FIRST DELTA SECURITIES INC.
350 Bay Street, Suite 400
Toronto, Ontario
M5H 2S6
(416) 364-4001 Fax (416) 364-6603
1-800-205-7448 (U.S. Only)

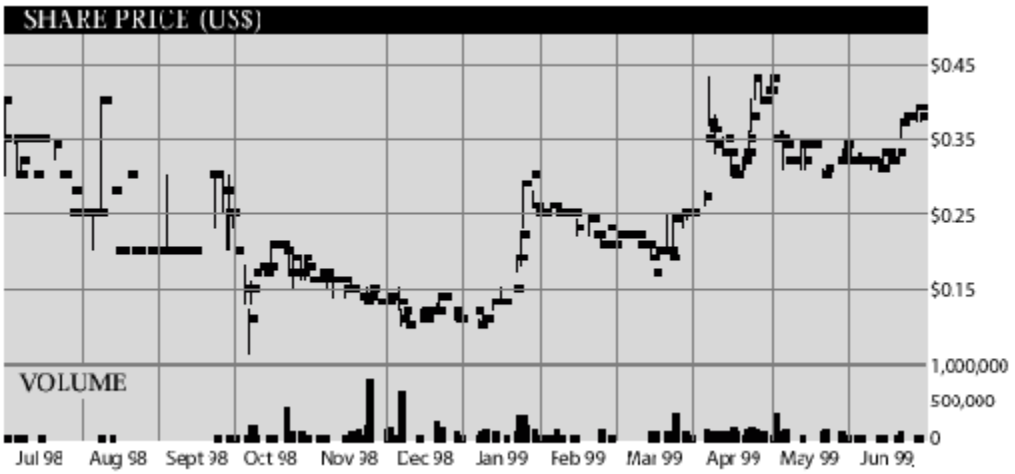
RESEARCH COMMENTARY
JUNE 30, 1999

WORLD'S LOWEST-COST MAGNESIUM PRODUCER
MAGNESIUM ALLOY CORPORATION

TRADING SYMBOL: MGAC.U-CDN

(ALL FIGURES ARE EXPRESSED IN UNITED STATES DOLLARS)

INTRODUCTION



Stock	MGAC.U - CDN
Current Share Price	US$0.38
Shares Issued	18.57 million
52 Week Hi/Low	US$0.51/$0.06
Market Cap	US$7.06 MM
Options	2.10 million
Warrants & Shares	6.87 million
Fully Diluted	26.06 million

Float	50%
Working Capital	US$ 300,000

Magnesium Alloy Corporation ("Mag Alloy" or "the Company") has been investigating the potential of mining carnallite salt beds in a vast evaporite basin located in the Republic of Congo, with the purpose of becoming a primary producer of magnesium metal. There are sufficient resources in this basin to support magnesium production for several hundred years. The mining techniques considered would employ proven low-cost solution mining to extract the magnesium-rich carnallite. Magnesium is currently experiencing double digit growth in demand mostly as a consequence of the increasing use of magnesium die-cast components by automobile manufacturers.

The Company has recently received the results of an independent feasibility study prepared by the engineering firm Salzgitter Anlagenbau GmbH ("Salzgitter"), a division of Preussag of Germany. This study was completed with the assistance of Kavernen Bau- und Betriebs-GmbH (KBB), the world-leader in all aspects of solution mining. Mag Alloy has also received a pre-feasibility study completed by SNC-Lavalin Inc. ("SNC") regarding the supporting hydroelectric project in the Sounda Gorge of the nearby Kouilou River.

Both studies are extremely positive and outwardly bullish towards Mag Alloy's prospects. The SNC study proposes that a major hydro dam should be built in the Sounda Gorge with a capacity of 360 MW. SNC has indicated that the project could supply electrical power to the company at a rate of $0.016 per kWh with a potential to reduce the rate significantly. This low power rate is critical as energy costs can account for up to 40% of the cost of magnesium production.

Salzgitter has used these energy costs ($0.016 per kWh) and has concluded that the magnesium plant, initially rated at 60,000 tonnes per annum, could produce magnesium metal and alloys at a cash cost of $0.55 per pound. **Salzgitter not only deem the project feasible, they also predict that Mag Alloy would be the lowest-cost producer in the world.** The results in this report are based on a selling price of $1.25 per pound of magnesium. Currently magnesium contracts are in the $1.30 to $1.80 per pound range.

Salzgitter further concluded that cash costs would drop below $0.50 per pound with either lower energy costs or with the production of by-products. **This would lead us to conclude that with both by-product production and lower energy costs the ultimate cash costs could be as low as $0.43 per pound.**

Salzgitter has demonstrated its confidence in this project by offering to design and build the plant and facilities on a turnkey basis and commence commissioning in the year 2003. Further, they will provide process guarantees for the applied technologies.

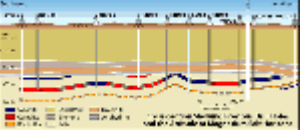
top

PROJECT LOCATION

Mag Alloy was granted two exploration permits, the southern Makola and northern Youbi permits, both located in the Kouilou region of the Republic of Congo. The Atlantic coastline constitutes the western limits of the contiguous permit areas with the southern limits sharing Congo's border with Cabinda (Angola). The northern limit of the license area is approximately 50 kilometres north of the town of Kayes. The eastern limit parallels the coastline approximately 70 kilometres to the east. The Congo's main industrial city and shipping terminus, Pointe-Noire, is encompassed within the Makola permit area. This city serves as an operations and development base for numerous international oil companies including Elf Aquitane, AGIP, Shell and Chevron.

The exploration permits each cover approximately 2,400 km^2 and are underlain by salt beds known to host extensive potash and magnesium salts. The permits were granted in May 1997 for a period of four years and may be renewed twice for a three-year period at each renewal. Mag Alloy is required to expend $10 million over the ten-year term of the permits and to prepare technical and economic feasibility plans within the first four years. To date Mag Alloy has spent approximately $3.5 million on the development of this project.

top



GEOLOGY AND RESOURCES

The target formations are an extensive sequence of potash and magnesium salt beds that extend over a large portion of the coastal region of West Africa. The salts are primarily horizontally layered beds of carnallite (potassium and magnesium). These salts and some lesser members are marine evaporite deposits accumulated by the deposition of salt minerals through the evaporation of seawater in land locked basins. An example of an active evaporite basin is the Dead Sea in Israel, which has seen the recent development of a magnesium project, 35% owned by Volkswagen AG.

The primary ore of interest is carnallite, an ore of magnesium and potassium, which carries about 9% magnesium. Bischofite and tachyhydrite, high-grade magnesium-rich salts, are also potential targets for magnesium recovery. The deposits were first discovered in the Congo in 1960 and are hosted in several basins that form a zone 5 to 40 kilometres-wide paralleling the Atlantic coast. The more extensive deposits occur close to the border with Cabinda within the Makola permit area. This region hosts the past producing Holle Potash Mine and is the primary target area for the development of carnallite beds.

Approximately 12 evaporite cycles have been identified over the entire license area and are buried at depths ranging from 300 to 800 metres. The earliest (deepest) and latest (shallowest) cycles of evaporation are not always present, though the remaining 10 cycles occur uniformly over the license area. The evaporite cycles average 60 metres in thickness, but vary up to 150 metres in some localities. From exploration work conducted by BRGM, Les Mines des Potasse Alsace (MDPA), and Elf Aquitaine between 1940 and 1990 (including over 140 exploration drill holes) and from data available from the Holle Mine, Mag Alloy has designed its license area to cover the thickest and most complete sections of the evaporite deposits.

The total indicated resources of carnallite located within the company's permits is estimated by the Congolese government to be in excess of 800 billion tonnes, sufficient to last hundreds of years.

Under the supervision of KBB, the Mengo-1 well was drilled and completed in November 1998. This location, 17 kilometres north east of Pointe-Noire, was chosen as the most likely and most proximal location for solution mining. The salt formation was cored from 475 metres to 600 metres, and 91 metres of core were sent for testing. The major constituents of the core were halite (61%), carnallite (31%) and tachyhydrite (7%). Salzgitter noted that the core was consistent with previous exploration results.

top

MAGNESIUM EXTRACTION PROCESS

This operation involves the following steps:

. brine is formed by dissolving carnallite utilizing solution mining technology (KBB)
. brine is pumped to the plant in Pointe-Noire
. carnallite crystals (KCl, $MgCl_2 . 6H_2O$) are formed by evaporation
. water is then driven off by dehydration to form KCl and $MgCl_2$ salts, the electrolysis feed stock
. salts are fed to the electrolytic cells, heated to a molten state, and chlorine is separated leaving pure magnesium floating on spent electrolyte
. magnesium is sent to the casting house where it is alloyed and cast into ingots

VAMI (Russian National Aluminum and Magnesium Institute) and UTI (Ukrainian Titanium Institute) are together the world leaders in electrolytic technology and in the last 50 years they have designed more than a dozen plants, including the recent Dead Sea Works magnesium project. Salzgitter have noted that VAMI has improved the efficiency of the fluid bed dehydrator, a large energy user and has, by increasing amperage, reduced the number of cells required in the electrolysis circuit, making this operation the most efficient in the world.

top

SOLUTION MINING

Carnallite, a brown orange salt, is so soluble that if left open to the air, it will completely dissolve in a short period of time. In this project, seawater is pumped down the well, it dissolves the salts, and the resultant brine is pumped to the plant. KBB, the world-leader in solution mining, estimated the operation needs 11 wells to start production with 6 new wells to come on stream per annum. Each will ultimately become a cavern 80-metres in diameter and 60-metres high. The wells will be on a 160- metre spacing. The yearly cost of drilling new wells is estimated at $5 million. Herein is one of the compelling aspects of the Kouilou project. The capital and operating costs of mining this deposit are a fraction of the costs encountered with conventional mining. The operation is effectively a drilling and water pumping exercise.

top

ENERGY

The magnesium plant in Pointe-Noire will require natural gas for the evaporation and dehydration cycles. This gas may be available from offshore wells that are currently flaring gas produced as a by-product of the production of oil or by developing one of the proximal known gas reserves.

The electrolysis cells are huge users of electricity. Salzgitter has estimated that each tonne of magnesium produced will require 16,000 kWh of energy. This gives an electrical requirement of 120MW for the operation. Mag Alloy has secured an option to develop a hydro project in the Sounda Gorge of the Kouilou River approximately 90 kilometres north east of Point-Noire. SNC's pre-feasibility study proposes that a dam be built to initially produce 360 MW. The ultimate capacity of this dam could exceed 1,000 MW. **SNC may consider joining a consortium consisting of themselves, international finance agencies and the Republic of Congo (free carry), to build the dam and transmission lines for $360 million.** SNC's present studies indicate that power to Mag Alloy could be provided at a rate of $0.016 per kWh. This rate may be reduced significantly with an expanded dam and a doubling of Mag Alloy's plant capacity to 120,000 tonnes of magnesium per annum. It is worthwhile noting that Norsk Hydro's Becancour plant in Quebec purchases energy at the rate of $0.022 per kWh and, to Norsk Hydro's disadvantage, the feedstock is magnesite imported from China. The process to render magnesium chloride from resources such as magnesite, serpentine and dolomite is complex and expensive. It involves hard rock mining, crushing, acid digestion and transportation. In contrast, solution mining of carnallite is simple, if not elegant.

top

PROJECT ECONOMICS

Salzgitter has formally offered to design and build the plant and facilities on a turnkey basis for a capital cost of $514 million. They will also provide process guarantees for the applied technologies. This translates to $8,571 per tonne of annual capacity. The capital cost is on par with Australian Magnesium Corporation ("AMC") and Noranda's Magnola plant. Their respective capital costs are anticipated at $8,300 to $8,600 per annual tonne. Dead Sea Magnesium Works and Norsk Hydro (Becancour) had final capital costs estimated at$17,000 to $18,200 per annual tonne.

The total operating cash cost is estimated at $72.6 million per year or $1,210 per tonne ($0.55 per pound). This is substantially less than Magnola's and AMC's estimates of $1,700 per tonne. Being the world's lowest-cost producer by a wide margin is an enviable position. This is possible for three reasons: cheap power; improved dehydration and cell technology; and sophisticated but very low-cost solution mining technology.

Salzgitter have calculated that for each $0.001 per kWh saved, there is a reduction of $18.00 per tonne (0.8 cents per pound). They have also recommended an additional capital investment of $10 to $25 million to recover the NaCl (table salt) and KCl (potash) by-products of the evaporation and crystallisation plant. Salzgitter estimates the profitability of these by-products to be approximately $90 to $150 per tonne of magnesium (4 to 7 cents per pound).

In summary, the project economics look excellent. The low power rate indicated by SNC-Lavalin could drive costs to $1,100 per tonne ($0.50 per pound) and a very modest incremental investment for by-product production could drop operating costs to as low as $950 per tonne ($0.43 per pound). In 2005, the first full year of operation, EBITDA is forecast to be nearly $90 million. The key results based on the Salzgitter study are given in the following table using a selling price of $2,750 per tonne ($1.25 per pound with by-products).

Key Project Economics

Annual Magnesium Production	60,000 tonnes
Total capital investment	$510 million
Debt/Equity	70/30
ROI (20 years)	17%
ROE (20 years)	32%
NPV (equity, 15% discount)	$165 million
Break even, per year (tonnes sold)	26,000 tonnes

top

RISK ANALYSIS

Projects of this nature have their own set of inherent risks.The following are the most important ones:

Price Pure magnesium prices range from $2,000 per tonne for often low-grade and intermittent Chinese metal to $2,900 per tonne (Norsk Hydro). Norsk Hydro (Becancour) has long-term contracts for $3,950 per tonne of magnesium alloy with automobile companies such as General Motors. There is a near-term possibility that the price could go up due to the permanent closure of Dow's 60,000 tonne facility in Texas. This represents 12% of installed capacity (505,000 tonnes of which at least 90,000 tonnes is uneconomic Chinese capacity) and 18% of production (360,000 tonnes). Magnola, the next plant to come on stream (63,000 tonnes), won't be at full production until late 2001. Two anticipated start-ups are Norsk Hydro's (Becancour) expansion at 43,000 tonnes in 2001 and AMC at 90,000 in 2004.

Last year magnesium consumption grew by 8%. If it continues at this rate then supply could become very tight in late 1999 and remain so for the next few years. The automobile companies need stable and declining prices to maintain their incentive to switch from steel and aluminum to magnesium. Therefore we anticipate that one or more of the international automakers will contract with Mag Alloy at favourable prices.

The following is a table illustrating an 8% growth in magnesium consumption versus production forecast from 1999 to 2003 in thousands (000's) of tonnes.

Year	**1999**	**2000**	**2001**	**2002**	**2003**
Consumption	389	420	453	489	528
Production	365	385	438	481	481

Technical Risk The technologies for this project are proven and in production at other locations. Salzgitter therefore is prepared to give process guarantees essentially eliminating the technical risk.

Country Risk The Republic of Congo should not be confused with the Democratic Republic of Congo, to the south, which is still in the midst of a major civil war. Nevertheless, the country did have its own brief civil war in 1997 and there is still sporadic conflicts around the capital of Brazzaville which is 450 kilometres from Pointe-Noire.

We note that the fighting is largely regional and on a tribal basis. It has essentially left Point-Noire unscathed other than electricity periodically being cut off. The oil companies continue to operate out of Point-Noire and there has never been an interruption of their operations in the last 25 years. This is important as 10% of US oil imports come from the Congo/Cabinda offshore fields.

There are institutions and programs that will insure the political risk. Most notable is MIGA (Multilateral Insurance Guarantee Agency) a division of the World Bank with whom Mag Alloy has developed a file. The Republic of Congo is a paid up member of MIGA and as such enjoys MIGA coverage against the following types of political risks:

. Transfer Restriction
. Expropriation
. Breach of Contract
. War and Civil Disturbance

Lastly, we note this country is desperately poor in terms of income per capita, however it does have a very wealthy resource base. A project of this scale along with the Sounda Gorge Hydro dam would be extremely beneficial to the Republic of Congo and its three million inhabitants. This new industry would materially impact the Congo's tax base and the dam would provide power necessary for the expansion of the country's infrastructure and GDP. We therefore think the people, the government, the World Bank, IMF and other agencies will embrace this project.

top

MANAGEMENT PROFILE

We have known several of the directors and management for more than ten years. In particular we have worked with Bill Burton in the past. He is a skilled geologist and negotiator with a great deal of integrity. He has assembled a competent management team capable of moving the project forward. The background and experience of Marcel Rigny impresses us. He has worked throughout the world on hydroelectric projects. Importantly he is Honorary Consul of the Republic of Congo in Canada. A strong independent board supports management.

VALUATION

Greenfield projects are notoriously difficult to value. As observed earlier the equity NPV at a 15 % hurdle rate is $165 million. We think the returns are sufficient to attract a joint venture partner such as a large industrial corporation. This is important as a joint venture partner or partners will bring strength to the project and will make it much easier to attract debt financing. We think a partner would finance the equity (approximately $150 million), arrange the debt financing, and operate the project in exchange for a 60% interest in the project. On an NPV basis Mag Alloy's 40% interest would be worth $2.50 per share fully diluted.

top

MAGNESIUM

This silvery white metal is the eighth most abundant element in the earth's crust, amounting to 1.9% of its composition. It is commercially produced from seawater, lake-brines, carnallite, magnesite, serpentine and dolomite. The process involves either electrolysis, or silico-thermic reduction (Pigeon process). Electrolytic plants, while capital intensive, have much lower operating costs than silico-thermic plants.

Magnesium is the lightest of all the structural metals with a density that is two-thirds that of aluminum and one-quarter that of iron. By itself magnesium is soft but when alloyed with other elements, such as aluminum and zinc, the alloys strength to weight ratio approaches that of high tensile steel. Magnesium alloys are superior to their aluminum and steel counterparts with respect to casting, machining and dimensional stability. They have high impact resistance and excellent damping capacity which combined with low inertia (i.e. lightweight) makes magnesium alloys an ideal choice for parts which undergo frequent and sudden high speed changes in the direction of motion. Magnesium also possesses superior heat radiation, heat stability and electromagnetic shielding properties. The new high purity alloys show better corrosion resistance than carbon steel and some aluminum alloys.

top

CONSUMPTION

Discovered in 1808, magnesium found initial use as flash powder for photography. Its flammability is well-known and the metal was used extensively in incendiary devices during both World Wars. During World War II magnesium was used as a structural element developed by the United States and others building seat frames, gas tanks and aircraft undercarriages for their warplanes. Prior to the 1990s, the consumption of magnesium remained relatively static with aluminum becoming the preferred metal on the basis of price. Today, (see table below) the dominant uses of magnesium are aluminum alloys, die-casting, and the desulphurization of steel. Magnesium (1 to 10%) added to aluminum imparts stiffness, strength and

durability, and allows the manufacture of very thin aluminum alloy sheet. More than 50% of all magnesium is alloyed with aluminum and is used for beverage can stock (i.e. beer and soft drink cans). The use of magnesium in aluminum alloys and desulphurization is expected to increase at an annual rate of 2 to 5%. The real growth for magnesium consumption is in die-casting where annual growth (32% in 1997 and 16% in 1998), is expected to exceed 10% for the foreseeable future. This is driven by the need to reduce greenhouse emissions from automobiles by reducing vehicle weight. A couple of examples serve to illustrate the ability to reduce weight. Mercedes has developed an intake manifold that at 4.3 kilograms weighs less than half its aluminum predecessor. Mercedes experienced savings in material costs and mold costs. Also no machining of the finished part was required. Fiat has developed a one piece instrument panel cross beam that is 44% lighter than the prior steel version that was comprised of 24 parts. Other applications include wheels, steering wheels, steering brackets, cylinder heads, and seat frames, clutch and gear housings.

The following is a table illustrating magnesium consumption(major segments) from 1996 to 1998 in tonnes.

Magnesium Consumption	**1996**	**1997**	**1998**
Aluminum alloying	138,000	146,200	154,400
Die-casting	72,300	95,300	110,100
Desulpherization	39,600	47,950	48,200

Currently the average American vehicle contains just three kilograms of magnesium. Various manufacturers have set a target of 40 kilograms per vehicle. Such an increase would require a tripling of worldwide capacity to 1.5 million tonnes of magnesium per year, which will only happen if several new projects come on stream.

top

MAGNESIUM PRODUCTION

Historical production costs have varied from $2,000 to $2,500 per tonne, and spot markets have been approximately $2,000 to $ 2,900 per tonne. Noranda has recently commenced construction of its Magnola magnesium facility at Asbestos, Quebec, Canada. The plant has a design capacity of 63,000 tonnes at approximately $1,700 per tonne. In comparison, Mag Alloy's production costs are anticipated in the $1,200 per tonne range and can be driven lower. Accordingly, the Company has a phenomenal price advantage.

Primary magnesium shipments of 360,300 tonnes in 1998 set a new record, an increase of almost 8% over 1997 (333,700 tonnes). Approximately 28% (99,600 tonnes) of total shipments were exports from Russia and China. The 1998 year end inventory of 44,300 tonnes amounts to 45 days supply.

The five year outlook for primary production is an increase to approximately 500,000 tonnes per annum and with demand conservatively estimated at 495,000 tonnes per annum, the supply demand balance will be fragile. New primary supplies of magnesium will be required to meet projected demands into the next century and this is why car companies are buying into magnesium projects.

With the recognition that magnesium will play an important role in the future, international automakers are aligning themselves with magnesium producers in new projects designed to provide predictable sources of supply and stable prices for this commodity. Volkswagen AG has invested in the Dead Sea Magnesium Works' 25,000 tonnes per year magnesium plant in Israel. Volkswagen invested $100 million for a 35% interest and will consume between 20 to 30% of the project's output. Total cost of the project, which is utilising an earlier and less efficient VAMI electrolytic technology, is expected to reach approximately $420 million. Ford Motor Company is participating in AMC's new magnesium facility, slated for production in 2004, by investing $30 million in a pilot plant and placing a $1.5 billion order for magnesium metal. General Motors and Norsk Hydro have announced plans for a long-term supply agreement.

These examples of major world corporations jockeying for secure sources of supply and processing facilities demonstrate the exceptional growth projected for magnesium and the faith these corporations have in this metal.

top

CONCLUSION

This is an extremely robust project capable of generating very high returns. We note that Mag Alloy is already in discussions with international concerns in both the automobile and aluminum industries. We expect this project will get their attention. The Company may also be considering a major industrial partner to enter the project on an equity basis.

We recommend the accumulation of Mag Alloy shares with a target price of $2.50.

Geordie Trusler, BSc, BAppSc, MBA, PEng.
First Delta Securities Inc.
Tel: (416) 364-4350
Email: gtrusler@firstdelta.com

For futher information please contact the Company at:

Magnesium Alloy Corporation
121 King Street West, Suite 850
Toronto, Ontario, M5H 3T9
Tel: (416)-360-4646
Fax: (416)-360-8669
Toll Free: 1-877-647-3117

top

Disclosure Statement

First Delta Securities Inc. is a member of the Toronto Stock Exchange, the Investment Dealers Association of Canada and the Canadian Investor Protection Fund.

First Delta Securities Inc. is acting as an advisor to Magnesium Alloy Corporation and has received and may receive future remuneration for such service.

The Partners, Directors and Officers of First Delta Securities Inc., or their clients, are or may be shareholders of Magnesium Alloy Corporation.

This report has been prepared by First Delta Securities Inc. The information contained herein has been obtained from sources believed to be reliable but their accuracy or completeness cannot be guaranteed and no representation or warranty, expressed or implied, is made as to their accuracy or completeness. This report is for information purposes only and this report is not, and is not to be construed as, an offer to sell or solicitation to buy, any securities mentioned herein. Neither First Delta Securities Inc. nor any of its affiliates accepts any liability whatsoever for any loss arising from the use of this report or its contents.