

# Tertiary Minerals building a strategic position in fluorspar

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**Tertiary Minerals (TYM:AIM)** is a mineral exploration and development company building a strategic position in the fluorspar sector.

## COMPANY AIMS

- Become a reliable long-term and competitive supplier of fluorspar to world markets
- Revenue generating in the near term
- Add value to the Groups' mineral projects
- Discovery, acquisition and development of mineral resources

## WHAT IS FLUORSPAR AND ITS PRINCIPAL APPLICATIONS?

Fluorspar is the commercial name for the mineral fluorite, composed of calcium and fluorine (CaF<sub>2</sub>) and is the predominant commercial source of fluorine. Fluorine is the lightest of all the halogens and therefore largely irreplaceable. There are two principal commercial grades of fluorspar produced:

- Metallurgical-spar (60-96% CaF<sub>2</sub>)
- Acid-spar (+97% CaF<sub>2</sub>)

Metallurgical-spar - approximately 40% of the total fluorspar production with the

principal applications being:

- Steel production – used as a flux to lower the melting temperature and increase the chemical reactivity to help the absorption and removal impurities in the slag
- Cement – used as a flux and enables the kiln to operate at lower temperatures

Acid-spar - accounts for approximately 60% of total fluorspar production, principal applications being:

- Aluminium production – produce aluminium fluoride (AlF<sub>3</sub>), acts as a flux lowering the bath temperature in the manufacture of aluminium
- Manufacture of hydrofluoric acid (HF) – primary source of all fluorochemicals (largest consumer), with a wide range of applications including:
  - Fluorocarbons, e.g. new generation environmentally friendly refrigerant gases
  - Electrical/electronic appliances
  - Metallurgical industry
  - Lithium batteries
  - Pharmaceuticals, polymers and agrochemicals
  - Petrochemical catalysts

## FLUORSPAR PROJECTS

The company's projects are located in key markets, close to established infrastructure

and in stable, democratic and mining friendly jurisdictions.

## Storuman Fluorspar Project, Sweden

The company's 100% owned Storuman project is located in north central Sweden and strategically linked to key infrastructure, enabling the cost-effective delivery of fluorspar to the key European market.

JORC Compliant Mineral Resource		
Classification	Million Tonnes (Mt)	Fluorspar (CaF <sub>2</sub> %)
Indicated	25.0	10.28
Inferred	2.7	9.57
Total	27.7	10.21

Source: Tertiary Minerals

The company was awarded a 25-year Exploitation (Mine) Permit in February 2016. Since the award the Permit has been appealed and following a recent change in case law with respect to Exploitation Permits, the case has been referred back to the Swedish Mining Inspectorate for re-assessment. The company remains confident of a positive outcome in this process.

## MB Fluorspar Project, Nevada, USA

The MB Property comprises 146 contiguous mining claims (>2,800 acres) and is located 19km south-west of Eureka in central Nevada, USA,

one of the most attractive mining jurisdictions in the World. The USA, like Europe, is a key market currently importing 100% its fluorspar requirements.

#### JORC Compliant Mineral Resource

Classification	Million Tonnes (Mt)	Fluorspar (CaF <sub>2</sub> %)
Indicated	6.1	10.8
Inferred	80.3	10.7
Total	86.4	10.7

Source: Tertiary Minerals

Following the successful completion of drilling (4 Phases) and large JORC Mineral Resource Estimate, the Company is in the process of modelling, optimisation, economic evaluation and early stage bench scale metallurgical testwork to provide focus for a technical and economic Scoping Study.

#### Lassedalen Fluorspar Project, Norway

The Lassedalen Fluorspar Project is favourably located

#### JORC Compliant Mineral Resource

Classification	Million Tonnes (Mt)	Fluorspar (CaF <sub>2</sub> %)
Inferred	4.0	24.60

Source: Tertiary Minerals

near Kongsberg, 80km south-west of Oslo in Norway, close to key infrastructure. Due to financial market conditions in 2015/2016 and the commitments on its other fluorspar projects, further exploration at the Lassedalen project has been deferred for the time being.

#### FLUORSPAR – TERTIARY MINERALS STRATEGIC OPPORTUNITY

- Industry view - demand and price will increase in the medium to long-term, key drivers being:
  - No large scale commercial alternative or recycling
  - Refrigeration – new generation environmentally friendly refrigerants, hydrofluoroolefins (HFO's) - driven by environmental legislation
  - Energy reduction - steel and aluminium manufacture
  - Emerging uses – fluoropolymers in lithium batteries
  - China produces >50% world's fluorspar, exports declined since 2000 – potentially a future net importer
  - W.Europe and N.America - largest acid-spar consumers outside of China, importing >900,000t per year
  - USA imports 100% of its fluorspar
  - N.America and Europe face the potential risk of security of supply
  - Fluorspar is classified as a critical raw material by the European Commission
  - USA considers fluorspar as a strategic mineral

The company continues to be strategically placed to capitalise on this position in the future by developing its 100% owned large fluorspar assets, containing fluorspar resources of 13.1m tonnes, located in the USA and Europe.

## SHARES SPOTLIGHT



Tertiary Minerals plc

#### WEBSITE:

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

#### SECTOR:

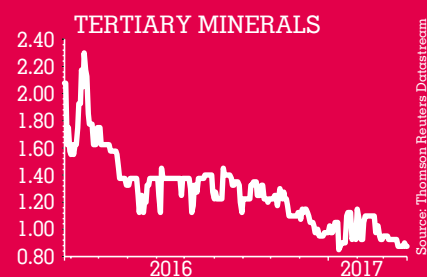
MINING

#### SHARE PRICE:

0.92P

#### MARKET CAP:

£2.47M



#### POTENTIAL NEAR-TERM REVENUE GENERATING OPPORTUNITIES

##### Sale of non-core gold assets

The company recently announced the sale of its two non-core gold assets in Finland to Aurion Resources. Further to the initial consideration for the sale of the two projects, Tertiary have retained a pre-production royalty and Net Smelter Returns Royalty (NSR) of 2% on all future gold production from either property.

Potential near-term news flow and milestones

- Resolution of 25-year Exploitation (Mine) Permit in Sweden
- Scoping Study completion for the MB Fluorspar Project in Nevada, USA
- Acquisition opportunities