MUNICIPAL PROPERTY ASSESSMENT CORPORATION

# ANALYSIS OF EXTERNAL OBSOLESCENCE

## FOR THE

## SALT INDUSTRY IN ONTARIO

2016 BASE YEAR

October 13, 2016

## Table of Contents

## Purpose of the Report

The purpose of the report is to demonstrate how MPAC accounted for any loss in value resulting from external obsolescence to the special purpose industrial properties associated with mining and/or processing salt ("the industry").

## Subject Properties

The subject properties associated with mining and/or processing of salt are:

- mining operations
- processing plants

Each of the property types listed is highly specialized and has been designed to perform a sole use. They are useful, and as a result have value, for as long as the intended use is profitable.

The subject properties are only profitable if the associated revenue exceeds the cost of goods sold over the investment horizon linked to the property.

## The Market for Industrial Properties

There are two markets to be analyzed when studying industrial real property:

- "the real estate market, in which industrial properties trade and space in those properties is leased and occupied;"[1] and
- "the market for the goods produced in industrial facilities."[2]

There is not an active real estate market for the subject properties, as when they trade it is part of a vast transaction that includes the entire business enterprise (i.e., inclusive of intangible property, personal property and real property).

In the absence of real estate market data, the markets for the goods produced at the subject properties were analyzed when estimating their current values.

The analysis of these markets is the primary subject of this report.

[1] Appraisal Institute, *Appraising Industrial Properties* (2005): p. 51.
[2] *Appraising Industrial Properties*: p. 52.

## External Obsolescence

External Obsolescence (EO) is most often present when external influences prompt a change in the supply and/or demand of an industry's products and/or cause a change in competition, leading to a decline in operating profits. As a result, a decline in overall business value leads to a decline in property value. Some examples of external influences that adversely impact operating profits, giving rise to EO, include (but are not limited to):

- changes in industry economics, such as reduced demand or excess supply, which can put downward pressure on prices, thereby negatively impacting sales revenue and weakening profitably;
- an increase in direct costs such as raw materials and labour without a corresponding increase in sales price due to adverse market conditions, thereby wakening profitability. Such a scenario results from declining demand for an industry's products and/or increased competition leading to excess supply and price pressure;
- increased domestic and/or foreign competition, which puts downward pressure on prices and negatively impacts sales revenue and profits;
- government legislation and/or changes in regulations;
- economic factors over which an industry has no control, including changes in inflation, interest rates, foreign currency rates, all of which can negatively impact sales revenue and profitability;
- adverse global economic conditions; and
- technological advances.

## Commodity

A commodity is "a basic good used in commerce that is interchangeable with other commodities of the same type. Commodities are most often used as inputs in the production of other goods or services. The quality of a given commodity may differ slightly, but it is essentially uniform across producers. When they are traded on an exchange, commodities must also meet specified minimum standards, also known as a basis grade".[3]

[3] http://www.investopedia.com/terms/c/commodity.asp

 

## Ontario Mining

According to data provided by the Ontario Mining Association, Ontario was the leading province in mineral production in 2015 with $10.8 billion of mineral production, accounting for 25.2% of all Canadian production. This value represents a 5.8% growth from 10.2 billion in 2013 and an 18.3% increase from the 10-year average.[4]

Ontario's top 10 minerals by value in 2015 are as follows:[5]

| | Mineral | CAD (millions) | % of Ontario Mining Value |
|---|---|---|---|
| **1** | Gold | 3361 | 31.1 |
| **2** | Nickel | 1538 | 14.2 |
| **3** | Copper | 1279 | 11.8 |
| **4** | PGM | 916 | 8.5 |
| **5** | Stone | 733 | 6.8 |
| **6** | Cement | 632 | 5.8 |
| **7** | Sand and Gravel | 591 | 5.5 |
| **8** | Diamonds | 535 | 4.9 |
| **9** | Salt | 407 | 3.8 |
| **10** | Zinc | 140 | 1.3 |

## Scope of Review

In preparing our comments and calculations, we have reviewed, considered and relied upon, inter alia, the following:

- various financial and statistical data published by Statistics Canada;
- http://www.mndm.gov.on.ca/en; and,
- Thomson Reuters Research Platform.

[4] http://www.oma.on.ca/en/ontariomining/resources/Ontario-Production-Factsheet-2016.pdf
[5] ibid.

## Approach to Analyzing Economic Obsolescence

1. Two guideline companies have been selected for the analysis: Compass Minerals International Inc. and K&S AG. Both companies mine and process salt with locations in Canada.

2. A qualitative analysis was performed, which reviewed and summarized the guideline company's annual reports.

3. The quantitative analysis entails a profitability trend analysis of the following ratios: return on invested capital, gross profit margin and EV/EBITDA multiples.

4. If the current performance data is trending below historical benchmarks by a material amount, on a collective basis, this can signal that EO is present in the industry.

5. The percentage decline in the current data as measured against the historical benchmarks, on a collective basis, serves as the basis for an overall benchmark of the rate of EO present in the industry, on a broad level.

## Qualitative – Management Discussion Analysis

**Compass Minerals – 2015 Annual Report – (Parent Company of Sifto Canada)**

1. "Salt is indispensable and enormously versatile with thousands of reported uses. In addition, there are no known cost-effective alternatives for most high-volume uses. As a result, our cash flows from salt have not been materially impacted through a variety of economic cycles."

2. "We are amongst the lowest-cost sale producers in our markets due to our high-grade quality salt deposits, which are among the most extensive in the world, and through the use of effective mining techniques and efficient production processes."

3. "The demand for salt has historically remained relatively stable during periods of rising prices and through a variety of economic cycles due to its relatively low cost and a diverse number of end uses."

 

## Quantifying Economic Obsolescence – Financial Ratios

### Return on Invested Capital Analysis

1. Return on invested capital (ROIC) is a profitability ratio that measures how efficiently a company generates income from capital invested by comparing net operating profit to capital invested. The ROIC is a better measurement than return on equity as it measures how well a company is using both its equity and debt to generate profits. A low ROIC indicates that a company is making poor use of its capital resources.

2. ROIC is calculated as follows:

$$\frac{\textit{Return (i.e., Net Operating Profit after Taxes)}}{\textit{Invested Capital (i.e., Interest-bearing Debt + Equity)}}$$

3. The ROIC is informative when tracked on a trend line annually, as it will indicate long-term changes in the operating performance of a company. A decline in operating profits while invested capital remains constant or increases will cause the ROIC to decline.

4. A decline in the ROIC can signal that external influences occurring in the marketplace are negatively impacting profitability, giving rise to EO.

5. Any or all of the following external influences can negatively impact operating profits and the ROIC, giving rise to EO, and can impede the ability of an industry to earn an economic rate of return on its assets:

    - a declining demand for an industry's products;
    - increased competition creating excess supply and price pressure; and,
    - government regulations requiring increased investment and/or price caps.

### Gross Profit Margin (%) Analysis

1. Gross profit margin percentage is a profitability ratio that measures the percentage by which sales revenue exceeds the expenses required to manufacture a product, known as the cost of goods sold (COGS).

2. The COGS includes the cost of the raw materials, direct labour and production overheads that go into producing the goods sold and is included on a company's income statement where is it is deducted from revenue in order to calculate the company's gross margin dollars. The gross margin dollars reflect the amount of dollars earned from the sale of products and services before consideration of non-production costs, such as selling and administrative costs.

 

3. Gross profit margin percentage is calculated as follows:

*Gross Profit Margin (%) = (Sales Revenue – COGS / Sales Revenue) x 100*

4. The gross profit margin percentage when tracked on a trend line indicates if any significant changes in sales and/or the COGS have occurred over a period of time. The gross profit margin percentage declines when sales revenue decreases and the COGS remains constant or increases, as less gross margin dollars are being generated per unit sold.

5. A decline in the gross profit margin percentage can be an indication that external influences occurring in the marketplace are negatively impacting sales and/or the COGS, thereby giving rise to EO.

6. Similar to the ROIC, external influences that cause declining demand for an industry's products and/or increased competition leading to excess supply put downward pressure on prices and can negatively impact an industry's gross profit, thereby impeding an industry's ability to earn an economic return on its assets.

7. In addition, when the COGS increases and the increase cannot be passed on to the consumer through a price increase due to adverse market conditions, such as government price caps and/or price pressure due to increased competition, the additional costs must be absorbed by the manufacturer and gross profits therefore decline, negatively impacting industry returns.

**EV/EBITDA Multiples Analysis**

1. The EV/EBITDA ratio, also referred to as the EBITDA multiple, compares the enterprise value of a company to its earnings before interest, taxes, depreciation and amortization (EBITDA).

2. The enterprise value (EV) of a company is determined by the sum of its market value (i.e., current share price multiplied by total number of outstanding shares, also known as market capitalization) and the net value of its interest-bearing debt (i.e., debt less non-operational cash/cash equivalents). This measurement is used to estimate what it would cost for an investor to buy a company outright given it incorporates both the market value of the shares and the debt that the investor assumes on takeover.

3. As a company's shares are bought and sold in the public market, the EV reflects investor perception of a company's value. More specifically, the EBITDA multiple is an indicator of how many times of EBITDA an investor is willing to pay for a company's assets.

 

## Summary of Findings

Based on the scope of review, research and analysis carried out, and subject to the restrictions as set out herein, the rate of EO present in the industry as at January 1, 2016, is estimated to be as follows:

**Ontario - Salt Industry**

| Summary of EO Indicators by Index | Indicated EO | Assigned Weight | Weighted Average |
|---|---|---|---|
| Gross Profit Margin % | 0.0% | 1 | 0.0% |
| EV/EBITDA Multiples | 7.1% | 1 | 7.1% |
| Return on Invested Capital | 22.8% | 1 | 22.8% |
| | | 3 | 29.85% |
| Range of EO Indicators: 0% to 22.8% | divide by total assigned weight | | 3 |
| **Estimated Rate of EO as of January 1 2016** | | | **9.9%** |

## Schedule 1 – Gross Profit Margin

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compass Minerals International | 19.1% | 23.5% | 25.0% | 25.2% | 28.1% | 26.8% | 26.2% | 24.7% | 30.5% | 36.8% | 29.5% | 28.0% | 24.1% | 25.3% | 32.9% | 30.0% |
| K&S AG | 32.1% | 32.3% | 33.0% | 32.7% | 34.0% | 35.7% | 35.3% | 33.9% | 46.8% | 34.4% | 38.1% | 45.4% | 45.1% | 43.2% | 42.1% | 45.9% |

| | 2004 to 2014 | | | | | |
|---|---|---|---|---|---|---|
| | Max | Min | Mean | Median | 2015 | Indicated EO |
| | | | | (A) | (B) | (A-B)/A) |
| Compass Minerals International | 36.8% | 24.1% | 28.4% | 28.0% | 30.0% | 0.0% |
| K&S AG | 46.8% | 33.9% | 39.5% | 38.1% | 45.9% | 0.0% |
| Mean | 41.8% | 29.0% | 34.0% | 33.1% | 38.0% | 0.0% |
| Median | 41.8% | 29.0% | 34.0% | 33.1% | 38.0% | **0.0%** |

Notes:

1. Source: Thomson Reuters research platform.

2. The max, min, mean and median values are based on the historical rates from 2004 to 2014 and are assumed to represent an optimal sales period.

3. Indicated EO was measured by calculating the differential in the historical gross margin (%) benchmark (based on the median rate from 2004 to 2014 when earnings were considered optimal) and the current gross margin (%) based on 2015 as follows: [(Median GM% – Current GM%) / Median GM%]. If the current GM (%) was higher than the benchmark, a differential of 0.0% was calculated as the indicated EO.

## Schedule 2 – EV/EBITDA

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compass Minerals International | – | – | – | 7.6 | 8.3 | 7.2 | 10.0 | 10.4 | 7.5 | 8.5 | 11.9 | 9.4 | 14.5 | 11.3 | 10.7 | 10.7 |
| K&S AG | 2.2 | 3.2 | 2.5 | 3.2 | 5.3 | 5.3 | 8.6 | 17.4 | 4.5 | 18.7 | 11.0 | 6.0 | 6.7 | 5.3 | 5.5 | 5.1 |

| | 2004 to 2014 | | | | | |
|---|---|---|---|---|---|---|
| | Max | Min | Mean | Median | 2015 | Indicated EO |
| | | | | (A) | (B) | (A-B)/A) |
| Compass Minerals International | 14.5 | 7.2 | 10.0 | 10.0 | 10.7 | 0.0% |
| K&S AG | 18.7 | 4.5 | 8.6 | 6.0 | 5.1 | 14.2% |
| Mean | 16.6 | 5.9 | 9.3 | 8.0 | 7.9 | 7.1% |
| Median | 16.6 | 5.9 | 9.3 | 8.0 | 7.9 | **7.1%** |

Notes:

1. Source: Thomson Reuters research platform.

2. The max, min, mean and median values are based on the historical rates from 2004 to 2014 and are assumed to represent an optimal sales period.

3. Indicated EO was measured by calculating the differential in the historical EV/EBITDA benchmark (based on the median rate from 2004 to 2014 when earnings were considered optimal) and the current EV/EBITDA based on 2015 as follows: [(Median EV/EBITDA – Current EV/EBITDA) / Median EV/EBITDA]. If the current EV/EBITDA was higher than the benchmark, a differential of 0.0% was calculated as the indicated EO.

 

## Schedule 3 – ROIC

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compass Minerals International | – | – | 3.1% | 5.5% | 8.2% | 4.5% | 9.1% | 12.8% | 25.3% | 23.0% | 17.2% | 16.5% | 9.0% | 11.6% | 17.1% | 11.2% |
| K&S AG | 9.8% | 9.5% | 8.3% | 7.8% | 6.0% | 11.0% | 15.3% | –4.8% | 39.5% | 2.8% | 10.3% | 12.7% | 10.3% | 6.9% | 5.8% | 6.9% |

| | 2004 to 2014 | | | | | |
|---|---|---|---|---|---|---|
| | **Max** | **Min** | **Mean** | **Median** | **2015** | **Indicated EO** |
| | | | | (A) | (B) | (A-B)/A) |
| Compass Minerals International | 25.3% | 4.5% | 14.0% | 12.8% | 11.2% | 12.5% |
| K&S AG | 46.8% | 33.9% | 39.5% | 38.1% | 45.9% | 33.0% |
| Mean | 32.4% | –0.2% | 12.3% | 11.6% | 9.1% | 22.8% |
| Median | 32.4% | –0.2% | 12.3% | 11.6% | 9.1% | **22.8%** |

Notes:

1. Source: Thomson Reuters research platform.

2. The max, min, mean and median values are based on the historical rates from 2004 to 2014 and are assumed to represent an optimal sales period.

3. Indicated EO was measured by calculating the differential in the historical ROIC (%) benchmark (based on the median rate from 2004 to 2014 when earnings were considered optimal) and the current ROIC (%) based on 2015 as follows: [(Median ROIC% – Current ROIC%) / Median ROIC%]. If the current ROIC (%) was higher than the benchmark, a differential of 0.0% was calculated as the indicated EO.

 