

Definitions/Glossary/Functionality

Not all data and functionality is available for all subscriptions.

For more detailed explanation or training on functionality, contact your account manager

Searching Methodology

There are two methods of searching the menu on the left hand side of the screen

1. Check off one or multiple boxes and those choices will be added to the overall search.

▼ Development Status

- Prospect
- Exploration
- Advanced Exploration
- Preliminary Economic Assessment
- Prefeasibility
- Feasibility

2. Type in a value in one of the text boxes such as Property Name. As you type, choices with similar spelling will begin to appear. Click on the choice that fits. Once it appears in the box, click the Add button to add it to the Search. It will appear below with an x beside the name. Single or multiple choices can be added.



Property Name

- Antamina
- Escondida Complex

To remove a selection, click on the X beside the name.

Searches can contain one or both types of methodology.

When all of the desired search criteria has been entered, click on Update Results button



Companies Search

Company Name:



Company Name

Used to search for a single or multiple companies by name. As a name is typed in, a drop box appears with suggested matching names. If the company is listed on an exchange, the exchange symbol appears in green after the name. Once a name is picked, the add button must be clicked to add the name to the search. It will appear below with an X beside it.




Company Name Add

- x Barrick Gold
- x Newmont
- x Teck

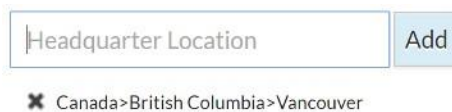
The process is repeated if multiple names are required.

Headquarter Location:



Headquarter Location Add

Used to search for the head office location of companies. The search can be defined by a city, province/state, country, region or continent. As text is entered a drop down box will display possible choices. If a city is being searched for, it will be prefaced by the province/state and country. Once the correct location is chosen, the add button must be clicked to add the location to the search. It will appear below with an X beside it



Headquarter Location Add

- x Canada>British Columbia>Vancouver

The process is repeated if multiple locations are required. This search is very useful when planning a sales and marketing trip by identifying companies in a particular location.

Status: Distinguishes between active and archived companies



▼ Company Status

Active

Archived

Active: Companies that are continually updated. The amount of information available depends on their type and activity.

Archived: Companies that are no longer updated and are kept in the database for historic research purposes.

Type:

▼ Company Type

- Public
- Reporting
- Individual
- Delisted
- Other
- Private

PUBLIC: Companies that trade on major stock exchanges and must regularly submit documentation to the required securities commission.

REPORTING: Companies that report to and file documents with a securities commission, but do not trade on a stock exchange.

DELISTED: Companies that once traded on a major stock exchange and were delisted.

PRIVATE: Private companies are not required to file documents with securities commission. Amount of information publicly available is restricted.

OTHER: Limited partnerships, governments, etc. that do not file documents to a major stock exchange.

INDIVIDUAL: An individual person.

Development Status:

▼ Development Status

- Explorer
- Developer
- Producer

EXPLORER: Companies with properties where development status is exploration, advanced exploration, prefeasibility or feasibility.

DEVELOPER: Companies with properties where development status is permitting, construction or commissioning.

PRODUCER: Companies with properties where development status is production or decommissioning.

Stock Market: Allows the search to be narrowed for companies that are listed on a stock exchange. The initial drop down box displays the seven most active stock exchanges.

▼ Stock Market

- ASX
- JSE
- LSE
- LSE-AIM
- NYSE
- TSX
- TSX-V

Clicking on **Show More** will display a list of another 48 global exchanges

▼ Stock Market

- | | | |
|---|-----------------------------------|----------------------------------|
| <input type="checkbox"/> ASX | <input type="checkbox"/> BUE | |
| <input type="checkbox"/> JSE | <input type="checkbox"/> BVL | <input type="checkbox"/> OTCPK |
| <input type="checkbox"/> LSE | <input type="checkbox"/> CNSX | <input type="checkbox"/> OTCQB |
| <input type="checkbox"/> LSE-AIM | <input type="checkbox"/> DUS | <input type="checkbox"/> OTCQX |
| <input type="checkbox"/> NYSE | <input type="checkbox"/> ETR | <input type="checkbox"/> PAR |
| <input type="checkbox"/> TSX | <input type="checkbox"/> FWB | <input type="checkbox"/> PSE |
| <input type="checkbox"/> TSX-V | <input type="checkbox"/> HEX | <input type="checkbox"/> RTC |
| <input type="checkbox"/> AMS | <input type="checkbox"/> HKEX | <input type="checkbox"/> SAT |
| <input type="checkbox"/> ASE | <input type="checkbox"/> IDX | <input type="checkbox"/> SET |
| <input type="checkbox"/> ATH | <input type="checkbox"/> ISDX | <input type="checkbox"/> SGX |
| <input type="checkbox"/> BAH | <input type="checkbox"/> KLS | <input type="checkbox"/> SHSE |
| <input type="checkbox"/> BCS | <input type="checkbox"/> KRX | <input type="checkbox"/> SZSE |
| <input type="checkbox"/> BER | <input type="checkbox"/> MAD | <input type="checkbox"/> Tadawul |
| <input type="checkbox"/> BIST | <input type="checkbox"/> MUN | <input type="checkbox"/> TASE |
| <input type="checkbox"/> BMV | <input type="checkbox"/> NASDAQ | <input type="checkbox"/> TSE |
| <input type="checkbox"/> BOM | <input type="checkbox"/> NSE | <input type="checkbox"/> TWSE |
| <input type="checkbox"/> BOVESPA | <input type="checkbox"/> NYSE-MKT | <input type="checkbox"/> WB |
| <input type="checkbox"/> BRU | <input type="checkbox"/> OBX | <input type="checkbox"/> WSE |
| <input checked="" type="checkbox"/> BUE | <input type="checkbox"/> OMX | <input type="checkbox"/> ZSE |

Exchanges Names

ExchangeCode	ExchangeName
AMS	EURONEXT Amsterdam
ASE	Amman Stock Exchange
ASX	Australian Stock Exchange
ATH	Athens Exchange
BAH	Bahrain Bourse
BCS	Chilean Stock Exchange
BER	Boerse Berlin

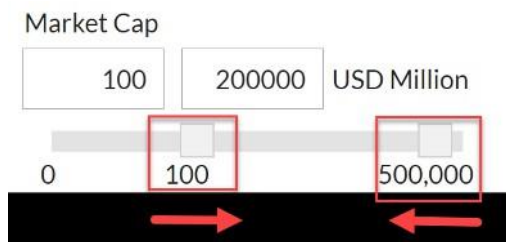
BIST	Borsa Istanbul
BMV	Mexican Stock Exchange
BOM	Mumbai Stock Exchange
BOVESPA	Sao Paulo Stock Exchange
BRU	EURONEXT Brussels
BUE	Buenos Aires Stock Exchange
BVL	Lima Stock Exchange
CNSX	Canadian National Stock Exchange
DUS	Boerse Duesseldorf
ETR	XETRA
FWB	Frankfurt Stock Exchange
HEX	Helsinki Stock Exchange
HKEX	Hong Kong Stock Exchange
IDX	Indonesia Stock Exchange
ISDX	ICAP Securities & Derivatives Exchange
JSE	Johannesburg Stock Exchange
KLS	Bursa Malaysia
KRX	Korean Stock Exchange
LIS	EURONEXT Lisbon
LSE	London Stock Exchange
LSE-AIM	London Stock Exchange Aim
LuSE	Lusaka Stock Exchange
LUX	Luxembourg Stock Exchange
MAD	Madrid Stock Exchange
MCE	Mercado Continuo Espanol
MUN	Munich Stock Exchange
NASDAQ	NASDAQ
NSE	National Stock Exchange of India
NYSE	New York Stock Exchange
NYSE-MKT	NYSE MKT
OBX	Oslo Stock Exchange
OMX	NASDAQ OMX Nordic
OTCPK	OTCPK
OTCQB	OTCQB
OTCQX	OTCQX
PAR	EURONEXT Paris
PSE	Philippine Stock Exchange
RTC	RTS Classic Market RUB
SAT	AktieTorget Stock Exchange
SET	Stock Exchange of Thailand
SGX	Singapore Exchange
SHSE	Shanghai Stock Exchange
STU	Boerse Stuttgart
SZSE	Shenzhen Stock Exchange
Tadawul	Saudi Stock Exchange
TASE	Tel-Aviv Stock Exchange
TSE	Tokyo Stock Exchange

TSX	Toronto Stock Exchange
TSX-V	Canadian Venture Exchange
TWSE	Taiwan Stock Exchange
WB	Vienna Stock Exchange
WSE	Warsaw Stock Exchange
ZSE	Zimbabwe Stock Exchange

Market Cap: is calculated by multiplying the end of day stock price with the outstanding common shares. This financial data is supplied by Morningstar and Xignite.

To search for companies that have a Market Cap between certain values, simply enter the values in the from and To boxes. The default currency is USD million.

Alternatively, the slider can be used to enter a number in the From box from by moving it to the right. To enter a number in the To box, the slider moves to the left.



Capital Raisings: Capital raisings are used by companies to raise money which will be used for varied purposes. There are three criteria that can be used for currently searching the capital raising data base.

The YES box in the first criteria does not have to be checked for the other two to be applied.

The first criteria are to simply look for companies that have or have not raised capital by checking the appropriate box.

Capital Raisings

- yes
- no

The second criteria are to search by the status of the capital raisings.

Capital Raising Status

- Proposed
- Closed
- Tranche Closed
- Amended
- Cancelled

Proposed: The company has initiated a capital raising with the intention of raising a specific amount of money with agreed terms.

Closed: The initiated capital raising has closed and all or part of the total amount has been raised.

Tranche Closed: Companies may elect to raise a total amount of money in portions or tranches. They still wish to raise the total amount, but for various reasons, elect to close off certain amounts so they have access to the capital.

Amended: The terms of a capital raising can be amended. The most common case is when a proposed amount is over-subscribed and the company has to ask for approval for the increased amount if they are publicly listed.

Cancelled: Due to various reasons, a company has the right to cancel a subscription that has been initiated. The most common reason is that there is not enough interest among investors.

The third criteria used is to search for capital raisings that had activity between certain dates. Clicking in either the To or From boxes will drop down a calendar from which the required date can be selected.

Capital Raising Date

From To

September 2016

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

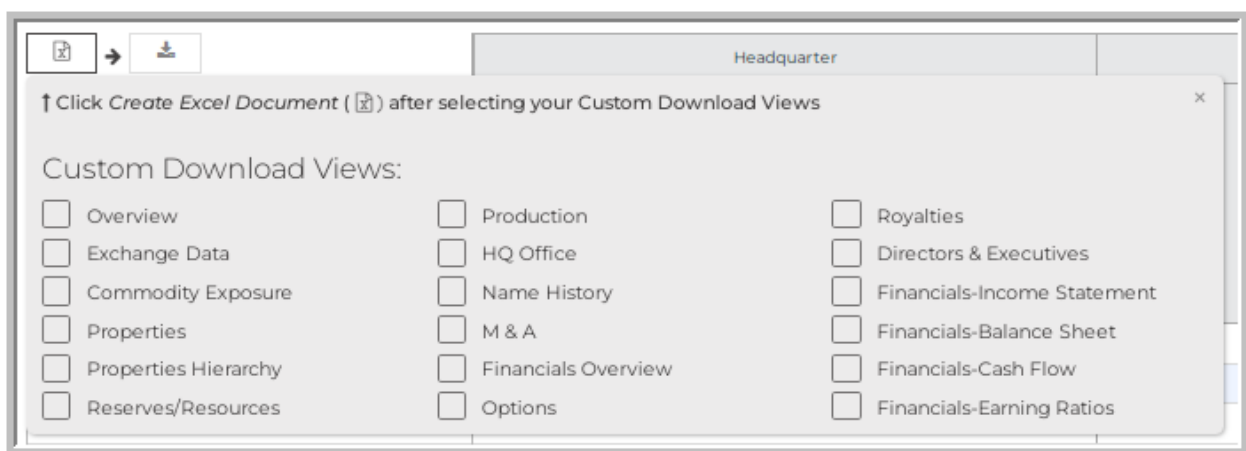
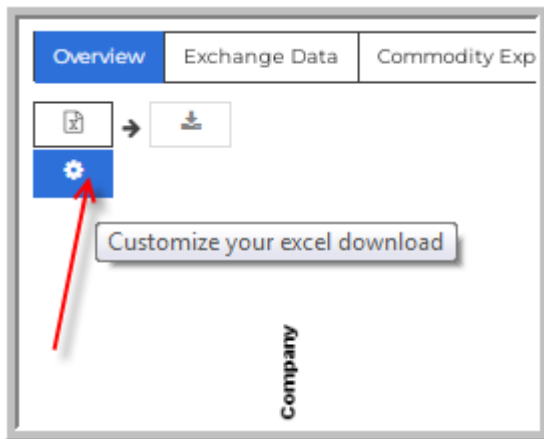
Royalties: This will narrow the search for all companies that have a royalty agreement. A royalty is an amount of compensation paid to the owner of the property which is commercially producing ore by the operator or lessee. Common types of royalty are Net Smelter Return (NSR), Net Profits Interest (NPI) and Gross Overriding Royalty (GORR).

Options: This will narrow the search for all companies that have a royalty agreement. A property option happens when a company with no current interest enters into an agreement with the owner(s) under which it will receive a defined interest in the property after it has made optional cash and/or share payments at regular intervals (usually annually) and spent a specified sum of money on exploration. Typically, the money must be spent over a period of 1 - 5 years.

All the searches can be saved and also downloaded in Excel to focus on relevant data from the view below:



The excel download can be customized using the drop down views:



- **Overview** tab-contains company's headquarter location, stock exchange, stock symbol, share price, market cap, property regions, company status, company type
- **Exchange Data** tab-contains stock symbol, share price, volume, last trade, 1 day to 1 year change %, 52 week low, 52 week high, shares outstanding
- **Commodity exposure** tab- contains region, development status and commodity exposure
- **Properties** tab- contains ownership %, property name, work type, asset type, location (country, province, region), property status
- **Reserves/Resources** tab- contains aggregated reserves (proven and probable) and/or resources (measured, indicated, inferred), commodity, contained metal. In situ value is available on Company's page.

Total Contained Material | Grade & Tonnage By Property | Contained Material By Property | In Situ Value | * Resources include reserves

Current Value

Property	Interest	Date	Source	Classification	One Tonnage (Mt)	In Situ One Value (USD per Tonne)	Company In Situ Commodity Value (B.USD)		100 % In Situ Commodity Value (B.USD)	
							Total	Air	Total	Air
Domin	50.00	Dec 31, 2022	Reserves		504.81	138.20	34.88	34.88	69.76	69.76
Domin	50.00	Dec 31, 2022	Resources		543.34	148.80	40.29	40.29	80.57	80.57

1 - 2 of 2 items

- **Production** tab- contains year and commodity production
- **HQ Office** tab- contains address, phone,email
- **Name History** tab- contains old name, explanatory note
- **M&A** tab- contains date announced, total acquisition costs,deal type, deal status,closing date, target type, target name, target status, target asset type, interest acquired,vendor,primary commodity acquired,priced paid per unit and additional data in Excel download:primary commodity resource value,value of total resource in deal
- **Capital raising** tab- contains type of financing, start date,proposed amount, final amount, status, closed date, source document
- **Financials** tab- contains financial annual details

	Total Revenue	USD
	Cost of Revenue	USD
	Gross Profit	USD
	Operating Expense	USD
	Operating Income	USD
	Pretax Income	USD
	Net Income	USD
Assets	Cash and Cash Equivalent	USD
Assets	Accounts Receivable	USD
Assets	Total Assets	USD
Liabilities	Accounts Payable	USD
Liabilities	Total Debt	USD
Liabilities	Total Liabilities	USD
Equity	Total Equity	USD
	Operating Cash Flow	USD

- **Options** tab-contains options details, property details,commodity exposure
- **Royalties** tab-contains royalties details, property details,commodity exposure
- **Directors and Executives** tab-contains name, position, status

Properties Search

Property Name

Used to search for a single or multiple properties by name. The property name is displayed followed with the country name in brackets to clarify if there are properties with a similar name but located in different countries.

Asset Type

Asset Type

- Project
- Mine
- Mine Complex
- Processing Facility

Project: An area of land for which a company or individual has the exploration rights and/or mining rights for individual or multiple commodities. Projects are contained under a specific mineral title (claim, concession, lease, licence, permit etc.) A project will not have ongoing or previous mining activity or development

Mine: A project which has now started or previously had mineral production using any extractive technique. Once a Mine always a Mine. So a closed mine subject to new exploration and/or further drilling remains a Mine.

Mine Complex: A group of individual mines which feed one or more central processing facilities, including deposits awaiting development. Most often, production details for the individual mines are not published, only the combined production of all the mines. However, reserves and resources are normally available for the individual mines

Processing Facility: Clicking on the icon to the left of the tick box, drops down a further subdivided menu of the types of processing facilities.

- ▼ Processing Facility
 - Coking Plant
 - Conversion Plant
 - Fuel Fabricator
 - Pelletizing Plant
 - Refinery
 - Roaster
 - Smelter
 - Smelter & Refinery
 - Stand Alone Mill
 - Tailings

Coking Plant: Facility that is used to convert coal into metallurgical or coking coal. Coal cannot be used directly in a blast furnace as it contains a lot of harmful and unnecessary by-products.

Conversion Plant: Uranium leaves the mine as the concentrate of a stable oxide known as U_3O_8 or as a peroxide. It still contains some impurities and prior to enrichment has to be further refined before or after being converted to uranium hexafluoride (UF_6), commonly referred to as 'hex'. Both processes are normally included in the step between mine and enrichment plant called "conversion".

Fuel Fabricator: Fuel fabrication facilities convert enriched UF_6 into fuel for nuclear reactors. Fabrication also can involve mixed oxide (MOX) fuel, which is a combination of uranium and plutonium components.

Pelletizing Plant: Iron Ore Pellets are formed from beneficiated or run of mine iron fines. The iron is usually ground to a very fine level and mixed with limestone or dolomite as a fluxing agent and bentonite or organic binders as a binding agent. Iron ore fines are formed into pellets and then hardened using a furnace to create iron ore pellets. These are typically fed to a blast furnace or DRI plant as part of the process to make steel.

Refinery: Facility that primarily produces refined metals and alloys using the output of a smelter, metal scrap, metal concentrates or a combination of these inputs.

Roaster: A facility that heats an ore to produce a chemical change that will facilitate smelting

Smelter: Facility that primarily produces an unrefined base-metal product using ore concentrate, metal scrap or a combination of both. The output is usually sent to a refinery.

Smelter & Refinery: A facility that combines smelting and refining processes.

Stand Alone Mill: A mill that is not directly connected to a mine and takes feed from a number of mines

Tailings: A mine or operation retreating tailings from (usually historic) mining operations.

Operation Type: Describes what mining method is used

▼ Operation Type

- In-Situ
- Open-Pit
- Open-Pit/Underground
- Placer
- Seabed
- Surface
- Tailings
- Underground

In-Situ: A property using (or likely to use) in-situ leaching (ISL) or in-situ recovery (ISR) methods to process ore. This involves drilling production bores through the deposit and recovering the minerals by dissolving them with reagents and then pumping the pregnant solution to the surface where the minerals can be recovered. Also known as "Solution Mining"

Open-Pit: The open pit method, sometimes referred to as **Open Cut**, is used when the orebody is near the surface and little overburden needs to be removed. Costs are much lower in open pits than in underground mining as waste and ore material are removed in bulk using truck and shovel equipment. The ore boundaries are marked out on the ground to facilitate separation from waste material. Ore and

waste are mined separately by excavating rock along a series of regularly spaced horizontal lifts or benches. Initial drill and blasting is used for harder rock.

Open Cast is a variation of open cut mining, commonly used for coal and phosphates, where the surface material covering the ore deposit is first stripped off using draglines or bucket-wheel excavators. Once the orebody has been mined the overburden is replaced, the surface re-contoured and top soil re-spread.

Open-Pit/Underground: A mining operation that starts off with open pit and then as the ore body becomes too deep, it has to switch to underground.

Placer: A method used to process river gravels or beach sands

Seabed: Also referred to as Marine. Various methods are used to extract ore from the ocean floor or offshore beach sands.

Surface: A broader term for extracting minerals near surface that includes open pit mining, strip mining and quarrying.

Tailings: A method used to recover ore from a tailings dump due to improved economics or improved technologies.

Underground: This involves various mining techniques to remove ore and waste. Accessing the underground ore can be achieved via a decline, shaft or adit. The mining method selected is determined by the shape, size, orientation and type of ore. Mining methods include cut and fill, drift and fill, shrinkage stoping, room and pillar, vertical retrieving (VRM) and block caving

Activity Status: Used to search for properties that are active or inactive due to certain conditions.

▼ Activity Status

- Active
- Temporary Suspension
- Care & Maintenance
- Abandoned

Active: Properties where there is sufficient information to confirm current activity and ownership.

Temporary Suspension: Properties where operations were temporarily suspended until a particular issue is resolved.

Care & Maintenance: Producing property where production was stopped for extended period of time possibly due to financial or economic reasons. There usually are still ore reserves remaining and mining could potentially resume in the future. Underground workings are usually kept de-watered.

Abandoned: Properties that are no longer updated and are kept in the database for historic research purposes.

Development Status: Defines the stages that a property expands through from exploration, through development production and finally closure

▼ Development Status

- Prospect
- Exploration
- Advanced Exploration
- Preliminary Economic Assessment
- Prefeasibility
- Feasibility
- Permitting
- Construction
- Commissioning
- Production
- Decommissioning
- Closed

Prospect: No significant exploration has been done on the project.

Exploration: Desk analysis was done with geologists in the field undertaking mapping, geophysical and or geochemical testing on detected ore anomalies. Minor drilling activity might have occurred and minor historic resources may be known.

Advanced Exploration: A major drilling campaign commenced to further the understanding of the detected ore body. Ore grade intersections have been made. A current resource may have been reported or is under calculation. A closed mine is being re-evaluated.

Preliminary Economic Assessment (PEA): A preliminary economic assessment has started or will be starting for the project. Initial Reserve/Resource estimates were made.

Prefeasibility: Prefeasibility study has started or will be starting for the project. The study will determine mining and processing methods. Initial capital costs, Net Present Value (NPV), Internal Rate of Return (IRR), and transportation are calculated.

Feasibility: A Feasibility Study has started or will be starting. It is a continuation of what was presented in the Pre-Feasibility study but with more thorough analysis including project design and economic studies which resulted in the release of a bankable feasibility study. An exploration adit or decline may have been done.

Permitting: Mining permits received.

Construction: Mining decision was made and the work on a construction of mine commenced. This could include pre-stripping, shaft sinking or decline development and ore could be stock piled. Infrastructure and plant construction contracts have been started or completed.

Commissioning: Mine was constructed and the process of verifying that it functions according to plan commenced.

Production: Commercial production has started and the ore is being processed.

Decommissioning: Planned shut-down of a mine commenced.

Closed: Decommissioning was completed. Mining has ceased and there are no plans to resume. Any associated processing plant and mining infrastructure has been dismantled or sold. Workings are allowed to flood or are backfilled. For open pits the final cut has been made and in underground the crown pillar removed. The reclamation process starts.

Geography

Property Location: This text box is used to further refine a search to a single or multiple location by name. It ranges from a continent, region, country, portion of a country, state, province or county. As an example, two countries can be selected for benchmarking one against the other. Coordinates cannot be used in this text box.



A search form for Property Location. It consists of a text input field labeled "Property Location" and an "Add" button to its right.

Annual Precipitation: To search for properties with a particular minimum and maximum annual precipitation, simply type the ranges in the From and To boxes or move the sliders to the desired range. This data is collected from???



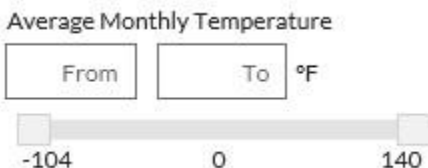
A search form for Annual Precipitation. It features a title "Annual Precipitation" above two input boxes labeled "From" and "To", followed by the unit "in". Below the boxes is a horizontal slider with a range from 0 to 315.

Altitude: To search for properties with a particular minimum and maximum altitude, simply type the ranges in the From and To boxes or move the sliders to the desired range. This data is collected from???



A search form for Altitude. It features a title "Altitude" above two input boxes labeled "From" and "To", followed by the unit "ft".

Average Monthly Temperature: To search for properties with a particular minimum and maximum monthly temperature, simply type the ranges in the From and To boxes or move the sliders to the desired range. This data is collected from???



A search form for Average Monthly Temperature. It features a title "Average Monthly Temperature" above two input boxes labeled "From" and "To", followed by the unit "°F". Below the boxes is a horizontal slider with a range from -104 to 140.

Geology: A search can be further refined by searching for properties that contain distinct Ore Deposit Types and Ore Types.

Ore Deposit Type: The five main deposit types are Biogene, Hydrothermal, Magmatic, Sedimentary and Supergene. The latter four types are further subdivided by clicking on the icon to the left of each type

Biogene: Biogenic sediments are sediments produced directly by the life processes of plants or animals

Hydrothermal: An ore deposit formed by the precipitation of solids from hot mineral-laden water (hydrothermal solution). The solutions are thought to arise in most cases from the action of deeply circulating water heated by magma. Other sources of heating that may be involved include energy released by radioactive decay or by faulting of the Earth's crust.

- ▼ Hydrothermal
 - Breccia
 - Broken Hill Type
 - Carbonate Replacement
 - Carlin Type
 - Epithermal
 - Epithermal - high sulfidation
 - Epithermal - low sulfidation
 - Greisen
 - Iron Oxide Apatite
 - Iron Oxide Copper Gold
 - Kupferschiefer
 - Manto

Magmatic: An ore deposit that is formed when a body of molten rock cools, minerals begin to crystallize and sink to the base of the magma chamber or accreting to its sides. These are usually the rock-forming minerals, but sometimes they are useful minerals like base metals sulphides or the oxides of iron, titanium and chromium. Ultramafic or mafic igneous rocks can have mineable concentrations of these minerals.

- ▼ Magmatic
 - Carbonatite
 - Kimberlite
 - Lamproite
 - Magmatic Chromite
 - Magmatic Sulfide

Sedimentary: Sedimentary exhalative deposits (SedEx deposits) are ore deposits which are interpreted to have been formed by release of ore-bearing hydrothermal fluids into a water reservoir (usually the ocean), resulting in the precipitation of stratiform ore.

- ▼ Sedimentary
 - Banded Iron Formations
 - Brines
 - Channel Iron Deposit
 - Evaporite
 - Heavy Mineral Sands
 - Placer
 - Sediment hosted Manganese
 - Sediment hosted Phosphorus
 - Tailings

Supergene:

- ▼ Supergene
 - Bauxite
 - Calcrete Uranium
 - Caliche
 - Exotic Copper
 - Nickel - Cobalt Laterite
 - Supergene Copper
 - Supergene Gold

Ore Type: Ore types can be searched for including various sub-divisions of coal

Ore Type

- Carbonaceous
- Carbonate
- Carbonate & Oxide
- Carbonatite
- ▼ Coal
 - Lignite
 - Sub-Bituminous Coal
 - ▼ Bituminous Coal
 - High Volatile
 - Low Volatile
 - Medium Volatile
 - Semi-Anthracite
 - Anthracite
- Diatreme
- Evaporite
- Laterite
- Non-Sulfide
- Oxide
- Silicate
- Sulfide
- Sulfide & Oxide

Drill Results: To search for properties that have reported or not reported drill results, the appropriate box can be checked.

▼ **Drill Results**

Drill Results

yes

no

Drill Report Disclosure Date

From To

To search for properties that have drilling reported in a particular time period, click the From and To boxes to enter a date. A drop down calendar will appear to help with the selection

Drill Report Disclosure Date

From To

September 2016

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Production: There are two options when searching for mines that have production. This is because reporting standards vary globally and not all companies report complete results. Some companies report both while others may only report only one of the two.

The first option is for mines that report Ore Production. This will report ore that was mined, milled or treated.

The second option is for mines that report Production of contained metal.

These options can be chosen separately or together.

▼ **Production**

Has Ore Production?

yes

no

Has Production?

yes

no

Operation: This search feature focusses on Mine and Processing Technologies and Production Types that are currently being used in operating mines or are being proposed in development stage studies.

Mine Technologies: focuses on the methods that are used in the various Mine Operations to extract the ore

- Mine Technology
- ▶ Surface
 - ▶ Underground
 - In-Situ Recovery
 - Marine Mining

Surface Mine Technology: clicking the icon beside Surface will drop down a menu to choose from

- Mine Technology
- ▼ Surface
 - Truck & Shovel
 - Dragline
 - Bucketwheel
 - Auger / Highwall
 - Dredge
 - Truck & Front End Loader

Truck & Shovel: Truck and shovel mining method is the most flexible mining method and therefore better suited to geological complex deposits, varying overburden depths and thicknesses, and smaller deposits (Westcott, 2004). They offer cheaper capital investments than draglines, however they cost more to operate on a bcm (bank cubic metre) per hour removal rate. Another major benefit with the system is the ability to haul material long distance to ensure re-handle will not become an issue in the present time and future of the operation (Fox, 2011).

Dragline: Dragline is the predominant machine which is used to remove the overburden and expose the ore when the deposit's characteristics match the draglines' physical capabilities. Once the characteristics of the deposit alter from the physical limitations of the dragline, the overburden removal becomes costly as the machines' rehandle increases (Scott et al., 2010). Draglines are the lowest cost overburden removal equipment in common use. However, they are generally restricted to (Westcott et al., 2009): 1. Large deposits to ensure adequate strip length and sufficient reserves to justify the capital expenditure. 2. Gently dipping deposits, due to spoil instability on steep dips. 3. Shallow deposits, as draglines can only excavate a maximum of 50 to 80 m of overburden due to reach and dump height limitations. At greater overburden thicknesses draglines may be supported by pre-strip with alternative equipment, but the compromises this entails usually adversely affects the cost effectiveness of the pre-strip.

Bucket-wheel Excavator: The primary function of BWEs is to act as a continuous digging machine in large-scale open-pit mining operations. What sets BWEs apart from other large-scale mining equipment, such as bucket chain excavators, is their use of a large wheel consisting of a continuous pattern of buckets used to scoop material as the wheel turns. They are among the largest vehicles ever constructed

Auger/Highwall: Highwall mining is a proven primary method for mining coal from outcropping horizontal seams. In this method of mining, an unmanned continuous miner is driven underground and operated in front of the highwall. The highwall mining machine stands on the pit floor or on a bench, directly in front of the exposed seam and makes long parallel rectangular drives into the coal seam. A remote-operated cutter module is pushed into the seam by a string of push beams (unmanned coal-conveying elements) that transport the mined coal back to the entry of the drive onto a stockpile. The whole mining cycle is completed by a three- or four-man crew, with no personnel going underground at any time. (Ref: Caterpillar)

Dredge: This method is mostly used for placer mining below the water table in rivers, streams, lakes, etc. It is mostly associated with gold mining. Small dredges often use suction to bring the mined material up from the bottom of a water body. Historically, large-scale dredging often used a floating dredge, a barge-like vessel which scooped material up on a conveyor belt in front, removed the desirable component on board, and returned the unwanted material via another conveyor belt in back. In gravel-filled river valleys with shallow water tables, a floating dredge could work its way through the loose sediment in a pond of its own making.

Truck & Front End Loader: This method uses a front end loader to scoop and load material into dump trucks.

Underground Mine Technology: clicking the icon beside Underground will drop down a menu to choose from

- ▼ Underground
 - Longwall
 - Shortwall
 - Cut & Fill
 - Bench & Fill
 - Overhand Cut & Fill
 - Shrinkage Stopping
 - Long Hole Stopping
 - Sublevel Stopping
 - Blast Hole Stopping
 - Breast Stopping
 - Open Stopping
 - Room & Pillar
 - Stope & Pillar
 - Continuous Miner
 - Sublevel Caving
 - Block Caving
 - Drift & Fill
 - Top Slicing
 - Raisebore Mining
 - Boxhole Mining
 - Jet Boring
 - Mechanized Cut & Fill
 - Open Cut & Fill
 - Underhand Cut & Fill
 - Vertical Crater Retreat

Processing Technology: The processing technology section allows the searching of various types of processes that are used to extract and purify various metal ore. Two main types are further subdivided for a more granular search; Conventional Mill and Hydrometallurgy

- Processing Technology
 - ▶ Conventional Mill
 - ▶ Hydrometallurgy

Conventional Mill: clicking on the arrow icon drops down a menu for six detailed methods

Processing Technology

- ▼ Conventional Mill
 - Electrostatic Separation
 - Froth Flotation
 - Gravity Concentration
 - Magnetic Separation
 - Mill
 - Paste

Hydrometallurgy: clicking on the arrow icon drops down a menu for four detailed methods which are further subdivided into Concentration, Leaching, Reagent and Recovery

- ▼ Hydrometallurgy
 - ▶ Concentration
 - ▶ Leaching
 - ▶ Reagent
 - ▶ Recovery

Concentration: this method is subdivided into Ion Exchange and Solvent Extraction

- ▼ Concentration
 - Ion Exchange
 - Solvent Extraction

Leaching: is further subdivided into seven processing methods

- ▼ Leaching
 - Agitated Tank Leach
 - ▼ Autoclave
 - High Pressure Leach
 - Matte Leach
 - Pressure Leach
 - Pressure Oxidation
 - Dump Leach
 - Heap Leach
 - In Line Leach
 - In-Situ Leach
 - VAT Leach

Reagent: further subdivided into eight processing methods

- ▼ Reagent
 - Alkaline
 - Ammonia
 - Bio Leach
 - Carbonyl
 - Chlorine
 - Cyanide
 - Sulphuric Acid
 - Thiosulphate

Recovery: further subdivided into eight processing methods

- ▼ Recovery
 - Carbon in Column
 - Carbon in Leach
 - Carbon in Pulp
 - Electrowinning
 - Mechanical Evaporation
 - Merrill-Crowe
 - Precipitation
 - Solar Evaporation

Production Type: allows the searching of the type of finished product by distinct products

- ▼ Production Type
 - All
 - Anode Copper
 - Blister Copper
 - Coal
 - Coking Coal
 - Concentrates
 - Crude Bitumen
 - Fines
 - Finished Product
 - Hard Coking Coal
 - Lumps
 - Metal In Bullion
 - Metal In Concentrates
 - Metal In Concentrates & SX-EW
 - Metal In Doré
 - Metal In Leach
 - Metal In Matte
 - Metal In Ore
 - Metal In Precipitates
 - Metal In Sulphate
 - Payable In Concentrates
 - Payable In Concentrates & SX-EW
 - PCI & Coking Coal
 - PCI & Steam Coal
 - PCI Coal
 - PCI, Steam & Coking Coal
 - Pellets
 - Raw Coal
 - Raw Coking Coal
 - Raw PCI & Steam Coal
 - Raw PCI Coal
 - Raw Steam & Coking Coal
 - Raw Steam Coal
 - Refined Metal
 - Refined Metal (SX-EW & Electro Refined)
 - Refined Metal (SX-EW)
 - Rough Stones
 - Semi Soft Coking Coal
 - Soft Coking Coal
 - Special Products
 - Steam & Coking Coal
 - Steam Coal
 - Ultra-fines

Commodity: The commodity parameter allows properties with exposure to certain commodities to be searched.

There are two methods of adding a commodity or group of commodities to a search.

The first is to start typing a name in the text box. A name or names will start to appear below. Click on the correct one. The full name will appear in the text box.

However, this does not automatically get added to the search. As per other similar text box parameters, the Add button has to be clicked to add the commodity. That commodity and other ones that were chosen will appear below the text box with check marks beside them.

The second method is to click the arrow beside Primary Commodity. A drop down list of the 20 more popular commodities will appear. Clicking on the Show More text, will further display an additional list of 109 commodities. Click on one or many boxes to add the commodity to the search. It is not necessary to click on the add button as the commodities with the boxes checked are automatically added. If more than one commodity is checked, the search will return properties with either one or all of the commodities. It will not return search results of properties that only have all three together.

▼ Commodity

▼ Primary Commodity

Commodity name

- Prospects and exploration stage prope
- Chromium
- Coal
- Cobalt
- Copper
- Diamond
- Gold
- Iron Ore
- Lead
- Manganese
- Molybdenum
- Nickel
- Palladium
- Platinum
- Rare Earth
- Rhodium
- Silver
- Tin
- Tungsten
- Uranium
- Zinc

Royalties: This will narrow the search for all properties that have a royalty agreement. A royalty is an amount of compensation paid to the owner of the property which is commercially producing ore by the operator or lessee. Common types of royalty are Net Smelter Return (NSR), Net Profits Interest (NPI) and Gross Overriding Royalty (GORR).

Options: This will narrow the search for all properties that have an option agreement. A property option happens when a company with no current interest enters into an agreement with the owner(s) under which it will receive a defined interest in the property after it has made optional cash and/or share payments at regular intervals (usually annually) and spent a specified sum of money on exploration. Typically, the money must be spent over a period of 1 - 5 years.

Overview	Commodity Exposure	Ownership	Addresses	Geography	Geology	Reserves/Resources	Reserves Value	Resources Value	Operations	Processing Technologies	Ore Production	Production (orig)	Annual Production	Production	Production Costs	Metal In Ore Production
Drill Results	Staff	Personnel	Options	Royalties	Dev Studies	Capital Raisings										

- **Overview** tab-contains latest news, property details, location, status.
- **Commodity Exposure** tab-contains property details, commodity products, commodity exposure
- **Ownership** tab-contains interest %, company, ownership tree
- **Addresses** tab-contains mines address
- **Geography** tab-contains lat/long, elevation, nearest landmark, avg temperature, avg precipitation, climate zone
- **Geology** tab-contains Reserves ore type, ore deposit type
- **Reserves/Resources** tab-contains latest Reserves/Resources details (classification, tonnage, commodity, grade, contained metal)
- **Reserves/Resources Value** tab-contains in situ commodity value
- **Operations** tab-contains property details, mine technology
- **Processing Technologies** tab-contains property details, mine processing technologies
- **Ore Production** tab-contains annual and quarterly ore production details (ore mined/milled)
- **Annual Production** tab-contains commodity annual production
- **Production** tab-contains commodity quarterly and annual production
- **Production Costs** tab-contains commodity production costs
- **Drill Results** tab-contains drill results
- **Personnel** tab-contains name, job title, linkedIn link
- **Options** tab- contains options details, property details, commodity exposure
- **Royalties** tab-contains royalties details, property details, commodity exposure
- **Dev Studies** tab-contains dev study details: Study type, study date, source document link, NPV, IRR, payback period, capital cost, operating cost, estimated mine life
- **Capital Raising** tab- contains type of financing, start date, proposed amount, final amount, status, closed date, property name, source document