

8 April 2011

Upcoming events

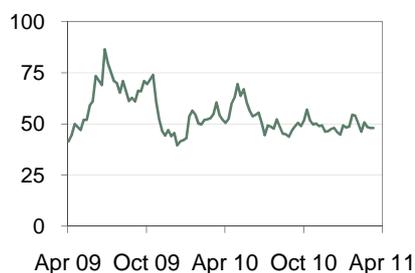
Jubilee & Sylvania JV decision - Jul 2011
 CVMR results - Jul 2011
 BFS completion - Apr 2012
 Estimates on economics - Apr 2012
 EIA & Mining Licence approvals - Aug 2012

Price (p)	48
Target price (p)	80
Ticker	SLV LN , SLP AU
Market cap (£m)	145
Cash (US\$m)	22
Debt (US\$m)	N/A

52-week price high (p)	86.5
52-week price low (p)	43.75
3M-avg daily vol (000)	754
3M-avg daily val (£000)	383

Basic shares (m)	302
FD shares (m)	13
Top shareholders (%)	
Audley	14.7
M&G	11.7
Odey	8.3
Henderson Global	8.0
JP Morgan	6.7
Total	42.7

Share Price Performance (p)



Source: Fidessa

Ambrian acts as Broker and Nomad to and as a Market Maker in this company

Nick Mellor

+44 (0)20 7634 4762

nick.mellor@ambrian.com

We have recently returned from a site visit to current operations. We have reviewed Sylvania's current production forecasts and have confidence in their achievability. **We think healthy growth in current operational cashflow is a feature that has been totally overlooked by the market.** This cashflow will substantially lower the fresh capital demands of the Northern Limb development projects and we think that this is a feature that sets Sylvania apart from the rest of its junior PGM-focused peers.

Following a review of the Volspruit Project (first Northern Limb growth prospect) and the processing route proposed to commercialise its exploitation, **we think development risks are firmly to the upside.** The market has the perception that 'new technology' is required to make the Volspruit Project economic. We refute this idea as all of the processing steps are already working at full scale in analogous processing routes. Having spent time with Mintek (designers of the proposed process), we are comfortable with the risks associated with combining these already proven technologies in order to commercialise the new processing route.

Target Sensitivity to NPV Discount Rate & Our Long-term Pt Price

Discount	US\$1,000/oz	US\$1,400/oz	US\$1,640/oz	US\$2,000/oz	US\$3,000/oz
15%	55	59	62	66	77
10%	69	76	80	86	103
7%	81	90	96	104	127

Source: Ambrian estimates

We maintain our **BUY** recommendation and lift our target price to **80p (from 78p)** as a net result of: Africa Asia Capital equity dilution; changes to production forecasting; and raising our long-term (2015 forward) platinum price from US\$1,450/oz to US\$1,640/oz.

We think that Sylvania represents the best (and cheapest) entry point into the platinum market in global equities for those looking for a company trading at a substantial discount to its current cashflow forecast, with game-changing growth 'in for free'. Share price drivers include: continued production growth from existing operations (50% uplift forecast in run rate by the end of 2011); Volspruit feasibility complete by July 2011; and subsequent BFS (point when market will get opportunity to gauge economics) in April 2012.

Financial Forecasts (based on existing operations only)

Yr to Jun	08A	09A	10E	11E	12E
PGMs sold (3E + Au 000oz)	17	24	28	43	63
Cash cost (US\$/oz 3PGE + Au)	357	321	534	477	543
Revenue (A\$m)	33	19	30	49	83
EBITDA _{adj} (A\$m)	36	6.5	9.4	22	49
NPAT _{adj} (A\$m)	18	(1.1)	(0.7)	7.9	29
EPS (US¢)	5.9	(0.4)	(0.2)	2.6	10
Basic P/E (x)	13	N/A	N/A	30	8.1
EV/EBITDA (x)	5.7	32	22	9.3	4.2

Source: Company data, Ambrian estimates

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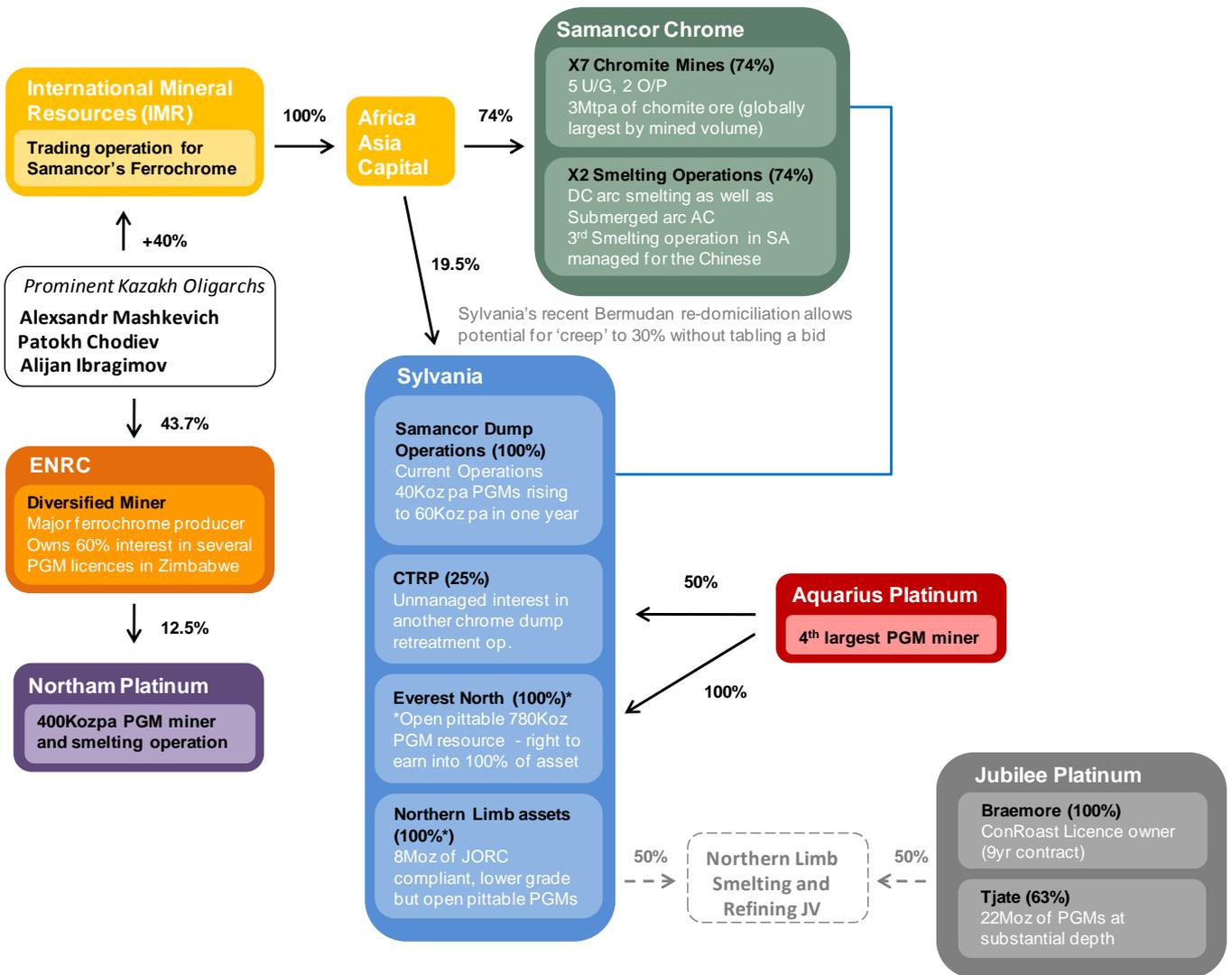
Corporate Overview and Asset Summary

There were a number of corporate developments for Sylvania last year, including:

- **IMR/Samancor Chrome buying into Sylvania**, cementing the synergistic relationship between the two parties and Sylvania's current production base; and
- **two Framework Agreements between Sylvania and Jubilee Platinum** with a view to developing Sylvania's future production base.

We summarise below the inter-relationships between the various parties to provide an overview of Sylvania's asset base and relationships. This is a summary, and not an attempt to itemise each individual subsidiary company.

Overview of Sylvania and Its Partners' Inter-relationships in the Platinum and Chrome Industry



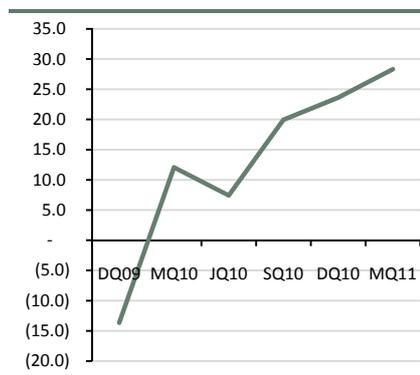
*Northern Limb assets could need BEE participation; Source: Company information, Ambrian

Sylvania/Samancor Cr RoM processing



Source: Ambrian

FCF from Dump Ops (ZARm)



Source: Company announcements

What the Site Visit Revealed

We recently returned from a Sylvania site visit to the current dump reprocessing operations (Mooinoi, Doornbosch, Lannex and Steelpoort) and a tour of Mintek’s testing facilities in Johannesburg. At Mintek, we met with the technical staff responsible for the preparation of the feasibility study on the ore concentrating and smelting part of the Volspruit Project in the Northern Limb of the Bushveld.

- Sylvania is now better integrated with Samancor Chrome (owners’ interests more aligned, IMR – 74%-owners of Samancor Chrome – now owns 19% of Sylvania). This has led to better clarity on Samancor Chrome’s long-term mine development planning, providing a good (base case) visibility on RoM and current arisings processing for Sylvania (post-dump reworking). We believe the market has been focused on the comparatively short finite lives of the dumps as plant feed, or rather, the production ‘question mark’ that ensued after that feed’s termination. This, in our view, was one of the reasons why the company had failed to trade on industry median forward earnings multiples. We therefore see a more integrated Sylvania with Samancor Chrome as ‘valuation beneficial’.
- We think that the company’s operating performance over the last year has been totally overlooked by the market. We consider that the reasons for this are twofold: 1) the company is (and has been) developing multiple chrome reprocessing assets in parallel historically and the capially-intensive nature of this process may have masked individual plant performances (we break this down in the section *Currently Producing Operations* below); and 2) we think that some events at the corporate level are masking genuinely positive progress at its core business. These events/(costs) included: legal consulting for the Ruukki bid; Everest North mediation; BEE transactions; corporate re-domiciliation to Bermuda; 19% IMR share purchase; acquisition of Great Australian Resources and SA Metals; and technical consulting for a) the initial development of chrome retreatment concepts, b) DC arc smelting of PGM concentrates and c) the concentration, smelting & refining consultancy for the Northern Limb feasibility. We think that in time the market may begin to ‘look past’ the headline cash burn to what looks like an attractively cash-generative business (now, as we mention above, with a much sounder long-term outlook, based on RoM processing at Samancor).

Delivering on this and presenting clear market guidance is something that the company’s new Deputy CEO, Nigel Travarthen, has made an immediate focus (formerly MD at AngloGold Ashanti, with 35 years’ mine development and production experience). We think that this practice has paid handsomely for other listed mining market participants in terms of forward earnings valuation premiums over time. We expect Sylvania to follow suit. The cash-generative nature of these operations will, of course, serve to lower fresh capital demands when the Northern Limb assets come to be developed. We think that feature is unique amongst junior metal producers. How many other comparables do you know that offer equity exposure to game-changing growth opportunities whilst existing operations look set to supply the large portion of the capital? This is especially pertinent in the PGM space.

- When it comes to taking a view on the development of the Northern Limb assets: 1) we do not think that the mining or concentration steps will pose a problem for a company that is already demonstrating profitable results in the same exercises; and 2) following a review of DC arc alloy smelting and CVMR refining from alloys, we genuinely feel that the technological risk is to the upside.

Mintek's 3MVA DC Arc Furnace



Source: Ambrian

The DC arc technology has been around for decades and would have been taken up much sooner by the ferroalloy market were it not for a patent acquisition by Samancor Chrome 20 years ago that gave it exclusivity for that time. Concentrates containing iron, chrome, manganese, copper and PGMs, etc, are all regularly smelted today around the world in DC arc furnaces. The efficiency of recovery of different compounds is readily measurable and governed by the laws of chemistry and physics. Mintek has smelted over 37,000t of PGM concentrate in one smelter alone over the last four years, examining the process. This has been done in a furnace 60% of the size (3MVA) of the one that Jubilee proposes to build to smelt Sylvania's ore in.

We do not believe that it is 'the concept' that poses the risk here, merely the commercialisation and, to that end, we do not think the scale-up poses much of a risk compared to existing pilots. We do not yet have a feel for the competitiveness of the operating costs but we would be surprised if South Africa's premier metallurgical R&D institution (Mintek), designers of the process, technical auditors of various stages of the ongoing feasibility and NSR beneficiaries (once in production), would not have flagged any fatal flaws by now – if there were any. Clearly, power source and availability play a part and represent a potential issue here, and whilst there are a number of options on the table at Jubilee's Middleberg facility, we will have to wait until the feasibility study (due out in July 2011) to gauge this.

The refining step, Chemical Vapour Metal Refining (CVMR[®]), upon review and following discussions with CVMR Corporation, appears a relatively straight-forward process in our opinion. We suspect our initial 'first-pass' view was the same as many would-be investors (ie, "another new technology"), but it is important not to let unfamiliarity breed contempt. Both Norilsk and Vale use older versions of similar carbonyl technology to CVMR for their own metal refining. CVMR has built three full-scale working plants utilising its technology – in Canada, Germany and one in China. It owns the Canadian plant and a major stake in the Chinese company (a publicly-listed entity) and today one can go online and buy both the iron and nickel powders that the technology produces from this Chinese company. The plant that CVMR built in China is producing product at a rate that is 1.5x greater than that demanded by Sylvania's current production plan at Volspruit (6,000t pa Ni vs. c.4,000t pa Ni).

Bottom line — *We feel that Sylvania's current operations more than underpin its current market value. With 2009's (perhaps) over-optimistic short-term chromite mining forecasts from Samancor behind us, we are now comfortable with both the conservative nature of Samancor's (and thus Sylvania's) production forecasts, the longevity of those operations and the synergistic relationship between Sylvania and the world's largest chromite miner by volume. With that in mind, we think the rest of the growth projects in the Northern Limb are in for 'free'. Having reviewed the processing route proposed for the Northern Limb's development, we think that the technological risk is to the upside, but even without what we see as a free-carry into a game-changing growth project, we suggest that Sylvania warrants investment on the grounds that it was the only platinum miner of its peers not to have gained during the late-2010 platinum price rally. For those looking for a cheap entry into the platinum equities market (a subsector we are bullish on long term), it therefore is a great investment opportunity.*

Valuation Drivers

Continued improvement in current production and cash generation

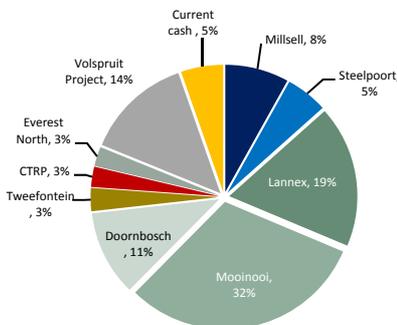
Mine and concentrator feasibility study of Volspruit Project due to complete July 2011

Smelting and refining feasibility study of Volspruit Project due to complete July 2011

BFS completion – April 2012

Our NAV for just the currently producing projects plus cash is US\$333m, or 67p – the current share price trades at a 30% discount to this

Asset Weight in our SOTP Valuation



Source: Ambrian estimates

This is a 'steady-state' forecast of Sylvania's current production

No forecasts for earnings or financing of the Northern Limb developments have been included

Valuation and Investment Case

We value Sylvania Platinum on a post-tax DCF-basis for all reprocessing operations at a 10% discount rate, applying a 1x multiple for current operations and 0.8x for planned and fully-financed future operations (Tweefontein). The DCF analysis used a long-term US\$/ZAR rate of 8.00 and took Bloomberg Analyst Consensus Pricing for all the precious metals (which were forecast out to 2015 and from that date we inflated the prices at a nominal 3% pa, in line the on-mine (ZAR) cost inflation rate we forecast). To that valuation, we add: the NPV_{10%} of our corporate overhead estimate; cash at face value; and a nominal value for Everest North (the US\$10m we attribute to the asset is close to its fair value on a peer group resource-in-ground basis and is well below the value of its commercial potential). Lastly, since our previous formal research note on Sylvania, the company has released a maiden resource estimate for the Volspruit Project (the first of Sylvania's Northern Limb assets to be developed).

We apply a US\$13/oz (4E) peer group-derived resource-in-ground value to the Volspruit Project's total resources (3.5Moz 4E) to give us a US\$55m valuation. The value inferred by this step generated a similar figure to our attempt to derive an NPV-based value for the processing of the Volspruit Project's ore to a saleable concentrate level (at current spot pricing, we generated an attributable NPV_{10%} of US\$51m). We attach a summary of this latter exercise in the *Appendix*. At this stage, we attribute no value for the additional 'hot spot' resources recently identified in the Northern Limb (outside of the Volspruit farm) as we doubt whether the market would price in the upside for these until the commerciality of the first Northern Limb project is demonstrated.

Sum-of-the-Parts Valuation

Fair Value Calculation	NPV	NPV (x)	NAV/sh
	US\$m	multiple	p/sh
Millsell	33	1.0	7
Steelpoort	22	1.0	4
Lannex	73	1.0	15
Mooinooi	126	1.0	25
Doornbosch	44	1.0	9
Tweefontein	15	0.8	2
CTRP	10	1.0	2
Head Office	(11)	1.0	(2)
Everest North	10	1.0	2
Volspruit Project	55	1.0	11
Current cash	22	1.0	4
Total	398		80*
Current Share Price (p)			48
Share Price Discount to our NAV			40%

*Fully-diluted target (options all currently out of the money); Source: Ambrian estimates

Steady-state Operations and Financials Forecast Summary

	08A	09A	10E	11E	12E	13E	14E
Platinum Price (US\$/oz)	1,659	950	1,460	1,733	1,987	1,957	2,100
US\$/ZAR rate	7.66	8.83	7.70	6.81	6.96	7.11	7.25
PGMs sold (3E + Au '000oz)	17	24	28	43	63	63	63
Revenue (A\$m)	33	19	30	49	83	85	97
Basket price (US\$/oz)	2,626	881	1,072	1,340	1,442	1,568	1,732
Cash costs (US\$/oz @ SDO)	357	321	534	477	543	685	504
EBITDA (A\$m)	30	6.2	5.0	21	49	41	64
EBITDA _{adj} (A\$m)	36	6.5	9.4	22	49	41	64
NPAT (A\$m)	10	(3.5)	(16)	3.7	27	20	41
NPAT _{adj} (A\$m)	18	(1.1)	(0.7)	8	29	23	44
Capex (A\$m)	(15)	(30)	(15)	(16)	(20)	(2)	(1)
Finance income/(cost) (A\$m)	-	2.5	0.7	0.8	0.8	2.4	4.6
Minority interest (A\$m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FCF (A\$m)	1.6	(21.5)	(5.4)	4.2	18	29	47
Discount rate	10%						

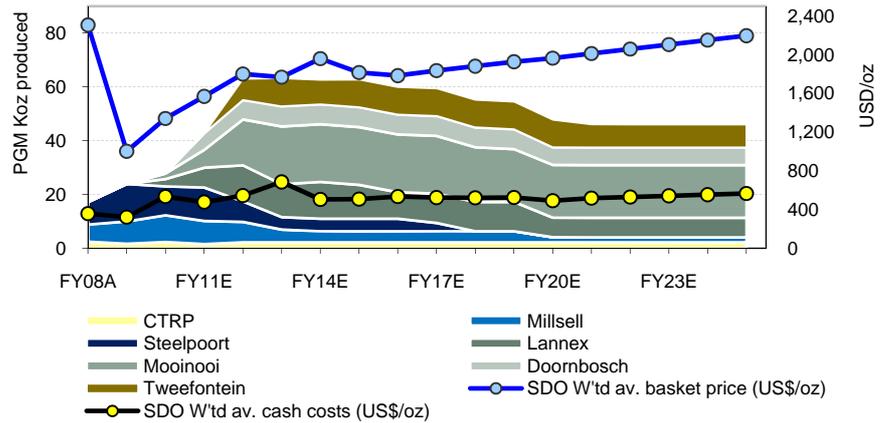
Source: Company data, Ambrian estimates

Currently Producing Operations

Sylvania treats dump, current arisings and RoM material from Samancor Chrome’s chromite mining operations – the Sylvania Dump Operations (SDOs). These recovery plants operate on Samancor Chrome’s tenements to recover a chrome concentrate (which goes back to Samancor) and a PGM concentrate that Sylvania sells on to a third-party smelter.

Forecast Production Profile

Past FY20, the plant feed will run entirely on current arisings and RoM (rather than being supplemented by reworking existing tailings dumps as well). Whilst this feed will be lower in overall volume terms, the fresh (rather than oxidised) nature results in much higher float plant recoveries. The net effect is that a base line of c.40,000oz pa is expected to be maintained past FY20

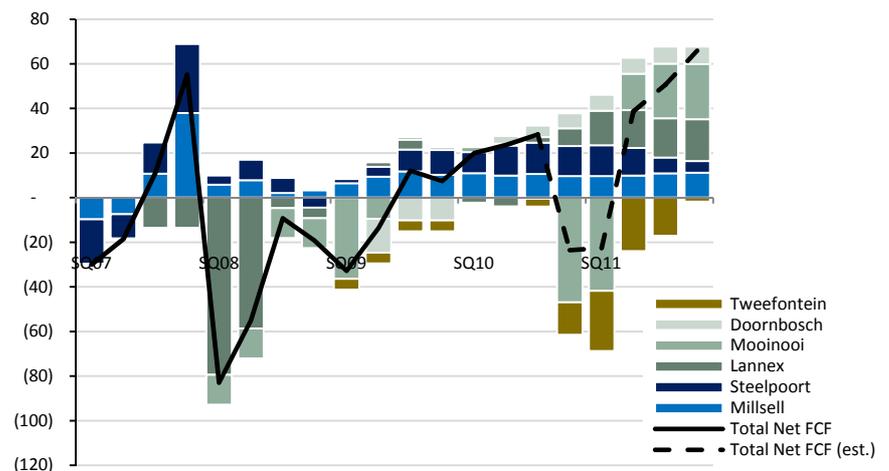


Source: Ambrian estimates

This forecast production profile has changed over the course of 2010 (flattened from a peak of +100,000oz pa, but elongated in line with changes in Samancor’s mine production forecasts). We think that the market’s initial reaction was to raise question marks over the reliability and achievability of the company’s forecasts. On the recent site visit we were taken through all of Samancor’s production scheduling changes and we are more than comfortable that the new forecast is achievable.

Actual and Forecast Free Cashflow from Dump Operations (ZARm)

We think that the cash generation of the plants over the last year has made good progress. We expect this trend to continue



Source: Historic company data, Ambrian estimates

Proven developer of new technological solutions

As the rest of the industry attempts to replicate Sylvania's success, this makes IMR's stake in Sylvania look a lot more strategically beneficial

A few years ago, the recovery of PGMs from chrome tailings was 'new technology' and its economics were doubted by the market. The fact that Sylvania has commissioned five plants in three years and achieved healthy profitability against a hostile background of severely volatile financial markets, fluctuating end-use appetite/pricing for PGMs and an aggressively strong US\$/ZAR environment is impressive. It is a skill set that should aid the company's roll-out of its new growth plans in the Northern Limb.

Over the last two years, given the dollar's weakness against the Rand, all of the chrome and platinum producers based in South Africa have struggled to turn a profit. We think, therefore, that it is no surprise that the industry is beginning to acknowledge the potential synergies between chrome and platinum (highlighted by Sylvania's achievements). In a nod to this, Rustenburg Platinum (a subsidiary of AngloPlats) and Pan African Resources both signed deals last year with International Ferro Metals to try to replicate Sylvania's business model.

If this is the shape of things to come for the industry, then this highlights the value of the synergistic relationship that Sylvania has with Samancor. Therefore, whilst initially dilutionary, IMR (majority owners of Samancor) taking a 19% stake in Sylvania (at the end of 2010) should be viewed as beneficial as it likely guarantees that the two companies' interests are aligned. We therefore see very little risk of other interested parties doing separate deals with Samancor (the largest chromite miner by volume globally).

Individual Operations Review

Lannex will begin depositing tailings in the newly commissioned tailings dam from mid-April this year. Despite commissioning early last year, production at this operation had to be choked back in line with the limited ability to deposit tailings at a high volume. This was due to a delay in getting the water licence. Sylvania has now had this permit extended and the result is that, now constructed, Sylvania's plant will be able to up throughput, which is expected to yield a 60% increase in PGM production.

Mooinooi will embark on a production expansion as part of a JV with Samancor. The project is being executed in partnership with the host mine, with Sylvania taking responsibility for the screening building, cone crusher and associated conveyors, and the host mine is taking responsibility for the HMS Plant, Wet Screening building, Waste Bin and associated conveyors. PGM production at Mooinooi is expected to climb by up to 220oz per month from July 2011 and the project is expected to have a payback period of seven months.

Doornbosch was commissioned at the end of last year and currently PGM grades of c.3.3 g/t (4E) are being received at the front end of the plant. However, this is a brand new mine for Samancor and, as such, it is expected that grades will pick up over time as development ore ratios lower.

New Doornbosch Plant



Source: Ambrian

Northern Limb Growth – the Volspruit Project

Overview

Commercialising the Northern Limb Assets – Envisaged Process Route

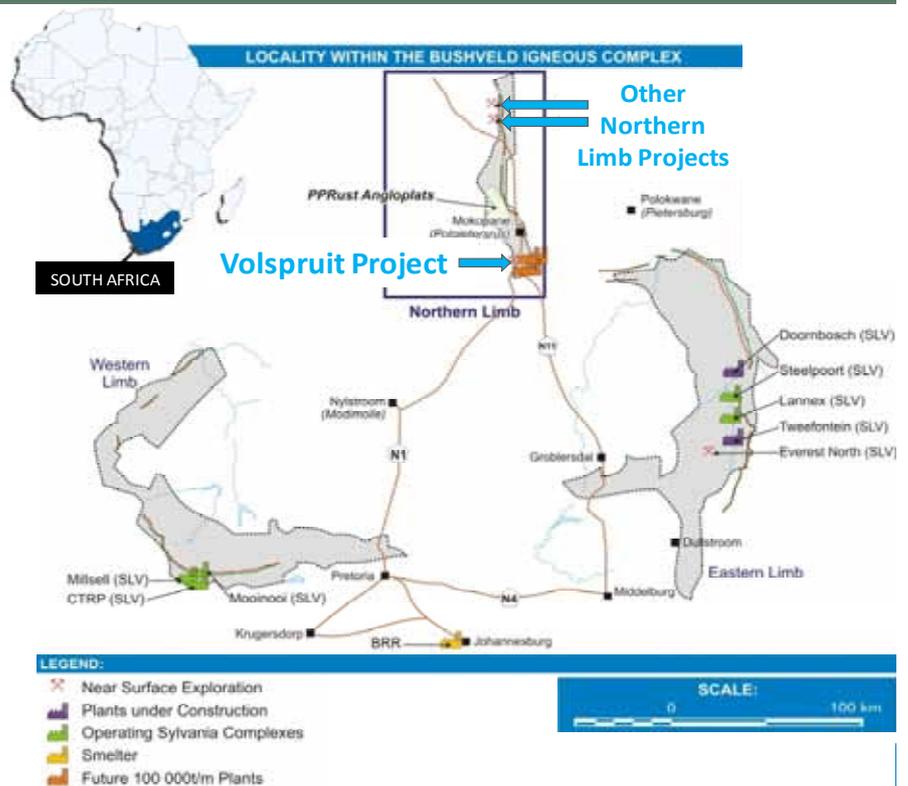


Source: Ambrian

The smelting of PGM concentrates in South Africa is currently carried out by four major miners: AngloPlats, Lonmin, Impala and Northam. The four majors use smelting technology that is designed to produce matte (a highly concentrated sulphide-bearing PGM compound that is sold to refineries). The four majors require mined PGM concentrates of +150 g/t (4E) to keep their smelting economics acceptable. This ensures that a vast swathe of lower-grade PGM deposits in the Bushveld are overlooked by developers because their in-situ grades are too low to produce the desired 150 g/t concentrates.

In 2010 Sylvania purchased two companies that had developed just such resources (for approximately US\$35m in Sylvania shares). The total resources owned by these two companies is estimated at over 13Moz near surface, with 8Moz having been identified so far with JORC-compliant methods. At 13Moz, the deal represented an acquisition value of US\$2.7/oz (or US\$0.5/oz considering total resources). Current peer group-based values for PGM resources in ground sit at around US\$13/oz. Sylvania is committed to providing an integrated solution to commercialising the exploitation of these resources by the application of a new smelting and refining route. The first of these assets to be developed is called the Volspruit Project.

Sylvania's Northern Limb Asset Localities in the Bushveld



Source: Sylvania

In 2010 Sylvania entered into two Framework Agreements that detail its co-operation with another company, Jubilee Platinum, in a collaboration to develop plans to exploit the Volspruit Project in a strategic partnership. Jubilee is licensed to utilise a process (designed by a metallurgical research institute called Mintek) to smelt PGM concentrate via a DC arc smelter.

This process is different to that currently used by the four majors with a PGM smelting oligopoly in South Africa today, but is essentially the same as that formally used by Falconbridge on similar sulphide concentrates in Canada (Mintek and Falconbridge jointly developed the technology).

Geology

The first of a suite of resources owned by Sylvania in the north of the Bushveld is the Volspruit Project. The Volspruit Project centres around two PGM-bearing deposits that are part the Lower Zone of the layered ultramafic suite in the Bushveld Igneous Province. The deposits that are traditionally mined (the Merensky, UG2, Pseudo and Plat Reefs) sit above the Lower Zone in the Bushveld's stratigraphy. The PGM mineralisation at the Volspruit is associated with nickel and copper sulphides that are disseminated in a ground mass of pyroxenite.

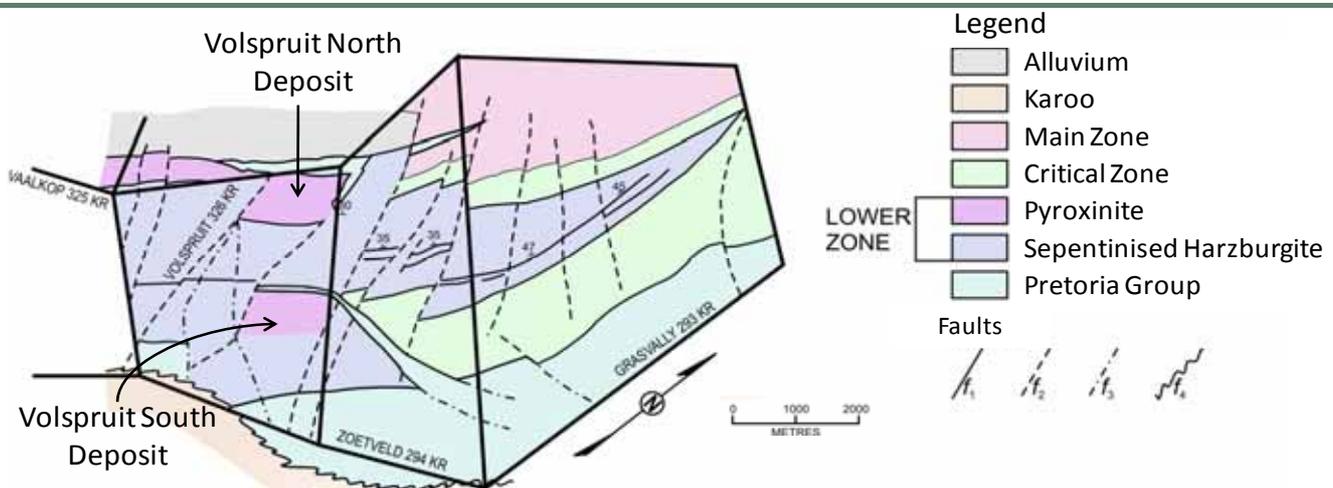
Metal Grade Comparison in Generalised Resources across the Bushveld

Contained Metals	Spot Price (US\$/t)	Merensky Reef			UG2 Reef			Plat Reef			Volspruit Project				
		g/t	% mass	US\$/t ore	g/t	% mass	US\$/t ore	g/t	% mass	US\$/t ore	g/t	% mass	US\$/t ore		
Pt	1,775	3.25	59	185	2.46	41	140	1.26	42	72	0.55	NA	31		
Pd	777	1.38	25	34	2.04	34	51	1.38	46.0	34	0.64	NA	16		
Rh	2,375	0.18	3.0	14	0.54	9.0	41	0.09	3.0	7	-	-	-		
Au	1,429	0.18	2.5	8	0.02	0.4	1	0.10	3.4	5	0.03	NA	1		
Total		4.99	90	242	5.06	84	233	2.83	94	118	1.22	-	49		
		% in ore	% mass	US\$/t ore	% in ore	% mass	US\$/t ore	% in ore	% mass	US\$/t ore	% in ore	% mass	US\$/t ore		
Ni	26,019	0.13	62	34	0.07	80	18	0.36	-	94	0.14	-	37		
Cu	9,482	0.08	38	8	0.02	20	2	0.18	-	17	0.04	-	4		
Total		0.21	100	41	0.09	100	20	0.54	-	111	0.18	-	41		
Total Metal basket price - US\$/t of ore (3E + Au + base metals)				283					253					229	90

Source: Mintek, Ambrian estimates

As an aside, when looking at the above graph, it is worth mentioning that the other resources that Sylvania owns in the Northern Limb are based on deposits in the Plat Reef (with much higher gross metal values per tonne than the Volspruit Project). Despite this difference, the fact that management is perfectly happy to fast track the Volspruit Project over these other assets serves to highlight its confidence in the economics (the details of which the market still awaits).

Surface Geological Schematic at the Volspruit Farm



Source: Knight Piésold, Ambrian

From a structural perspective, post deposition, the area was part of a major horst block to have formed with boundary faults trending towards N/NW. The structure was then subsequently deformed by faulting trending NW/SE.

Mining and Processing to Concentrate

Volspruit Project is a low-grade PGM resource, but at surface and amenable to low-cost, open-pit mining

The Volspruit deposit has a lower contained payable metal value than that of the other PGM-bearing reefs (US\$90/t at spot rates vs. +US\$200/t). What that differential does not reveal is the likely operating costs of extracting an average section of Merensky or UG2 vs. Volspruit. Almost every mining operation in the Bushveld today is mining deep underground resources at high costs. By contrast, the deposits at Volspruit are shallow, sub-outcropping orebodies. The northern-most of the two deposits is flat lying and the southern body dips north at 45⁰, so both will be bulk mined via open pits. We estimated from other examples in the Bushveld (see our NPV for the Volspruit Project in the *Appendix*) that this difference will likely see that mining costs at the project are at least 50% cheaper than the average underground operation.

The high base metal content of the concentrate that will be produced, relative to that of PGMs, means that the mine's product could well be viewed as a nickel concentrate with a PGM by-product

So, despite the lower PGM grades, bulk mining practice at these deposits has the potential to 'even up the score' substantially between the economics of conventional deep underground mining of UG2 and Merensky ore vs. Volspruit ore. We await a feasibility study due to complete in July 2011 to get a better gauge of mining economics. From a processing perspective, the mined concentrate will need to be beneficiated up to what Sylvania feels is a commercially viable grade for the DC arc smelting process (50 g/t vs. 150 g/t on a 4E basis). It will (like all near-surface PGM mining projects) have to process a small portion of oxidised material alongside the 'fresh' sulphide ore (see resource estimates in *Appendix*). The oxide ore normally has lower recoveries than the fresh ore in a float plant, but given that Sylvania is a specialist in the field of processing multiple ore types at its existing plants, we do not see this step as posing any development risk.

Mining and Concentrator Feasibility Study to complete in July 2011

A pre-feasibility for Eskom power infrastructure has been completed and there is 50MVA spare capacity on the main Mokopane power line – capacity allocation has already been applied for. Whilst water capacity is always a sensitive issue in the Bushveld, we do not expect the concentration aspect of this operation (300,000t of concentrate/month split by three processing plants) to prove too onerous on existing water resources. Environmental studies are underway and upon completion of this and the technical feasibility study in July this year, the respective studies will be submitted to the Dept of Water and Environmental (DWEA) and the Dept of Minerals and Energy (DME) respectively for a Mining Right application. The Mining Right, at its earliest acceptance, is expected to be granted in August 2012.

Smelting

50/50 agreement to develop the smelting and refining portion of the processing route between Sylvania and Jubilee

On the completion of the Volspruit feasibility (July 2011), the companies need to decide whether to form a formal JV company to develop the Volspruit Project as a collaboration or develop separately

Jubilee has found a site for the smelting with higher cost power

Needs to reapply for the environmental licence and more headroom on the emissions permits

ConRoast Process has low development risk from the perspective of 'scale-up', but medium risk with a view to combining the proven technology in a new integrated processing route

In November 2010 Sylvania entered into the Volspruit Smelting and Refining Agreement, which detailed its co-operation with another company, Jubilee Platinum, in a collaboration to develop plans to exploit the Volspruit Project in a strategic partnership. Jubilee owns the licences to utilise a process (designed by a metallurgical research institute called Mintek) to smelt PGM concentrate via a DC arc smelter (a process called 'ConRoast', which is different to that currently used by the four majors with a PGM smelting oligopoly in South Africa today).

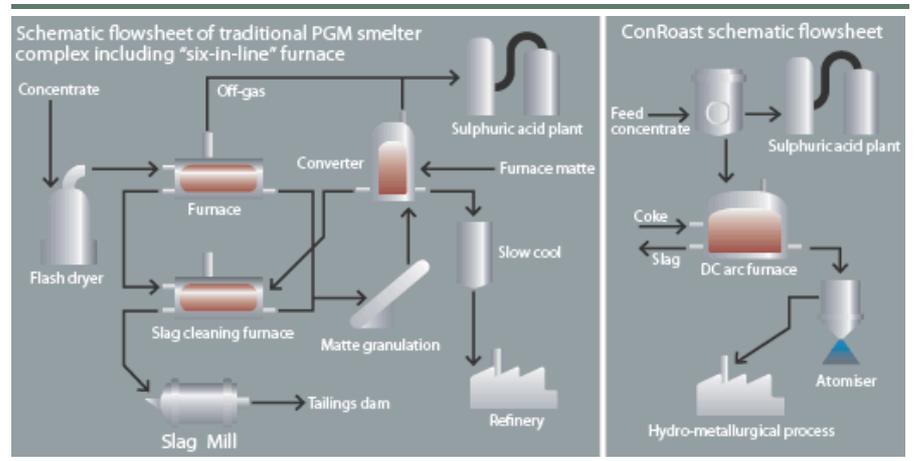
The principles outlined in the Volspruit Smelting and Refining Agreement complemented a Framework Agreement that Jubilee and Sylvania had signed earlier in 2010. The summary of these arrangements proposed that: the partners were to share development (50/50) of the smelting and refining operations (superseding an earlier 30/70 proposal); and that the mining and concentrating operations of future projects would also be shared 50/50 (not Volspruit, other Northern Limb Assets or existing Sylvania operations). On the completion of the Volspruit feasibility (July 2011), the companies need to decide whether to form a formal JV company to develop the Volspruit Project as a collaboration or develop separately.

One of the biggest question marks over these plans was the availability of a site to smelt the concentrate and the availability of power. In answer to this, Jubilee purchased 70% of a small ferroalloys smelting operation in Middelburg in July 2010. The site has a number of small (2.5MVA) arc furnaces on site and access to 6MW of Eskom power that can be currently supplemented by 10MW of Sasol gas-fired (on site) power generation. Jubilee would need to apply for additional headroom on the emissions permits currently licensed at site. Our understanding is that whilst the site was environmentally licensed by the DME, responsibility for the environmental licensing now lies with the DWEA, so permits would need to be re-applied for were plans to develop the site advanced.

Jubilee intends to build two 5MVA DC arc furnaces on site to treat PGM concentrate with the ConRoast Process that it has been licensed to use. For reference, a 8-10MVA furnace is expected to produce over a 100,000oz of PGMs from a 50 g/t concentrate. Whether the current power situation is workable from an economic standpoint is one of the key questions outside observers might ask. We do not have a view on this, but, for reference, the gas-fired plant might charge up to 100% more than Eskom's summer rates (or put another way, perhaps where Eskom's own summer power tariff could get to in three years time). We think that when considering these questions it is important not to focus too closely on the individual case. If continued piloting and feasibility test-work proves materially positive, it is not inconceivable that other capacity in the Bushveld could be found.

The ConRoast Process that has been proposed for usage on Sylvania's Volspruit ore is certainly different from that of the existing PGM smelting route currently operated in the Bushveld. However, whilst there is always some element of scale-up risk involved in new process routes, we do not feel this risk is as large as many perceive. The reason for this is that all of the elements that go into the ConRoast Process are (individually) already operating at full commercial scales. Connecting these elements in a process to be operated at a commercial scale does, however, pose the obvious risks associated with commissioning such operations. This is a very different proposal to an investment in a 'new technology' company.

Differences Between Currently Operating Smelting Route for PGMs and ConRoast Process



Source: Jubilee Platinum

Principle Areas of Difference Between the Currently Used Smelting Process and the One Proposed by Sylvania and Jubilee

The concentrate from Volspruit for smelting by ConRoast has a grade that is 3x lower than conventionally sold PGM ore in the Bushveld

- Test-work on a bulk sample of Volspruit conc smelted via the ConRoast Process at Mintek's facility has demonstrated 75% recoveries of PGMs.
- To focus on just the PGMs in the conc is only half the story when considering the integrated processing solution that Sylvania and Jubilee are proposing. The copper and nickel in Volspruit's ore are valuable assets to any smelter (conventional AC or DC arc) and their economic impact is often little talked of by the four major existing PGM smelting companies in the Bushveld (not least because those that sell PGM conc to a smelter do not get paid for the base metals in the conc).

In the ConRoast Process, instead of being flash-dried before entering a furnace, the conc needs roasting to drive off the sulphur

- Roasting concentrate is standard preparation for base metal smelting (or indeed prior to hydrometallurgical refining). The SO₂ that is driven off is used to create sulphuric acid. The process is analogous to 'converting' in conventional PGM smelting, where air is blown through molten metal (post primary furnace) in order to oxidise sulphur and iron.

A DC arc furnace is used rather than submerged arc AC to recover PGMs

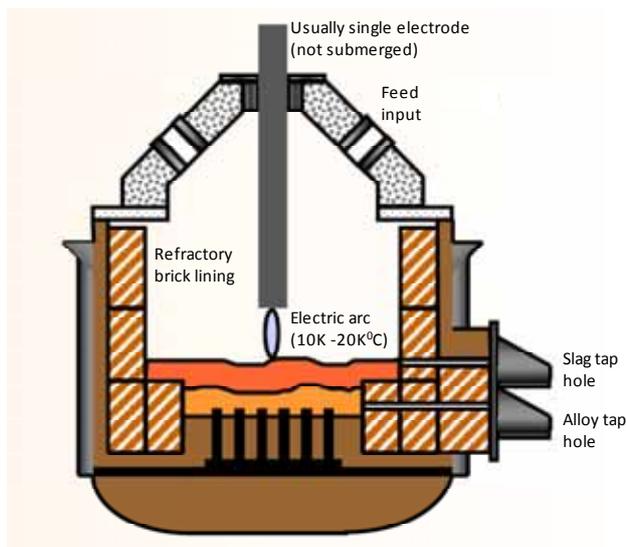
- The technology has been used for decades by the major ferroalloys producers. In that industry the behaviour of iron, chrome, PGMs and other impurities is well understood. Mintek, the designers of the concept of using a DC arc furnace to recover PGMs (rather than produce ferroalloys), designed the process, initially, as a way to improve the recoveries of UG2-orientated PGM concentrate – an issue for the current PGM smelting industry. The issue pertains to the fact that the existing PGM smelters operated by the majors suffer poor overall PGM recoveries on UG2 concentrate vs. Merensky or Plat Reef. This is because of the high chrome content of the UG2 reef, which is difficult to separate from matte (the PGM-bearing compound in the melt) unless very high temperatures are applied. One needs only to observe the issues that Lonmin has had with its #1 Furnace of late to see some of the issues that a growing volume of mined UG2 ore across the Bushveld is having. Mintek have processed over 57,000t of PGM-bearing ore with its ConRoast Process in a DC arc furnace that is 3MVA. This compares to the 5MVA furnace that Jubilee is currently proposing to build at its Middelburg site. We think this hardly poses the scale-up risk that comes with some 'new technology' stories.

A different compound 'collects' the PGMs in a molten state

- In a DC arc furnace route, the fact that molten iron collects the PGMs in the melt means that separating chromite present from the alloy becomes far easier. By contrast, matte in conventional PGM smelting operations is of a very similar density to chromite, which is why you need high, sometimes dangerous, temperatures to separate the two and why ultimately one achieves lower recoveries of UG2 to Merensky reef conc in conventional smelting.

- Producing a PGM-bearing iron alloy (rather than matte) means that a different refining process is required to produce end-metals. This has led Sylvania and Jubilee to choose a refining process designed by a company called CVMR (see below).
- The fact that Mintek’s DC arc process has proved so efficient and produces an iron alloy (rather than matte) that can be cheaply refined provided Sylvania with the idea that “this could open up previously uneconomic PGM reserves across the Bushveld which could be acquired for marginal costs.”

Schematic Cross Section of a DC Arc Smelter



Conventional PGM Smelting vs. DC Arc

- | | |
|---|--|
| <ul style="list-style-type: none"> • AC submerged arc furnaces • Several electrodes • Molten metal mixing can often be excessively turbulent • Chrome spinals (insoluble agglomerated portions of chromite) tend to form - forces higher temps in order to separate from matte, can partially block tap route, can lock up PGMs in slag than needs reprocessing (higher working capital demand) • Higher SO₂ emissions • Big Four platinum producers prefer to take 150 g/t conc (on a 4E PGM basis). It helps to lower their unit costs | <ul style="list-style-type: none"> • DC arc • Normally one electrode • Convection currents developed in furnace by a singular (non-submerged) arc from an electrode - ensures more efficient rate of sulphide coalescence to alloy • Anthracite is required to change oxidation state of chrome to ensure decent chromite solubility in slag • Only c.1/3 of iron need be reduced to ensure decent PGM recoveries to alloy • Sylvania’s Volspruit Project will produce conc that has a grade of approximately 50 g/t (on a 4E PGM basis). Sylvania thus needs its own smelting solution for the conc it produces |
|---|--|

Sources: Mintek, Ambrian

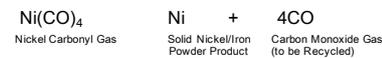
The Refining Step for PGM/Iron Alloy

CVMR®’s Carbonyl Process

Step 1: Carbonylation



Step 2: Decomposition



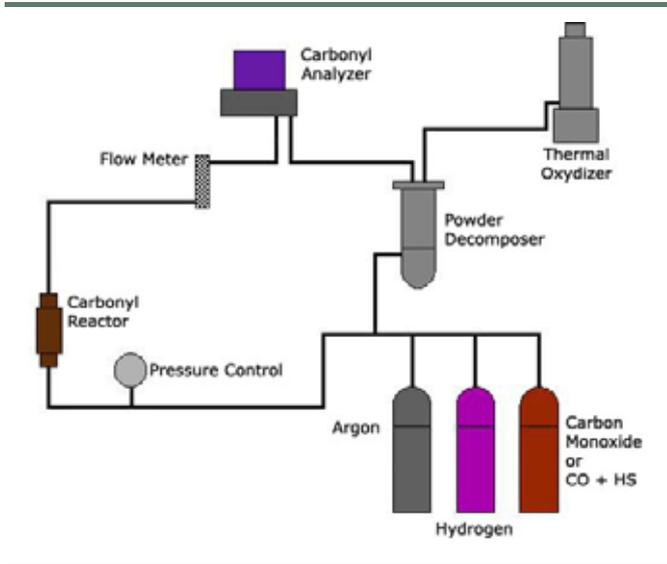
Source: CVMR

The US Treasury Dept uses CVMR to produce their minting templates (due to purity of the nickel that CVMR can deposit as a solid). NASA has also used them to produce pure nickel tubing

Sylvania and Jubilee have commissioned a feasibility study on the final refining step to be conducted by a company called Chemical Vapour Metal Refining (CVMR®). CVMR’s process involves sequential purification of both nickel and iron as gases from a solid concentrate. The gases are then forced to redeposit the metals they contain as solids, leaving an input gas to be recycled again. The substrate that is left is an ultra high-grade PGM compound that will be sold on for further refining. Pilot test-work on concentrate produced by ConRoast smelting has demonstrated recoveries of 99.5% Ni and 95.6% Fe, which suggests that the end products, aside from PGMs, could achieve purity premiums in LME pricing terms.

This is not new technology. Both Norilsk and Vale use older versions of similar carbonyl technology to CVMR for their own metal refining. CVMR has built three full-scale working plants utilising its technology – in Canada, Germany and one in China. CVMR owns a major stake in the Chinese company it built a plant for. This company is called Jilin Jien Nickel Industry Co, Ltd, and is a publicly-listed entity (stock code 600432 on the Shanghai Stock Exchange) and today one can go online and buy both the iron and nickel powders that the technology produces from this Chinese company. All of the plants are fully environmentally permitted in their respective countries and two have been operating since 1998 at least. The plant that CVMR built in China is producing product at a rate that is 1.5x greater than that demanded by Sylvania’s current production plan at Volspruit (6,000t pa Ni vs. c.4,000t pa Ni).

CVMR® Refining Process Schematic



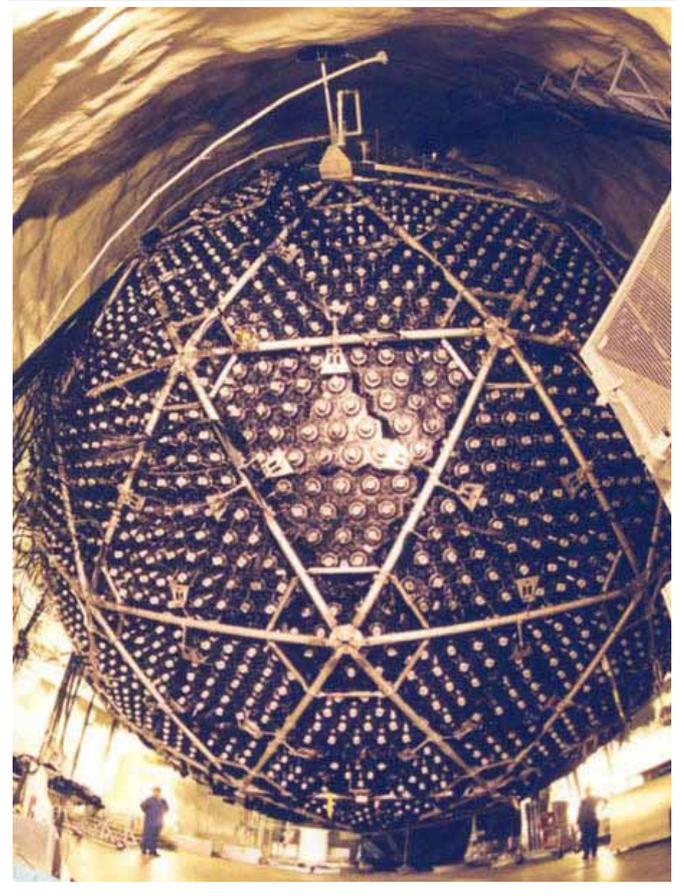
CVMR® Rotary Kiln for a Continuous Carbonylation Process Installed in China (2005)



Nickel Powder Decomposer, Designed and Built by CVMR® for the JJNI Refinery (2005)



Neutron Counter at the Sudbury Neutrino Observatory – NASA employed CVMR® to Build a Pure Nickel Exoskeleton for the Vessel



Sources: www.cvmr.ca

Appendix

First Pass DCF for Volspruit

This was an exercise as an adjunct to our resource-in-ground valuation of the resource base at Volspruit. Both studies gave us a similar valuation (US\$51-55m). We include here for readers interest. We used operating costs from other open-pit feasibility studies of PGM mining projects in the Bushveld (like Platmin and Platinum Australia's Kalplats Project) to define lower limits (ZAR200/t). Given that underground mines' operating costs (through to saleable concentrate) can average around ZAR400/t (see Aquarius Platinum, the only listed company we could find that breaks this cost detailing out in their financials), we set the upper limits at a 25% discount to this number. The data we drew this from was compiled in 2007, and whilst cost estimates will have undoubtedly changed from this point, we felt that where the industry was (in mine cost inflation terms, reagent pricing, etc) in 2007 is roughly analogous to currently experienced mine costs today (note, we use ZAR figures, so FX not as much of an issue).

We used management's own estimates for capex – which we felt was justified – bearing in mind that Sylvania's deputy CEO has 35 years of experience building and operating mines in Africa. We assumed a concentrator recovery of 75% for all metals (this is below what is experienced by other sulphide float plants processing fresh ore in the Bushveld – we added a discounting factor to account for the fact that a portion of the material that will be processed will be oxidised and transitional in character). We assumed spot rates for metals flat forwards and assumed a 75% payability on LME for metal in conc. Clearly, the latter assumption only works if a buyer for the conc can be found (other than the current smelters in the Bushveld). We have high conviction in the integrated processing plans that Sylvania has and, thus, we assumed that the 'buyer' would in fact be a subsidiary of Sylvania.

First Pass DCF for Volspruit (up to concentrate selling point)

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Inputs																				
Life of Mine	Yrs	16																		
Ore Mined	Mt	51																		
Waste Mined	Mt	114																		
Total Mined	kt	166																		
Strip Ratio		2.22																		
Mining Rate (total rock av pa)	Mtpa	1.0																		
Milling Rate (ore av pa)	Mtpa	3.1																		
Mill Feed Grade																				
3E + Au	g/t	1.22																		
Pt	g/t	0.55																		
Pd	g/t	0.64																		
Rh	g/t	-																		
Au	g/t	0.03																		
Ni	%	0.14																		
Cu	%	0.04																		
Concentrator Average Recovery	%	75%																		
Overall Mass Recovery	%	0.02																		
Final Concentrate Grade (3E + Au)	g/t	50																		
Concentrate Production (avg)	ktpa	57.44																		
	USD/ZAR		7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
	CAPITAL EXPENDITURE		7.00																	
	Mining	R000	-	(12)	(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Plant	R000	-	(114)	(150)	(73)	(99)	(305)	(215)	-	-	-	-	-	-	-	-	-	-	-
	Feasibility and Closure	R000	(10)	(50)	(8)	(14)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Infrastructure	R000	-	-	(70)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Closure costs	R000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Capital Expenditure	R000	(10)	(175)	(230)	(87)	(99)	(305)	(215)	-	-	-	-	-	-	-	-	-	-	-
	Milling Rate (ore av pa)	Mtpa				0.4	0.8	1.6	2.4	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
	Head Grade (3E + Au)	g/t				1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
	Pt in basket	%				45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%
	Pd in basket	%				53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%
	Au in basket	%				3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
	Ni	%				0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	Cu	%				0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	Concentrator av. recovery	%				75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
	Final conc. grade	g/t				50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
	Overall Mass Recovery	%				2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
	Conc. Production (avg)	ktpa				7	14	29	43	69	57	57	57	57	57	57	57	57	57	57
	Oz produced (3E + Au)	Koz pa				12	23	46	69	111	92	92	92	92	92	92	92	92	92	92
	Pt produced	Koz pa				5	10	21	31	49	41	41	41	41	41	41	41	41	41	41
	Pd produced	Koz pa				6	12	24	37	58	49	49	49	49	49	49	49	49	49	49
	Au produced	Koz pa				0.3	0.6	1.2	1.7	2.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
	Vaule of Pt in conc	US\$m pa				9	18	37	55	88	73	73	73	73	73	73	73	73	73	73
	Vaule of Pd in conc	US\$m pa				5	9	19	28	45	38	38	38	38	38	38	38	38	38	38
	Vaule of Au in conc	US\$m pa				0.4	0.8	1.7	2.5	4.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
	Tonnes Ni in conc	Ktpa				0.4	0.8	1.7	2.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
	Tonnes of Cu in conc	Ktpa				0.1	0.2	0.5	0.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Vaule of Ni in conc	US\$m pa				11	22	44	66	105	105	105	105	105	105	105	105	105	105	105
	Vaule of Cu in conc	US\$m pa				4	8	16	24	38	38	38	38	38	38	38	38	38	38	38
	Gross Metal Value in conc.	US\$m pa				29	59	117	176	281	258	258	258	258	258	258	258	258	258	258
	Net Revenue	US\$m				22	44	88	132	211	194	194	194	194	194	194	194	194	194	194
	Operating Costs - Low est	ZAR/t ore (200)				(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)	(200)
	Operating Costs - Mdest	ZAR/t ore (250)				(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)	(250)
	Operating Costs - Highest	ZAR/t ore (300)				(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)
	Operating Costs - Low est	US\$m (200)				(11)	(22)	(45)	(67)	(107)	(107)	(107)	(107)	(107)	(107)	(107)	(107)	(107)	(107)	(107)
	Operating Costs - Mdest	US\$m (250)				(14)	(28)	(56)	(84)	(134)	(134)	(134)	(134)	(134)	(134)	(134)	(134)	(134)	(134)	(134)
	Operating Costs - Highest	US\$m (300)				(17)	(34)	(67)	(101)	(161)	(161)	(161)	(161)	(161)	(161)	(161)	(161)	(161)	(161)	(161)
	EBITDA - Low cost est.	US\$m				11	22	43	65	103	86	86	86	86	86	86	86	86	86	86
	EBITDA - Mid cost est.	US\$m				8	16	32	48	76	59	59	59	59	59	59	59	59	59	59
	EBITDA - High cost est.	US\$m				5	10	21	31	50	32	32	32	32	32	32	32	32	32	32
	Tax - Low cost est.	US\$m				(3)	(6)	(12)	(18)	(29)	(24)	(24)	(24)	(24)	(24)	(24)	(24)	(24)	(24)	(24)
	Tax - Mid cost est.	US\$m				(2)	(4)	(9)	(13)	(21)	(17)	(17)	(17)	(17)	(17)	(17)	(17)	(17)	(17)	(17)
	Tax - High cost est.	US\$m				(1)	(3)	(6)	(9)	(14)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)
	Post tax CF- Low cost est.	US\$m				8	15	31	46	74	62	62	62	62	62	62	62	62	62	62
	Post tax CF- Mid cost est.	US\$m				6	11	23	34	55	43	43	43	43	43	43	43	43	43	43
	Post tax CF- High cost est.	US\$m				4	7	15	22	36	23	23	23	23	23	23	23	23	23	23
	Capex	US\$m				(1)	(25)	(33)	(12)	(14)	(44)	(31)	-	-	-	-	-	-	-	-
	FCF- Low cost est.	US\$m				(1)	(25)	(33)	(5)	1	(13)	16	74	62	62	62	62	62	62	62
	FCF- Mid cost est.	US\$m				(1)	(25)	(33)	(7)	(3)	(21)	4	55	43	43	43	43	43	43	43
	FCF- High cost est.	US\$m				(1)	(25)	(33)	(9)	(7)	(29)	(8)	36	23	23	23	23	23	23	23
	NPV - Low cost est.	US\$m											10%	193						
	NPV - Mid cost est.	US\$m											10%	103						
	NPV - High cost est.	US\$m											10%	12						
	NPV - Low cost est.	US\$m																		

Latest Resource Estimate for Volspruit

North and South Orebodies

Mineral Resources for the Northern Pit Area of the Volspruit Project								
	Million	Density	3e	Ni	Cu	3e	Ni	Cu
<i>Fresh Zone</i>	<i>Tonnes</i>		<i>g/t</i>	<i>ppm</i>	<i>ppm</i>	<i>ounces</i>	<i>(million) lbs</i>	<i>(million) lbs</i>
Measured	24.27	3.05	1.27	1415	390	990 972	75.7	20.9
Indicated	14.71	3.03	1.17	1486	393	553 333	48.2	12.7
Inferred	0.09	3.01	0.92	1776	330	2 662	0.4	0.07
Transition Zone								
Measured	2.28	2.84	1.2	1269	497	87 964	6.4	2.5
Indicated	1.21	3.0	1.2	1673	309	46 683	4.5	0.8
Inferred	0.62	3.0	0.95	1767	314	18 937	2.4	0.4
Oxide Zone								
Measured	1.92	2.2	1.16	1347	515	71 606	5.7	2.2
Indicated	0.72	2.2	0.96	1479	317	22 222	2.3	0.5
Inferred	0.05	2.2	0.97	1784	357	1 559	0.2	0.4
Total Resources								
Measured	28.47	2.97	1.26	1399	407	1 150	87.8	25.6
Indicated	16.63	2.99	1.16	1499	384	620 209	55	14
Inferred	0.76	2.95	0.95	1769	319	23 213	2.9	0.5

Mineral Resources for the Southern Pit Area of the Volspruit Project							
Resources	Tonnes	3E	Ni	Cu	3e	Ni	Cu
<i>Category</i>	<i>Millions</i>	<i>g/t</i>	<i>ppm</i>	<i>ppm</i>	<i>ounces</i>	<i>(million) lbs</i>	<i>(million) lbs</i>
Indicated	28.46	1.22	1186	386	1 116 265	74.4	24.2
Inferred	19	1.1	1000	300	682 555	42.5	12.8
Total	47.76	1.17	1111	351	1 796 507	116.9	37

Source: Sylvania

Research

Gurpreet Gujral	+44 (0)20 7634 4771
Duncan Hughes	+44 (0)20 7634 4775
Adam Kiley	+44 (0)20 7634 4777
Nick Mellor	+44 (0)20 7634 4762
Werner Riding	+44 (0)20 7634 4772

Sales Team

Charles Bendon	+44 (0)20 7634 4736
Jonnie Cox	+44 (0)20 7634 4763
Sims Farr	+44 (0)20 7634 4739
Tommy Horton	+44 (0)20 7634 4738
Caspar Shand Kydd	+44 (0)20 7634 4735

Trading

Cliff Banyard	+44 (0)20 7634 4742
Lee Hunter	+44 (0)20 7634 4753
Darren Knight	+44 (0)20 7634 4752
David Mackay	+44 (0)20 7634 4751
Nick Screech	+44 (0)20 7634 4741

Operations

Mike Dack	+44 (0)20 7634 4734
-----------	---------------------

Company Address

Ambrian Partners Limited
Old Change House
128 Queen Victoria Street
London
EC4V 4BJ

Telephone

+44 (0)20 7634 4700

Website

www.ambrian.com

Emails

firstname.lastname@ambrian.com

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