	137	0.12
8.6	934	173	122	0.79

Note: 1lb = 454 ppm/g/t & 1% = 20lbs. Tin = \$11/lb. Tantalum = \$250/lb. Niobium = \$28/lb. Lithium = \$2.5/lb

#### North zone highlights (inclusive)

Length (m)	Tin (ppm)	Tantalum (ppm)	Niobium (ppm)	Lithium (%)
11.70	951	117	121	1.01
11.75	999	124	101	1.15
15.9	966	103	95	0.26
14.1	855	151	116	0.54
8.85	873	118	112	0.54
26.0	682	101	96	0.46

Note: 1lb = 454 ppm/g/t & 1% = 20lbs. Tin = \$11/lb. Tantalum = \$250/lb. Niobium = \$28/lb. Lithium = \$2.5/lb

Source: Solid Resources

Solid Resources has entered into a binding option agreement with an arm's length third party, pursuant to which it acquired an option to purchase a metallic mining license covering an area of 1,000 hectares in northwest Peru.

Under the terms of the option agreement, the company has the right to purchase the license, during the three year term, by paying the owner a total of US\$500,000, in tranches over the course of the period ending December 2012. The first cash payment of US\$4,000 has already been paid.

The concession is situated 30 kilometres south of the Ecuadorian border and 1,200 kilometres northwest of Lima. The property has good access and experiences moderate weather conditions. The property lies along the coastal mountain range (Cordillera Del Condor) of Peru and Ecuador, which hosts the most important gold-bearing areas in Ecuador and Peru, which have been exploited since pre-Inca times.

The geology consists of Cretaceous volcanics and related tuffs cut by northeast-southwest shear zones hosting gold and copper sulphides. Forty grab samples from random outcrops were collected over the previous two years within this 1,500-metre-long structural belt by two professional geologists associated with the previous optionor.

This work returned gold values ranging from 0.05 to 30 grams per tonne of gold, and copper values from 0.10% to over 1.0% copper. The assays defined several broad areas of gold and base metal anomalies.

Small-scale hand mining has been carried out in the past by local prospectors and no drilling has been reported on this property to date. Modern exploration on the Ecuadorian side of the border has recently delineated a number of world-class gold and copper deposits. A scout drilling programme from a minimum of 500 metres of core has been strongly recommended on this property, based on the very encouraging gold and copper assays from the preliminary grab sampling of a strong shear structure.

# Financials

Profit and Loss					
Year ending December (C\$m)	2010A	2011E	2012E	2013E	2014E
<b>Revenues</b>	—	—	—	9.5	22.2
COGS	—	—	—	(3.3)	(8.0)
Gross profits	—	—	—	6.2	14.2
Administrative Costs	(2.5)	(1.5)	(1.5)	(1.6)	(1.6)
<b>EBITDA</b>	<b>(2.5)</b>	<b>(1.5)</b>	<b>(1.5)</b>	<b>4.6</b>	<b>12.6</b>
Depreciation & amortisation	(0.0)	—	—	(1.6)	(3.7)
EBIT	(6.0)	(1.5)	(1.5)	3.0	8.9
Interest	—	—	0.4	0.3	1.4
EBT	(6.0)	(1.5)	(1.2)	3.3	10.3
Tax paid	—	—	0.3	(1.0)	(3.1)
<b>Earnings</b>	<b>(6.0)</b>	<b>(1.5)</b>	<b>(0.8)</b>	<b>2.3</b>	<b>7.2</b>
Dividends	—	—	—	—	—
<b>Retained earnings</b>	<b>(6.0)</b>	<b>(1.5)</b>	<b>(0.8)</b>	<b>2.3</b>	<b>7.2</b>

Cashflow					
Year ending December (C\$m)	2010A	2011E	2012E	2013E	2014E
EBIT + stock based comp.	(6.0)	(2.6)	(1.5)	3.0	8.9
Depreciation	0.0	—	—	1.6	3.7
Stock-based Compensation	1.4	1.1	—	—	—
Gains, Writedowns, Recoverables	3.7	—	—	—	—
(Increase) decrease in receivables	0.0	—	—	(1.4)	(1.9)
(Increase) decrease in inventory	(0.0)	—	—	(0.4)	(0.6)
Increase (decrease) in payables	(0.2)	—	—	0.5	0.7
<b>Net cash from Ops</b>	<b>(1.1)</b>	<b>(1.5)</b>	<b>(1.5)</b>	<b>3.3</b>	<b>10.8</b>
Tax paid	—	—	0.3	(1.0)	(3.1)
Dividends	—	—	—	—	—
Net interest recieved (paid)	—	—	0.4	0.3	1.4
New equity	1.8	2.1	—	—	—
New (deposits) borrowings	—	—	—	—	—
Capital expenditure	(0.3)	(1.5)	(3.0)	(3.0)	(0.3)
<b>Net cash from financing</b>	<b>1.5</b>	<b>0.6</b>	<b>(2.3)</b>	<b>(3.7)</b>	<b>(2.0)</b>
<b>Net increase (decrease) in cash</b>	<b>0.5</b>	<b>(0.9)</b>	<b>(3.8)</b>	<b>(0.4)</b>	<b>8.9</b>

Balance sheet					
Year ending December (C\$m)	2010A	2011E	2012E	2013E	2014E
Fixed assets at NAV	3.1	4.6	7.6	9.0	5.6
Cash	1.0	0.1	(3.7)	(4.2)	4.7
Receivables, Recoverables	0.0	0.0	0.0	1.5	3.4
Inventory	0.0	0.0	0.0	0.4	1.0
<i>Less Payables</i>	(0.1)	(0.1)	(0.1)	(0.6)	(1.3)
<b>Net current assets</b>	<b>0.9</b>	<b>0.0</b>	<b>(3.8)</b>	<b>(2.9)</b>	<b>7.8</b>
Less loans	—	—	—	—	—
Less Future Tax Liability	—	—	—	—	—
<b>Capital employed</b>	<b>4.0</b>	<b>4.6</b>	<b>3.8</b>	<b>6.2</b>	<b>13.4</b>
<i>Represented by</i>					
Shares in issue	22.0	24.1	24.1	24.1	24.1
Add retained profit	—	—	—	—	—
Prior periods	(12.0)	(18.0)	(19.5)	(20.3)	(18.0)
This period	(6.0)	(1.5)	(0.8)	2.3	7.2
<b>Shareholders' funds</b>	<b>4.1</b>	<b>4.7</b>	<b>3.8</b>	<b>6.2</b>	<b>13.4</b>

Source: Objective Capital

### **Greg Pendura – Chief Executive Officer, President, Director**

Mr Pendura has more than 35 years of experience in founding, financing and advising emerging private and public companies. He spent 12 years in the public sector with Resin Systems Inc. An original founder of the company, he retired in 2007 as President, CEO and Chairman of the Board. During his tenure with Resin Systems Inc., he was instrumental in the company achieving a market capitalisation of over C\$200m. Mr Pendura successfully raised over C\$100m for Resin during the company's formative years.

Since 2007 Mr Pendura has been involved in the precious and rare metal mining sector as a management consultant and Director of Anglo Swiss Resources. He also helped the company to raise capital and gain exposure in the marketplace. The company has now entered a formative drilling and explorative development stage of qualifying and quantifying the resources of its properties.

### **Rick Gliege – Chief Operating Officer, Chief Financial Officer, Director**

Mr Gliege brings to Solid Resources valuable knowledge in strategic planning, operations, marketing and development and the raising of capital through his international connections, through over 20 years of leadership and advisory experience as a senior manager in both the public and private sectors. Working as a provincial manager with one of North America's largest insurance companies, Mr Gliege was accountable for the design, implementation and management of two new divisions, which were revolutionary to the industry. A graduate of the University of Victoria and a certified commercial mediator, Mr Gliege also studied business administration at Simon Fraser University, Canada.

Mr Gliege has focused his efforts in the venture capital sector since 2006. Mr Gliege was instrumental in transforming a technology company into a mining exploration operation in both eastern Canada and southern United States in his role as President. Mr Gliege also ensures the Code of Conduct, Corporate Governance framework and a comprehensive suite of Corporate Policies are protected against illegal and inappropriate behaviors, including fraud, bribery, corruption, discrimination and bullying.

### **D. Randy Hayward, B.Comm, LLB – Director**

Mr D. Randy Hayward has maintained a successful law practice in Edmonton, Alberta, Canada for 20 years. During the latter phase of his law practice, he founded and managed Canadian Dispute Resolution (Alberta) Ltd and marketed the service of mediation to the legal community and the insurance industry.

Mr Hayward also earned his Diploma in Counseling at P.D. Seminars from the Haven Institute on Gabriola Island, British Columbia, Canada. After relocating to the west coast from Edmonton, he has worked with numerous private and public companies for 15 years, being responsible for fund raising, strategic planning and

business development in various positions. Mr Hayward has been a consultant to a number of successful public companies trading on the TSX Venture Exchange, raising investment capital and working in corporate communications, business development and investor relations.

#### **Harry A. McKinders – Director**

Mr McKinders joined Solid Resources in 1995 and became a Director in 1998. He has had broad experience in the investment field and has provided consulting services to numerous public and private companies over the years. Previously, he was an account executive with Burns Brothers and Denton Ltd, which later became BMO Nesbitt Burns. Mr McKinders graduated from the Alexander Hamilton Institute's Modern Business Administration programme. He has also completed the Stock Market Institute's Technical Analysis Program and the Canadian Securities Courses I and II. Mr McKinders is a valuable member of the Solid Resources Board of Directors, advising and assisting the management and as a relationship manager between valuable investors and the company.

#### **Geological team**

##### **Tony Spat, M. SC., P. Eng., Advisory Board**

Mr. Spat has had a truly remarkable career as an international exploration geologist and engineer. Received the "Special Achievement Award" from the Prospectors and Developers Association of Canada in 2005 for the discovery of the Angostura gold-silver project in Columbia

##### **Dr. Rolf Burkhardt, PhD. Geol., Geologist**

Dr. Burkhardt as more than 40 years experience as a Geologist worldwide, has managed and supervised various successful exploration projects, speaks German, English, Spanish, Portuguese and Italian.

##### **Dr. Alfonso Gracia, PhD, Geologist, Solid Mines Espana**

Dr. Gracia has worked in geological exploration and evaluation of mining projects for 35 years, on over 100 projects in five continents, has also undertaken further studies in Business & Environmental Engineering.

##### **Dr. Peter LeCouteur, PhD, P. Eng., Geologist, Advisory Board**

Dr. LeCouteur has been involved in mineral exploration since 1967. He has been involved in the exploration of tantalum, lithium, niobium, zirconium and rare earths, gold, silver, uranium, diamonds and many more.

##### **David Henstridge, P. Geol., Advisory Board**

David brings over 37 years in the mining industry including 20 years in the management of public-listed mineral exploration companies. He has managed numerous advanced exploration projects throughout Australia, Europe, North and South America.

We are pleased to bring you this report on **Solid Resources**.



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As always, I welcome your comments and feedback on our research!

Gabriel Didham, CFA  
Objective Capital

#### **Will Purcell**

Will has been involved in the resource sector for 30 years in a variety of roles. Since the late 1990s, he has been active in assessed mineral resource investment projects. Will has a B. Math degree from the University of Waterloo in Ontario.

#### **Richard Thompson**

Richard Thompson is a graduate mining engineer (Camborne) and has worked for over 40 years in the mining industry. His expertise covers mining techniques, the application of mining equipment, mine project evaluation, mining investment promotion and project management.

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