

# Fundamental

Research Corp.

Investment Analysis for Intelligent Investors

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## Canadian Zinc Corporation (TSX: CZN, OTC.BB: CZICF) – Initiating Coverage; High Grade Prairie Creek Mine

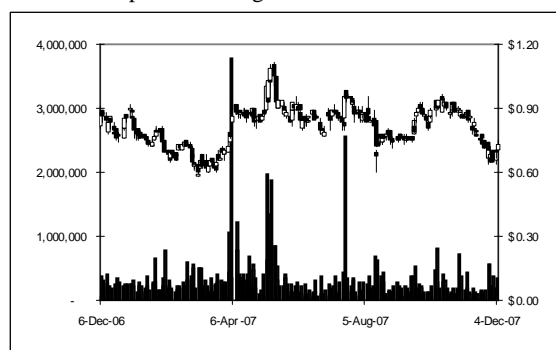
Sector/Industry: Mining/Zinc/Lead/Silver

[www.canadianzinc.com](http://www.canadianzinc.com)

### Market Data (as of December 6, 2007)

Current Price	C\$0.72
Fair Value	C\$1.00
Rating*	BUY
Risk*	5 (Highly Spec)
52 Week Range	C\$0.58 – C\$1.12
Shares O/S	120,213,962
Market Cap	C\$86.55 mm
Current Yield	N/A
P/E (forward)	N/A
P/B	1.42
YoY Return	-17.2%
YoY TSX	7.4%

\*see back of report for rating and risk definitions



### Investment Highlights

- The Prairie Creek Mine is a very high-grade silver lead zinc vein system with a large NI 43-101 compliant resource estimate. It is one of the highest grade undeveloped resources in the world.
- The value of infrastructure is estimated at \$100 million, which includes a flotation mill, offices, a 200 person camp, and mining and maintenance equipment.
- In 2006/7, the company completed an underground drilling program for resource definition and delineation, which included extending the existing underground workings.
- In 2007, the company received a Land Use Permit to reopen the winter road, which is crucial for reopening the mine.
- The company requires one remaining permit, a Class A water license, to put the property into production. They plan to submit this application by year-end. We estimate the permitting process will take approximately two years.
- The project can be put into production quickly (within six months) following the receipt of final permits.

### Risks

- Canadian Zinc is involved in extensive consultation with First Nations, environmental groups, and branches of the Canadian government. There have been significant time delays in the permitting process due to various factors associated with the consultation process and opposition from some groups.

### Key Financial Data (FYE - December 31) (C \$)

	2005	2006	Q3-2007 9 mo
Cash + Others	16,063,876	29,337,082	32,081,520
Working Capital	16,039,646	29,142,161	30,107,092
Mineral Assets	18,495,140	26,700,256	35,806,301
Total Assets	34,694,580	56,762,186	68,582,296
Net Loss	(1,967,312)	(1,486,416)	(236,646)
Loss per Share	(0.03)	(0.02)	(0.00)

\*FRC's geologist and another FRC employee have visited CZN's property in the past 12 months.

Canadian Zinc owns the Prairie Creek Mine, an advanced stage development project with a large silver, lead, and zinc resource. This property can be put into production quickly and cheaply upon receipt of final permits. However, the permitting process has caused significant time delays, due, in part to controversy surrounding the project from First Nations and environmental groups and the cumbersome structure of the regulatory process in the Northwest Territories.

**Company  
Overview**

Canadian Zinc's predecessor company, San Andreas Resources, acquired the Prairie Creek Mine in 1991. The company changed its name to Canadian Zinc in 1999. The company began the permitting process for exploration and development at Prairie Creek in 2000, and has since secured six permits for various operations. Canadian Zinc is conducting exploration and development on the Prairie Creek Mine with the intention of bringing it into production. A scoping study completed in 2001 indicates that the mine could be brought into production within six months of receiving the final permits for the mine. The property was previously advanced to within two months of production in 1980, but the project was abandoned when the price of silver dropped and its owners were forced into bankruptcy. The value of the existing infrastructure at the mine is at least \$100 million, and because of this existing infrastructure, the project can be put into production at a low capital cost.

**Parties  
Involved**

The controversy surrounding the Prairie Creek Mine is complex and involves political, environmental, and social issues. The proposed mine falls within the proposed expansion of the Nahanni National Park Reserve, a remote and undeveloped area that is beloved by environmentalists and claimed as the traditional territory of the Deh Cho First Nations. The company is aiming to prove that a mine can co-exist with the park and that they can provide meaningful economic benefit to the local First Nations and communities. There are many parties involved in the advancement of the Prairie Creek Mine. We think it is useful to consider these parties, their involvement, their advertised position, and their influence. They are presented in three categories: government, First Nations, and environmental groups.

**Government**

**Mackenzie Valley Land and Water Board:** This government body is responsible for the permitting process for mines in the Mackenzie watershed of the Northwest Territories. At this time, the company has one permit in progress with MVLWB: a Type B Water License to upgrade and rehabilitate a portion of the winter road. The application was filed in June 2007, and has gone through a public comment period. The only remaining permit for production is a Type A Water License. This license will allow the company to extract material, pump water from the Prairie Creek Valley aquifer, produce concentrates and dispose of tailings, and discharge treated effluent. This application has not been formally submitted yet, but is in progress.

**Parks Canada:** This government body is responsible for the management and proposed expansion of the Nahanni National Park Reserve. This expansion has been proposed for over five years, and was announced publicly in August 2007. Parks Canada is currently in the process of a Mineral Energy and Resource Assessment (MERA) study for the proposed park expansion. Part of this MERA study is a mineral potential report, which has not been released yet. The boundaries of the proposed expansion, which has not been finalized, will not include Canadian Zinc's property or winter road access route. The Government of Canada has assured that all third party rights still exist along with their inherent rights of access. According to management, the Park Expansion Consensus Team has recently proposed 3 options to consider for park expansion. All options accommodate Prairie Creek and its access route.

**Department of Indian Affairs:** The Department of Indian Affairs is required to ensure that

adequate crown consultation is completed with the Deh Cho First Nations. The minister is the ultimate steward of the land and has veto power over all permits.

### **First Nations**

**Deh Cho First Nations:** The Deh Cho First Nations are currently in negotiations with the government of Canada to establish a self governing treaty. This is known as the Deh Cho Process and has been on-going for over five years. The proposed park expansion by Parks Canada and land withdrawal were originally connected to the Deh Cho Process. In 2003, the government of Canada reached an Interim Measures Agreement with the Deh Cho. Canada withdrew certain lands for a period of five years. Canadian Zinc maintains third party rights on withdrawn lands that fall within their property package.

**Nahanni Butte Dene Band:** The Nahanni Butte Dene Band is a Band member of the Deh Cho. The community is made up of approximately 90 members and represents the closest community to the Prairie Creek Mine, 90 kilometers away. They are governed by a Chief and Council with an election every two years. The company had an Economic Cooperation Agreement with the Nahanni Butte Dene Band in 1996, however the Nahanni Butte Band has declared this agreement void while the company still considers it valid. In 2003, the Nahanni Butte Band filed a formal complaint with the MVLWB citing lack of adequate crown consultation with regards to the winter road permit. This issue was resolved in 2005. The issues surrounding consultation and sentiment are complex. The issues that arouse opposition to the mine are tempered by a desire for the creation of jobs and the economic benefits of a mine. Canadian Zinc is aiming to have at least 30% of their 200+ workforce be First Nations.

### **Environmental Groups**

**Canadian Parks and Wilderness Society (CPAWS):** The Canadian Parks and Wilderness Society is a non-profit conservation organization focused on wilderness protection in Canada. They oppose any development within the South Nahanni River's watershed and fully embrace the proposed park expansion.

### ***Prairie Creek Mine***

**Property Overview:** The 11,540 hectare Prairie Creek property has a long and unique history. It has a fully developed minesite with significant infrastructure and mineral resource, but has never operated.

**Ownership:** The Prairie Creek property consists of two surface leases, eight mining leases, and ten mineral claims. The company acquired the property in 1991 from Nanisivik Mines Ltd., who had acquired the property through bankruptcy proceedings. San Andreas Resources Corporation, the predecessor company, acquired an initial 60% interest in the property. In 1993, San Andreas acquired 100% interest in the property and 60% interest in existing infrastructure. This was subject to a 2% net smelter royalty to Titan Pacific Resources Limited. In 2004, Canadian Zinc acquired all of Titan's interest, including the 2% NSR and Canadian Zinc now retains 100% ownership of the property.

**Historic Exploration/Production:** Mineralization was discovered on the west side of Prairie Creek by prospectors conducting a regional exploration program in 1928. Early

exploration was focused on the southern zones 5-8, until the discovery of the Main Zone (Zones 1-3) in the early 1960's. The property was held by Cadillac Exploration, who brought in Procan Exploration to finance mine development in 1980. Procan was financed by the infamous Hunt Brothers, the Texas based entrepreneurs who tried to corner the silver market by purchasing physical silver and storing it in Swiss vaults. They were able to drive the price of silver up to \$40/oz, and were developing several silver mines around the world to profit from these record highs. Eventually, the government caught up with them and the price of silver crashed to less than \$5/oz. The Prairie Creek Mine was two months away from full scale production when the project was essentially abandoned.

Canadian Zinc (then San Andreas Resources) acquired the property in 1991. Significant work has been completed on the project since that time. Extensive grassroots exploration, drilling, and subsequent resource expansion has greatly improved the geologic understanding and resources. To date, the company has completed 159 surface drill holes totaling 48,108 meters and 41 underground drill holes totaling 8,217 meters and over 600 meters of underground development.

**Accessibility and Infrastructure:** The Prairie Creek Mine, although it never operated, is fully outfitted for a mining operation. During our site visit, we observed the entire infrastructure, including underground workings presently developed for a 500 tpd operation, a fully outfitted 1,000 tpd flotation mill, a 200 man camp, and support buildings including offices, maintenance shops, machinery, and supplies. Mill reagents for a year of production are even stored on site.



Source: Canadian Zinc Corporation

**Power:** The company uses diesel generators to power the Prairie Creek Complex, and expects to replace the existing generators to power operations at the Mill with more fuel efficient units. Diesel power generation is expensive, but it is the only option for the Prairie

Creek Mine. Diesel power generation can become cost prohibitive at higher operating rates than Canadian Zinc's.

**Water:** On our site visit, we observed the proximity of the property to Prairie Creek and the environmental protection in place to protect Prairie Creek from receiving any run-off from the camp. The Prairie Creek camp is separated from the Prairie Creek Mine by engineered flood berms designed to withstand a one in 200 year flood event. The company has water treatment facilities in place to treat mineral enriched water coming from underground workings. For production, the company plans to source water from the Prairie Creek Valley aquifer by wells. The company will dispose of treated process effluent water to Prairie Creek. This water will have to meet stringent water quality standards.

**Tailings Pond:** A 1.5 million ton tailings pond, suitable for 7-8 years of production at 1,000 tpd, was constructed onsite. It is clay lined and is separated from Prairie Creek by an engineered and fully armored berm. In part to avoid the controversy surrounding tailings disposal adjacent to Prairie Creek, the company is planning to use backfilling to dispose of most of the waste material in underground workings. The tailings pond will be used for temporary tailings disposal and process water containment. This will make the tailings pond usable for a longer period of time and minimize long term reclamation issues. The tailings pond requires a new lining and minimal engineering work for an estimated cost of \$1.3 million. This work will be included in the proposed feasibility study.



*The tailings pond is separated from Prairie Creek by engineered berms and lined with clay. It will now only be used for temporary tailings disposal and process water containment.*

*Source: Fundamental Research Corp.*

**Winter Road:** When the mine was developed, all construction materials and infrastructure was hauled in over 700 loads to Prairie Creek up a 170 kilometer winter road from Fort Simpson to the site. The first 40 kilometers of the road closest to the site are “all season” access. The road was useable from January-April. This road was fully permitted until 1983, but the permits lapsed. Canadian Zinc applied to reopen the winter road in 2003, and the permit faced controversy since it travels over an environmentally sensitive area. The Supreme Court of the Northwest Territories ruled that since a previous environmental assessment had already been completed the company was grandfathered and not required to do an additional study prior to receiving the permit. The company's permit was granted in April 2007, nearly four years after the application was submitted.

The company has applied for a Type B Water License to repair and rehabilitate the initial sections of the winter road corridor during the summer months. This permitting requirement was triggered by the need to place more than 100 cubic meters of rock material in an active waterway. Reopening is a crucial step for the economics of an operation at Prairie Creek. Although an all weather road would be ideal, the plan for now would be to store metal concentrate on or near site in containers and truck it out during the 3-4 months the winter road is operational. It will be trucked to the nearest railway in Fort Nelson, British Columbia, where it will be shipped to a smelter.



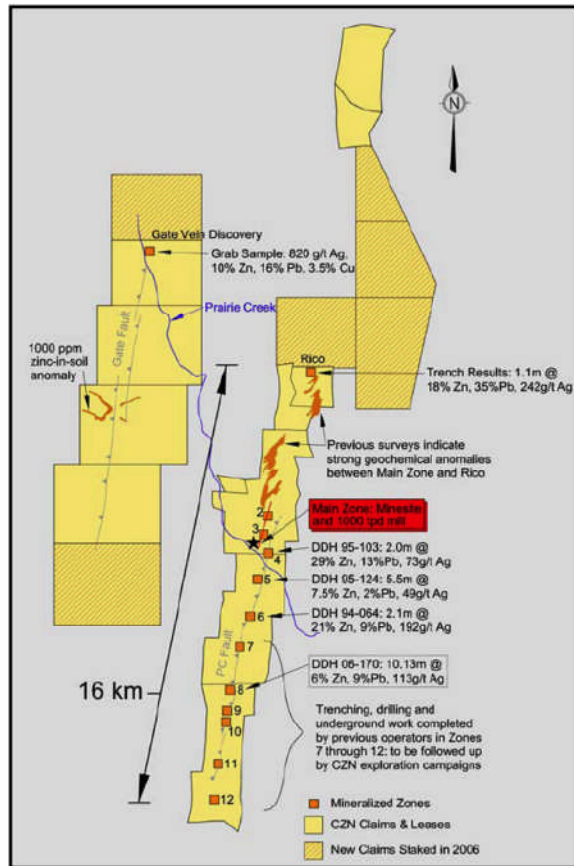
*The existing winter road corridor as viewed March 2006.  
Source: Canadian Zinc Corporation*

**Geology and Mineralization:** The company has identified three distinct styles of mineralization at Prairie Creek. The primary mineralization, which comprises the entire historic resource estimates pre-1992, is contained in a unique sulfide and oxide mineral assemblage hosted by narrow high-grade quartz veins. At least 12 mineralized vein zones have been identified over a 16 kilometer strike length. The company has conducted some drilling on Zone 8, but drilling these zones is more difficult due to their steep topography, which limits access. Going forward, the company is considering helicopter assisted drilling to further assess the potential of these zones.

The company discovered stratabound, carbonate hosted lead-zinc sulfide mineralization in 1992, which added significant resources to the project. There is also a small hydrothermal vein stockwork resource associated with the Main Zone veins.

The third mineralization type is Mississippi Valley type sulfides, which have had insufficient

exploration to define resources. These deposits are to the north of vein mineralization, and include the Horse, Jo, and Samantha showings. This mineralization style is similar to the Pine Point open pit lead-zinc mine in the Northwest Territories, which closed in 1982.



The Main Zone and mineralized zones 4-12 are delineated on this map. The Gate claims to the west are the site of current grassroots exploration, including drilling.

Source: Canadian Zinc Corporation

**Metallurgy:** Extensive metallurgical work has been completed to date, and a 1,000 tpd flotation mill exists on site for processing. This mill is 90% completed. The Prairie Creek ore carries several penalty elements, including mercury, antimony, and arsenic. This will incur smelter penalties. The smelting cost and associated penalties will be incorporated in the operating costs under the proposed feasibility study.

Metals	Recovery	Concentrate Grade
<b>Vein Material</b>		
<b>Lead</b>	88 % sulfide, 84 % oxide	56 % - 72 %
<b>Zinc</b>	82 % sulfide, 87 % oxide	51 % - 63 %
<b>Silver</b>	74 % sulfide, 78 % oxide	750 g/t – 860 g/t
<b>Stratabound Material</b>		
<b>Lead</b>	90 % (sulfide only)	60 %
<b>Zinc</b>	91 % (sulfide only)	54 %
<b>Silver</b>	62 % (sulfide only)	400 g/t
<b>Combined Vein and Stratabound Material</b>		
<b>Lead</b>	80 % (sulfide and oxide)	60 %
<b>Zinc</b>	79 % (sulfide and oxide)	55 %
<b>Silver</b>	73 % (sulfide and oxide)	1000 g/t

The company plans to use heavy liquid separation and conventional flotation to produce two concentrates: a lead and a zinc sulfide concentrate. Heavy liquid separation removes quartz and carbonate host rock (waste) material before it is put through the flotation circuits which enhances the amount of metal feed into the mill. SGS Lakefield's metallurgical testing in 2005 indicates that vein type and stratabound type material can be processed together with suitable recovery rates.

**Reagents:** There are enough flotation reagents for one year of operation stored on site. Procan Exploration brought in these reagents on the winter road in the 1980s. The presence of cyanide on site has been one environmental concern raised by environmental groups and First Nations. **The company is not planning to utilize cyanide in their milling process and according to management, has recently completed a re-packaging program of the stored cyanide and it is now ready for shipment off site and proper disposal.**

**Acid Neutralization Potential:** One potential risk with base metals mines is acid mine drainage, which is created by the mixture of atmospheric waters and sulfide minerals, forming toxic sulfuric acid. At Prairie Creek, the potential for acid mine drainage is reduced by the presence of carbonate host rock, which is basic and reacts with acid to neutralize it. The results of a detailed analysis of acid generating characteristics indicate an overwhelming dominance of neutralizing carbonate minerals in the order of a 200:1 ratio.

### 2001 Scoping Study

**Economic Studies:** The company completed a scoping study in 2001 that considered the economics of reopening the mine. Although costs have risen and the resource estimate has changed, we believe it is useful to review this document, as it highlights robust economics for the Prairie Creek Mine. The scoping study results are outlined in a table below. The company plans to update the scoping study and bring it to a pre-feasibility level in 2008.

<b>Capital Cost</b>	\$40.5 million	Includes cost to establish an all season access road
<b>Operating Cost</b>	Approximately \$80/tonne	
<b>Operating Rate</b>	1,500 tonnes/day	The mill is currently outfitted for 1,000 tpd
<b>Mine Life</b>	18 years	Based on historic, non 43-101 compliant resources
<b>NPV</b>	\$97.2 million	At 10% discount
<b>IRR</b>	45%	An IRR above 15% is considered good

**Current Developments:** The company is conducting simultaneous resource definition and grassroots exploration programs.

1. Resource Expansion: The company has now completed a 250 meter underground decline extension to conduct further underground drilling at 50 meter spacing. Drilling is underway to expand the measured and indicated resource.
2. Grassroots Exploration: The company has mobilized a helicopter drilling unit to drill soil anomalies and a vein system identified on the Gate Claims to the northwest of

the Prairie Creek Mine. Assays are pending and numerous grassroots targets on the property remain to be tested.

**Resource Estimate:** When the mine was developed in the 1970s, approximately 2 million tonnes of ore was delineated through underground development. The company has been expanding the resource for 16 years. The current resource was announced in October 2007, and incorporates all drilling completed by the company since 1992. It updates the historic resource estimate calculated in 1998, into a NI 43-101 compliant resource, and incorporates underground development work. This report resulted in large increases in measured and indicated tonnages in the vein and stratabound resource categories that provide adequate comfort and detail needed for mine planning. **There is still potential for resource expansion in the ongoing underground development and exploration program, as well as the numerous vein structures identified over a 12 kilometer strike length.**

Category	Tonnes	Lead	Zinc	Silver	Copper
<b>Measured</b>	1,550,041				
<b>Vein</b>	938,624	11.63%	13.11%	211.89 g/t	0.465%
<b>Stratabound</b>	611,417	6.68%	10.85%	67.55 g/t	--
<b>Indicated</b>	4,290,288				
<b>Vein</b>	2,944,862	12.67%	11.16%	212.39 g/t	0.472%
<b>Stratabound</b>	663,261	5.53%	10.15%	61.99 g/t	--
<b>Stockwork</b>	682,165	2.68%	5.85%	50.15 g/t	0.112%
<b>Total Measured &amp; Indicated</b>	5,840,329	9.90%	10.71%	161.12 g/t	0.329%
<b>Inferred</b>	<b>5,541,576</b>	<b>11.43%</b>	<b>13.53%</b>	<b>214.80 g/t</b>	<b>0.514%</b>
<b>Vein</b>	5,516,297	11.46%	13.55%	215.53	0.516%
<b>Stratabound</b>	21,234	5.65%	10.49%	55.71 g/t	--
<b>Stockwork</b>	4,045	2.51%	5.54%	51.31 g/t	0.126%

In addition, approximately 40,000 tonnes of ore is stockpiled next to the mill.

## Management

### John F. Kearney - Chairman and President

John Kearney has over thirty years experience in the mining industry worldwide. With degrees in law, economics and business administration, he has a strong background in corporate development, finance and managing public companies, primarily in the mining field.

He was previously President and Chief Executive of Northgate Exploration Limited (TSE; NYSE: LSE) Campbell Resources Inc. (TSE; NYSE; MSE) Sonora Gold Corp. (TSE; NASDAQ). He is currently Chairman of Anglesey Mining plc (LSE) and Conquest Resources Limited (TSX-V) and a Director of Avnel Gold Mining Ltd. (TSX: AVK); Scandinavian Minerals Limited (TSX); Sulliden Exploration Inc. (TSX) and Minco plc (AIM). He is also a director of the Mining Association of Canada, and of the NWT and Nunavut Chamber of Mines.

A director of Canadian Zinc since 2001, Mr. Kearney was appointed President in June 2003 and since that time has led the Company in the redevelopment of the Prairie Creek Mine, including raising over \$40 million.

**Alan Taylor, P. Geo. - VP Exploration, Director and Chief Operating Officer**

Mr. Taylor has over 25 years experience in the mineral exploration industry and is a qualified P.Geo. with a Masters degree in Geology. He previously worked with Cominco, Imperial Metals Corporation, GSC, OGS, along with numerous other junior companies throughout the world. He is a member of the GAC, CIM, BC & NWT Chamber of Mines and is presently also a Director of Sunrise Minerals (TSX.V: SUN).

Mr. Taylor was formerly president of San Andreas Resources (Canadian Zinc's predecessor company) and has been involved with the Prairie Creek Mine and property for over 10 years. During his involvement on the property the mineral resource base has increased significantly in order of magnitudes as a result of exploration.

**Martin Rip - Chief Financial Officer**

Mr. Rip and was only recently been appointed as CFO for the company. Mr. Rip is a Chartered Accountant with over 10 years experience in industry and public practice and is the former VP Finance and CFO of Pine Valley Mining Corporation. Mr. Rip will be based in the Vancouver office.

**Robert J. Gayton - Director**

Robert Gayton graduated from the University of British Columbia (UBC) in 1962 with a Bachelor of Commerce and in 1964 earned the Chartered Accountant designation while at Peat Marwick Mitchell. He joined the Faculty of Business Administration at UBC in 1965, beginning 10 years in the academic world, including time at the University of California, Berkeley, earning a Ph.D. in Business.

Mr. Gayton rejoined Peat Marwick Mitchell in 1974 and became a partner in 1976 where he provided audit and consulting services to private and public company clients for 11 years. Mr. Gayton has directed the accounting and financial matters of public companies in the resource and non-resource fields since 1987.

In addition to Canadian Zinc Corporation, he also serves as Director and Chairman of the Audit Committee for Bema Gold Corp., Western Copper Corp., Nevsun Resources Ltd. and Northern Orion Resources Inc. among others.

**John A. MacPherson – Director**

John MacPherson is the original visionary and founding chairman of Canadian Zinc Corporation. He has been active in public markets, corporate finance and corporate development for over 30 years. During this time he has led the strategic development of several successful ventures, primarily in the fields of mining and oil and gas.

Throughout his career he has served as director of many private and public corporations listed on the Toronto, AMEX and London Stock Exchanges. In addition to Canadian Zinc

Corporation, he is also a director of Tower Energy Ltd., a publicly traded oil and gas company.

**Alan Savage - Director**

Mr. Savage entered the mining industry in 1978 and formed the predecessor company to Imperial Metals Corporation, where he was president until his departure in 1986. Thereafter, he was involved in the exploration of the Windy Craggy deposit, and in the discovery and feasibility of the Huckleberry Copper mine.

Mr. Savage is currently the president of Doublestar Resources Ltd., and is a director of Copper Ridge Explorations Ltd.

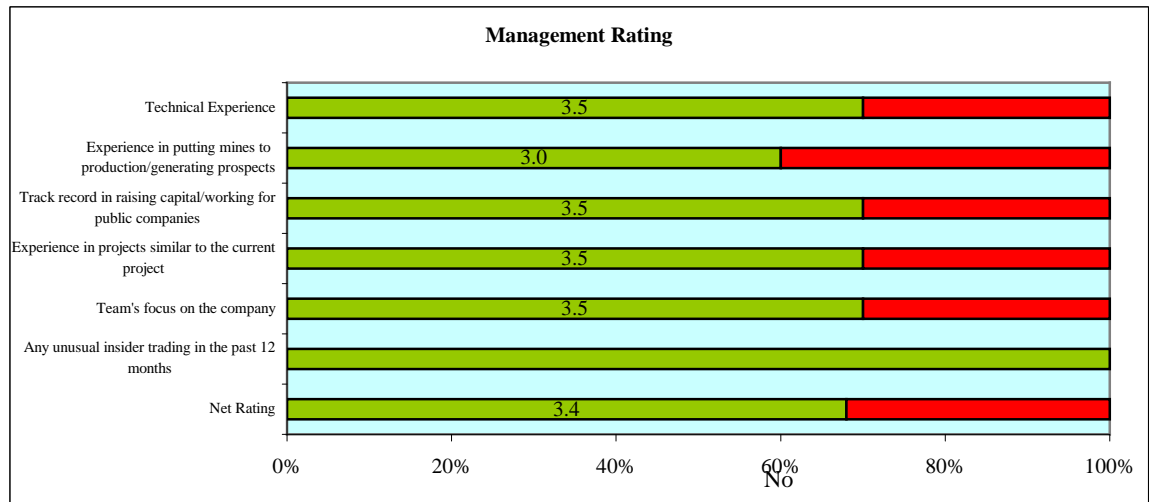
**David Nickerson – Director**

Dave Nickerson has spent much of his life as a Member of the Legislative Assembly of the Northwest Territories, where he served as Minister of Health and Social Services, and as a Member of Parliament for nearly 10 years. He served as Chairman of the Northwest Territories Water Board, a federal body charged with the administration of water rights and environmental protection in the NWT, and also as a member of the Development Appeal Board for the City of Yellowknife.

A Professional Engineer, Mr. Nickerson holds a Bachelor’s Degree in Mining Engineering and a Master’s Degree in Mineral Exploration. He is also a director of Tyhee Development Corp.

**Management Rating**

We have developed a management rating system as a quantitative way to rate management based on a number of factors, including technical experience, the ability to raise financing, and management’s time commitment to the company. We also analyzed trading records to identify for evidence of unusual trading by management. **Our net rating for Canadian Zinc(see below) was 3.4, which we have rated average.** The management team is experienced in exploration and raising financing.



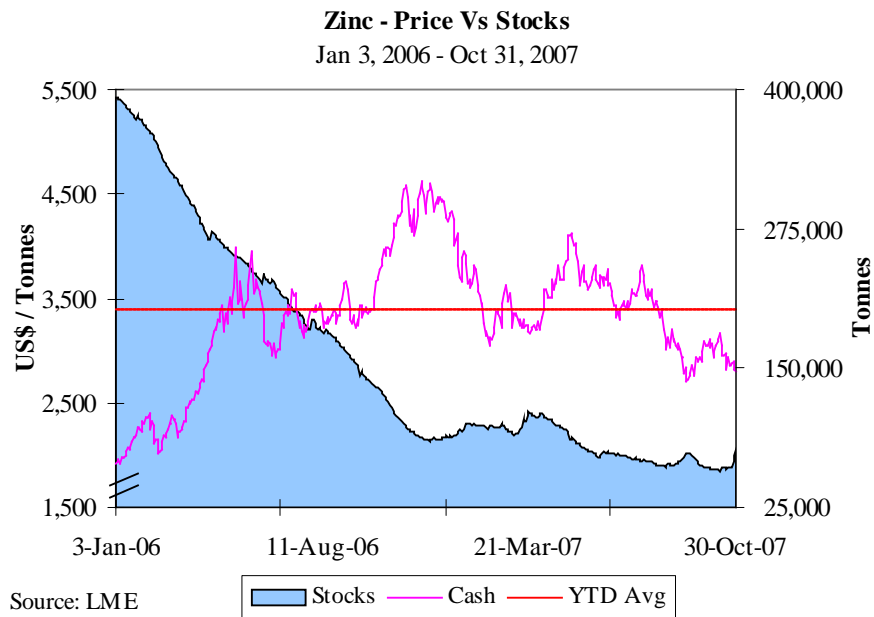
***Strength of Board***

The Toronto Stock Exchange recommends that the Board of Directors of every company include independent or unrelated directors who are free of any relationship or business that could materially interfere with the director's ability to act in the best interest of the company. An unrelated/independent director can be a shareholder. In this report, we introduce our strength of board rating for Canadian Zinc, which uses information available from the company's annual "Management Information Circular" to ensure that the company has an independent Board of Directors, Audit Committee, and Compensation Committee. This report also identifies any non-arms length transactions and management's compensation.

Canadian Zinc's Board of Directors is made up of 6 individuals: Robert Gayton, John Kearney, John MacPherson, Dave Nickerson, Alan Savage, and Alan Taylor. Mr. Kearney, Mr. Savage, and Mr. Gayton all served as directors of companies that were subject to cease trade orders or filed for bankruptcy. None of the directors have filed for personal bankruptcy. Dave Nickerson and Alan Taylor do not hold any shares in the company. The directors have received stock options under the company's stock option plan. The related/non-independent directors are John Kearney and Alan Taylor, as they are executive officers of the company and receive compensation. The Audit Committee is made up of Robert Gayton, Alan C. Savage and Dave Nickerson. The Compensation Committee is made up of Robert J. Gayton and Alan C. Savage. We have confidence in the independence of Canadian Zinc's governing boards.

***Outlook on Zinc***

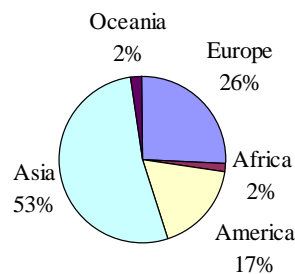
Zinc is primarily used to galvanize steel (used extensively in construction and engineering) to prevent corrosion, and in zinc die-casting. About 47% of zinc is used for galvanizing. As of December 6, 2007, zinc was trading at US\$1.06/lb, which represented a YOY decrease of 46%. However, prices are still up 22% since the beginning of 2006. Like other base metals, zinc prices were highly volatile in 2006. Prices have ranged between US\$0.87/lb and US\$2.10/lb since the beginning of 2006. The chart below shows zinc prices since January 2006.



**Low Inventory Levels:** The surge in prices since the beginning of 2006 was due to the drastic fall in LME inventory levels and a corresponding increase in global demand for zinc. LME stocks as of December 5, 2007, were 79,100 tonnes, which reflects a decline of 80% since the beginning of 2006. Current inventory levels are expected to satisfy global demand for only 2-3 days.

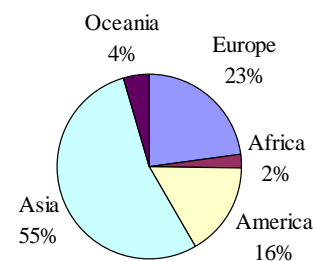
The charts below show the **distribution of global production and consumption** in the first eight months of FY2007. As shown in the charts, Asia, which accounted for 55% of global production and 53% of global consumption, was the top consumer and producer in the world.

Global Consumption (Jan - Aug 2007)



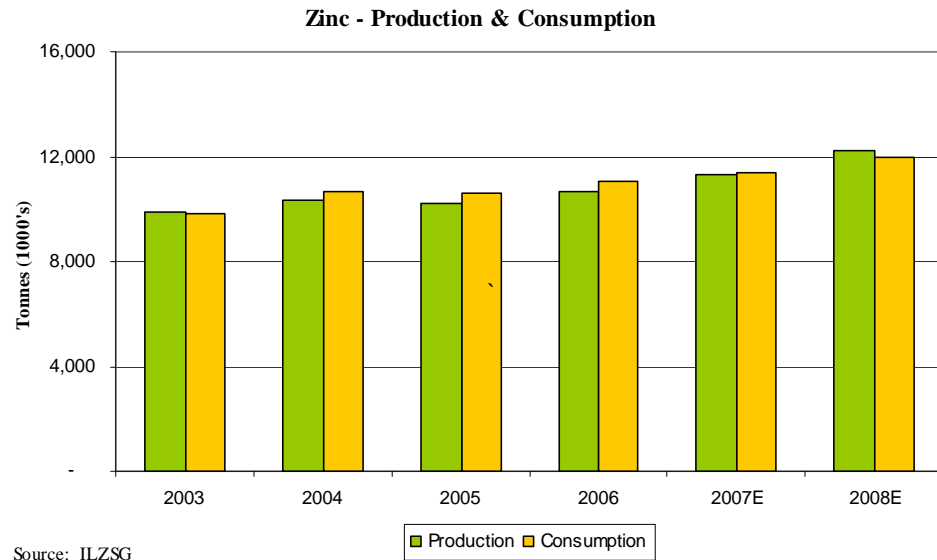
Source: ILZSG

Global Production (Jan - Aug 2007)



Source: ILZSG

**Supply and Demand:** The chart below shows global supply and demand since 2003.



According to the International Lead and Zinc study group (ILZSG), global consumption of zinc grew at a CAGR (compounded annual growth rate) of 3.9% from 2003 – 06, while production grew only 2.7%. As shown in the chart above, consumption always exceeded production during 2004 – 06. The Zinc market was in a supply deficit of 0.34 million tonnes in 2006. However, the gap between supply and demand is expected to shorten in 2007, as production growth outpaces consumption growth. In the first eight months of 2007, production grew at 7.7% YOY, while consumption grew at only 3.5%. In October 2007, ILZSG estimated that global zinc supplies will rise 7.4% in 2007, and 9.5% in 2008, to reach 12.24 million tonnes in 2008. ILZSG expects global demand to grow at only 3% in 2007, and 5.1% in 2008. Therefore, the zinc market is expected to record a supply surplus of 0.25 million tonnes in 2008.

However, we believe that there is a good chance that zinc demand growth will be higher than 3% YOY in 2007, based on rising demand in Asia, and the fact that global consumption grew by 3.5% in the first eight months of 2007. We believe rising demand in Asia could hold prices high in the short-term. Zinc stock levels have declined, primarily due to the increasing demand for the metal in galvanized steel production. Global crude steel production was 110.1 million tonnes in August 2007, which reflects an increase of 2.9% compared to production in January 2007. According to the Beijing Antaike Information Development Co., the demand for zinc in China, the world's biggest consumer of the metal, may rise 56% by 2010 (from 3.08 million tonnes in 2005 to 4.80 million tonnes in 2010). China's zinc demand is expected to increase by 6.9% in 2007 (ILZSG). We expect stronger demand for zinc in the short-term, due to increasing demand from the Chinese, Japanese and Korean steel sectors. China, Japan and Korea are expected to account for 33%, 5% and 5%, respectively, of global zinc demand in 2008 (according to the ILZSG). Although we expect a slow down in demand growth in the U.S. (due to an expected slowdown in the U.S. economy), we believe it will only slightly offset the strong growth in Asia, as the U.S. accounts for only 9% of global consumption.

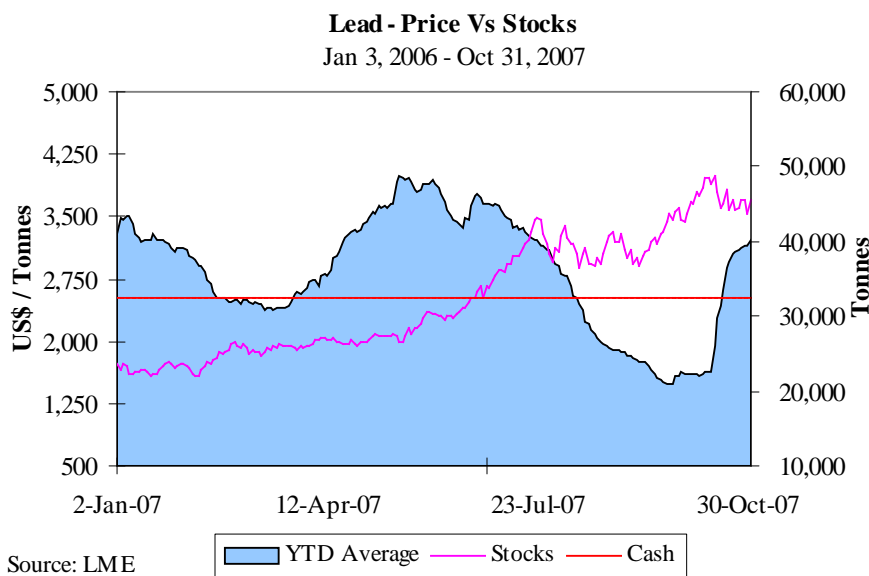
Therefore, based on the above reasons, we expect the global zinc supply surplus to be lower than 0.25 million tonnes in 2008. We expect the supply surplus to increase gradually beyond 2008, as demand growth for most of the base metals, including zinc, softens, based on slower global economic growth forecasts.

**Forecasts:** We believe strong short-term demand will keep prices high throughout 2007, and 2008, but the forecasted decrease in long-term demand could soften prices beyond 2008. Zinc prices ranged between \$0.40/lb - \$0.60/lb during 1998-2004. We believe that long-term fundamentals (supply and demand) are strong enough to support zinc prices above their historic averages. Also, there are uncertainties pertaining to zinc supply beyond 2010, as several currently producing mines shut down. The average price forecast for zinc is US\$1.54/lb in 2007, and US\$1.40/lb in 2008. Our long-term zinc price forecast is US\$0.75/lb.

### **Outlook on Lead**

Lead is primarily used for batteries (79.2% of global consumption in 2005). Some of the major applications of the remaining 20% include cable sheathing, pigments and other compounds, rolled and extruded products, and alloys.

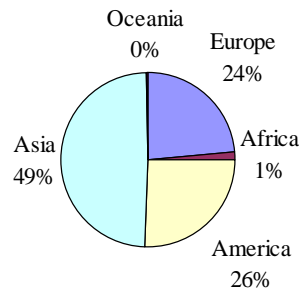
Lead has been one of the best performing commodities in 2007. As of December 6, 2007, lead was trading at US\$1.18/lb, which represented a YTD increase of 51%. Current prices are well above their YTD low of \$0.71/lb, and slightly above the YTD average price of US\$1.14/lb. The chart below shows lead prices since January 2007.



Low inventory levels were one of the main reasons for the significant rise in prices in 2007. LME inventory levels on December 5, 2007, were 44,000 tonnes, which reflects a YTD increase of 7.2%. Based on consumption in the first eight months of FY2007, we estimate that current inventory levels will suffice for only 1.75 days.

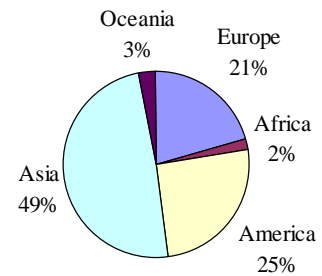
The charts below show the **distribution of global production and consumption** in the first eight months of FY2007. Like zinc, Asia, which accounted for 49% of global production and consumption, was the top consumer and producer in the world. China (32%), the U.S. (19%) and Germany (4%) were the top consumers (according to the ILZSG).

**Global Consumption (Jan - Aug 2007)**



Source: ILZSG

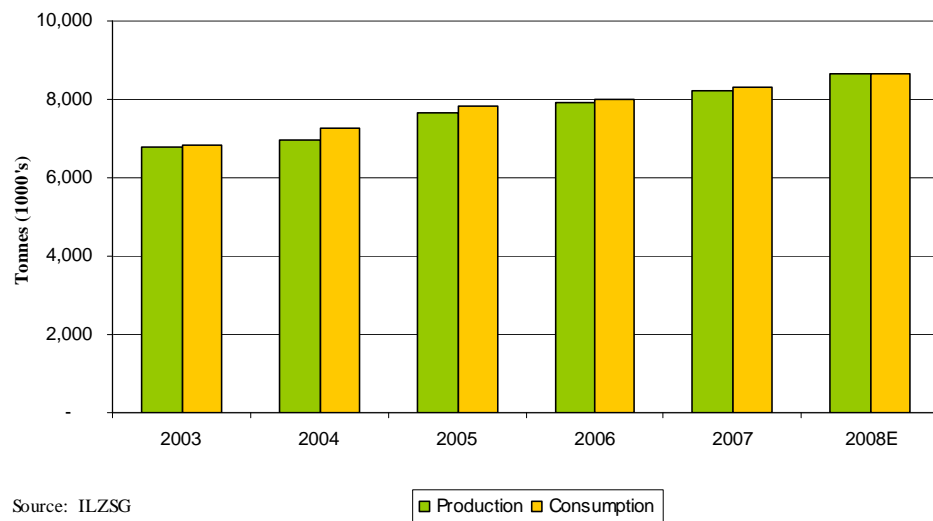
**Global Production (Jan - Aug 2007)**



Source: ILZSG

**Supply and Demand:** The chart below shows global supply and demand since 2003.

**Lead - Production & Consumption**



Source: ILZSG

According to the ILZSG, the global lead market has been in a supply deficit since 2003. As global consumption grew at a CAGR of 5.5% during 2003 – 06, production grew at a slightly slower pace of 5.4%. In 2006, the lead market was in a supply deficit of 86,000 tonnes. In the first eight months of FY2007, consumption grew by 4.41% YOY, while production grew by only 3.96%. The ILZSG predicts global consumption will grow at 4.1% in both 2007 and 2008, to reach 8.67 million tonnes by 2008. Global production is expected to grow by 3.9% and 5.4% in 2007 and 2008, respectively, to reach 8.67 million tonnes by 2008. Based on these forecasts, the lead market is expected to be in a supply deficit of 0.09

million tonnes in 2007. Supply is expected to almost meet demand in 2008.

**We believe the following factors will be the major price drivers of lead going forward.**

- Batteries are primarily categorized as primary and secondary batteries. Primary batteries are non-rechargeable batteries that include alkaline, lithium, silver oxide, zinc-air, zinc-carbon/zinc-chloride and specialty types. Secondary batteries are rechargeable batteries that include nickel-cadmium, nickel-metal hydride, lithium-ion, lead-acid and a range of other types.

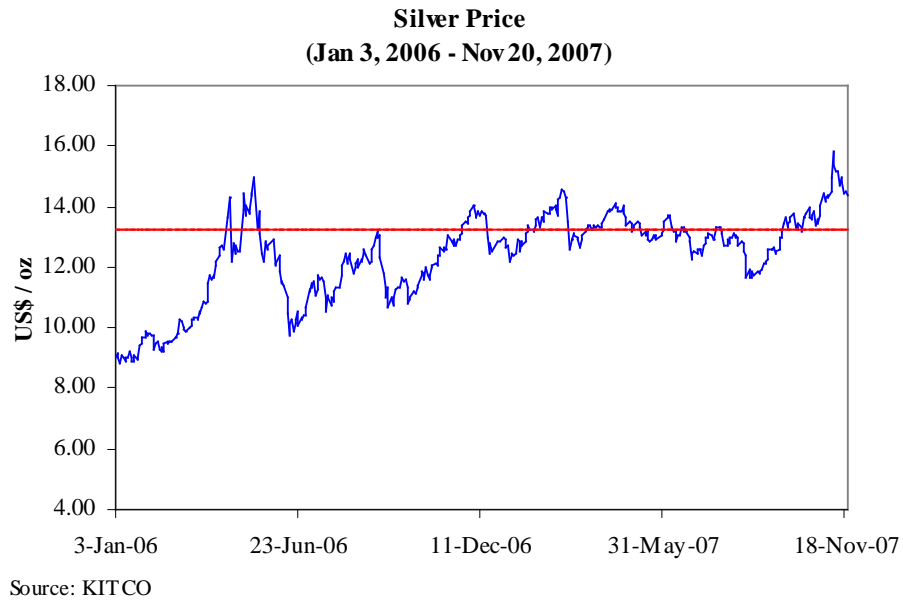
According to the Freedonia Group, sales of secondary batteries in the U.S. will increase 4% per annum through 2011 to US\$9.1 billion. Lead-acid batteries are expected to account for 70% of sales in the secondary battery market. However, due to the emergence of hybrid motor vehicles, demand for advanced rechargeable lithium and Ni-MH batteries is expected to experience stronger demand growth than lead-acid batteries.

- One of the major drivers of global demand for lead is the strong growth in demand of lead-acid batteries for automotive, electric bikes (e-bikes), the computing and telecommunication sectors. The demand for e-bikes in China is expected to increase as record high fuel prices make cars and motorcycles expensive. According to Antaika (consultants in Beijing), China produced 19 million battery driven bikes in 2006. They are estimating a 30% YOY increase in 2007.
- According to the ILZSG, demand for lead in China is expected to grow by 17% and 10.2% in 2007 and 2008, respectively.
- There are looming concerns over supply from China, as the Chinese government imposed a 10% export tax on lead to address internal shortages. According to the figures released early August 2007 from the ILZSG, Chinese net exports of refined lead metal decreased by 52%.

**Forecasts:** Our short-term outlook on lead is positive based on an expected supply deficit in 2007, and all the factors mentioned above. Like other base metals, we expect prices to soften as global economic growth slows down. We do not expect a major supply shortage in the long-term. However, we expect strong demand in the long-term to keep prices above historic lows. The average price forecast for lead is US\$1.16/lb in 2008. Our long-term lead price forecast is US\$0.60/lb.

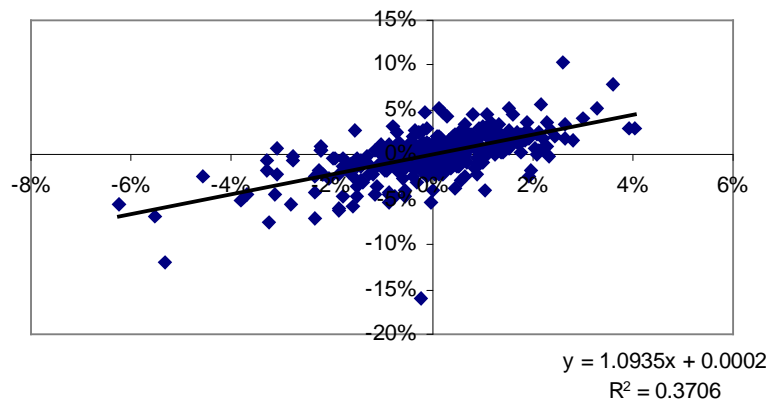
***Outlook on  
Silver***

The chart below shows silver prices since January 2006. As of December 6, 2007, silver was trading at US\$14.06/oz, which reflects a YOY increase of 3%.



Although the supply and demand fundamentals of silver play a key role in setting prices, we believe silver prices will continue to follow gold in the short-term and mid-term. Our outlook on gold is positive based on a forecasted depreciation in the U.S. dollar, higher inflationary expectation, relatively lower U.S. real interest rates, and high oil prices. The chart below shows how silver prices have moved in tandem with gold prices in the past.

**Relationship b/w daily percentage changes in Gold & Silver prices (Jan 3, 2006 - August 15, 2007)**



*Our study shows that a statistically significant coefficient of correlation (0.61) and  $R^2$  (37.1%) existed between daily log changes of gold and silver prices.*

Also, we believe that strong investment demand for silver (as of October 10, 2007, iShares Silver Trust assets were 143.48 million oz, which reflects an increase of 584% since the introduction of the ETF in April 2006), amidst decreasing physical demand, will also help prices stay high. The average forecasts for silver prices are US\$13.25/oz in 2007 and US\$14.50/oz in 2008.

**Financials**

In the first nine months of FY2007 (ended September 2007), the company posted a net loss of \$0.24 million (EPS: -\$0.00), compared to \$0.52 million (EPS: - \$0.01) in the comparable period for the previous year. The company received \$1.03 million in interest income in the first nine months of FY2007 (versus \$0.64 million in the comparable period in the previous year), which resulted in the lower net loss YOY. The company had a burn rate (cash spent on operating and investing activities) of \$1.12 million per month in the first nine months of FY2007, compared to \$0.73 million per month in FY2007 (12-months). The table below shows the company's cash and liquidity position.

	2005	2006	Q3-2007
Cash + Others	16,063,876	29,337,082	32,081,520
Working Capital	\$16,039,646	\$29,142,161	\$30,107,092
Current Ratio	332.3	63.8	14.2
LT Debts/ Assets	-	-	-
Burn Rate/Month (incl exploration costs)	(\$187,541)	(\$730,331)	(\$1,118,423)
Cash from financing activities	\$5,406,368	\$22,037,177	\$10,184,398

At the end of September 2007, the company had \$32.08 million in cash, short-term investments (Bankers Acceptance and Guaranteed Investment Certificates) and marketable securities.

**Most recent financing:** In July 2007, the company raised additional \$10 million through a private placement with Sprott Asset Management Inc. In the private placement, the company issued 11.77 million units at a unit price of \$0.85. Each unit consists of one common share and one-half of a common share purchase warrant (exercise price of \$1.20 for a period of two years). As of August 10, 2007, Sprott owned 15.6% of the outstanding shares of CZN.

**Stock Options and Warrants:** At the end of September 2007, the company had 4.17 million stock options (only 2.86 million are currently 'in-the-money' – assuming none of the outstanding options were exercised since the end of September 2007), with exercise prices ranging between \$0.60 and \$0.90, and maturity periods between January 2010 and December 2011. The company also had 17.57 million warrants outstanding (all of them are currently 'out-of-the-money'), with exercise prices ranging between \$0.72 and \$1.20, and maturity periods between January 2008 and July 2009.

**Conclusions:** We expect the company to spend around \$8 million on exploration and permitting activities in the next 12 months. We believe the company is in an excellent cash position to pursue the proposed exploration program, and do not expect the company to raise additional funds in the next 12 months.

**Valuation**

We have valued the company's Prairie Creek project based on a Discounted Cash Flow (DCF) model and a real options valuation model. For valuation purposes, we have used all the measured and indicated, but only half the inferred resource estimates, as we normally do for inferred resource estimates.

**Our base-case DCF valuation on the company (shown below) is \$156.14 million, or**

**\$1.29 per share.** All inputs and assumptions that we used in the model are presented in the table below.

<b>DCF Valuation Summary</b>				
Resource (in tonnes)	8,611,117			
	<b>Wt. Avg. Grade</b>	<b>Contained Metal</b>	<b>Recovery</b>	<b>Price Forecasts</b>
Pb	10.39%	1,972,902,760	85%	\$0.60
Zn	11.62%	2,205,475,483	85%	\$0.75
Ag	178.39	49,388,661	75%	\$11.00
Cu	0.39%	73,759,029	70%	\$1.75
Production Commencement	2011			
Avg. Operating Costs	125 (\$/tonne)			
Total Capital Costs (in \$)	60,000,000			
Mill Processing (tpd)	Years 1 - 2: 1,000 tpd; Year 3+ :1,500 tpd			
Mine Life (in years)	17			
Discount Rate	11.63%	(our estimate of the discount rate for similar projects in a relatively risk-free country)		
<b>Net Present Value</b>	<b>\$127,413,136</b>			
Working Capital	28,726,251			
LT Debt				
Fair Value	\$156,139,387			
No. of Shares (diluted)	120,657,061			
<b>Fair value per share</b>	<b>\$1.29</b>			

*Note: The number of diluted shares were calculated based on the treasury stock method.*

The table below shows a sensitivity analysis of our DCF valuation with respect to changes in the inputs.

<b>Sensitivity</b>	<b>Value</b>	<b>VPS</b>
Base-case	\$156,139,387	\$1.29
1 yr delay in commencement of production	\$142,865,045	\$1.18
2 yr delay in commencement of production	\$130,973,670	\$1.09
NPV @ 10%	\$181,683,463	\$1.51
NPV @ 15%	\$116,891,596	\$0.97
Capital costs increase by 10%	\$151,759,072	\$1.26
Capital costs decrease by 10%	\$160,519,702	\$1.33
Operating costs increase by 10%	\$134,511,771	\$1.11
Operating costs decrease by 10%	\$177,767,003	\$1.47

**Our real options valuation on the company (shown on the next page) is \$185.70 million, or \$1.54 per share.**

Real Options Valuation - Prairie Creek Project						
	Resources	Category	Grade	Contained Metal	Price	Value (C\$)
	(in tonnes)		(% & g/t)	(lbs & troy oz.)	(US\$/lb & US\$/oz)	
Lead	8,611,117	43-101	10.4%	1,972,902,760	\$0.60	740,548,780
Zinc	8,611,117	43-101	11.6%	2,205,475,483	\$0.75	921,626,852
Silver	8,611,117	43-101	178.39	49,388,661	\$11.00	281,144,953
Copper	8,611,117	43-101	0.4%	73,759,029	\$1.75	62,344,819
<b>Recovery</b>						
Lead	85%					
Zinc	85%					
Silver	75%					
Copper	70%					
Total Value (C\$)						\$2,005,665,404
Operating Costs (C\$)						\$1,424,086,605
Net Value (C\$)						\$581,578,799
C\$/US\$ (long-term)	1.15					
Inputs relating to the underlying asset						
Estd. Mineral Resources (in tonnes)						8,611,117
Estd. Value of Minerals if extracted today						\$489,954,407
Annualized Standard Deviation of Mineral prices						38.9%
Capital Investment						\$60,000,000
Estd. Mine Life (years)						17.0
Riskfree Rate						4.20%
Output						
Stock Price	\$489,954,407			T. Bond rate		4.20%
Strike Price	\$60,000,000			Variance		0.15
Expiration (in years)	17.0			Annualized div yield		5.9%
Value of Option						\$156,972,326
Working Capital						\$28,726,251
Debt						-
No of outstanding shares (diluted)						120,657,061
<b>Value per share</b>						<b>\$1.54</b>
d1 =	1.933					
N(d1) =	0.973					
d2 =	0.329					
N(d2) =	0.629					

## Conclusions & Rating

The value of the Prairie Creek Mine is significant, due to its large resource, high grades, extensive infrastructure in place, and development stage. We believe the stock trades at a discount due to the long permitting process and controversy surrounding the mine, due to environmental, social, and political issues. Although we expect the project to be put into production in Q2-2010 (we expect the permitting process to take two years), for conservatism, our valuation models assume that production will commence only in early 2011. We believe the company has established good environmental safeguards to protect Prairie Creek and the Nahanni Butte Watershed. The project already has an established footprint, and we do not believe that it makes sense to shut down the project at this time.

**Therefore, based on our valuation models and review of the Prairie Creek Mine, we initiate coverage on CZN with a BUY rating (Risk 5: Highly Speculative), and a fair value estimate of \$1.00 per share. Our fair value has been adjusted downwards to account for third party risk related to the various groups involved in this project.**

## Risks

The following risks, though not exhaustive, may cause our estimates to differ from actual results:

- The success of development, permitting, and procurement are important long-term success factors for the company.
- The value of the company depends on commodity prices.
- The company is subject to delays that are affecting the entire mining industry.
- Permitting may be delayed further due to factors beyond the company's control.

## Appendix



**Top Left:** Wildlife in Prairie Creek  
**Top Right:** Visiting the helicopter assisted drilling program on the Gate Claims.  
**Left:** Martha Buckwalter-Davis, Research Associate, examining drill core.

**Fundamental Research Corp. Equity Rating Scale:**

**Buy** – Annual expected rate of return exceeds 12% or the expected return is commensurate with risk

**Hold** – Annual expected rate of return is between 5% and 12%

**Sell** – Annual expected rate of return is below 5% or the expected return is not commensurate with risk

**Suspended or Rating N/A**— Coverage and ratings suspended until more information can be obtained from the company regarding recent events.

**Fundamental Research Corp. Risk Rating Scale:**

**1 (Low Risk)** - The company operates in an industry where it has a strong position (for example a monopoly, high market share etc.) or operates in a regulated industry. The future outlook is stable or positive for the industry. The company generates positive free cash flow and has a history of profitability. The capital structure is conservative with little or no debt.

**2 (Below Average Risk)** - The company operates in an industry where the fundamentals and outlook are positive. The industry and company are relatively less sensitive to systematic risk than companies with a Risk Rating of 3. The company has a history of profitability and has demonstrated its ability to generate positive free cash flows (though current free cash flow may be negative due to capital investment). The company's capital structure is conservative with little to modest use of debt.

**3 (Average Risk)** - The company operates in an industry that has average sensitivity to systematic risk. The industry may be cyclical. Profits and cash flow are sensitive to economic factors although the company has demonstrated its ability to generate positive earnings and cash flow. Debt use is in line with industry averages, and coverage ratios are sufficient.

**4 (Speculative)** - The company has little or no history of generating earnings or cash flow. Debt use is higher. These companies may be in start-up mode or in a turnaround situation. These companies should be considered speculative.

**5 (Highly Speculative)** - The company has no history of generating earnings or cash flow. They may operate in a new industry with new, and unproven products. Products may be at the development stage, testing, or seeking regulatory approval. These companies may run into liquidity issues, and may rely on external funding. These stocks are considered highly speculative.

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