Ironbark Zinc Limited

Level 3
22 Railway Road
Subiaco 6008
Western Australia

PO Box 8187
Subiaco East
WA 6008
T: +61 8 6146 5325
www.ironbark.gl
admin@ironbark.gl

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Australian Securities Exchange Limited
Level 40, Central Park,
152-158 St Georges Terrace
PERTH WA 6000

RESPONSE TO ASX QUERIES – SUPPORTING INFORMATION TO RELEASES ON 7TH AND 14TH SEPTEMBER 2020

Introduction

Further to the Announcements made by Ironbark Zinc Limited ("**Ironbark**", "**the Company**" or "**IBG**") on the 7th of September 2020 ("Citronen Mine Plan Optimisation") and 14th of September 2020 ("Maiden Ore Reserve Citronen Project"), the ASX has requested the Company provide further information as outlined below.

For reference, the Citronen Mine Plan Optimisation announcement referred to an updated version of the mine plan first resolved and released as part of the Citronen Feasibility Study Update on 12 September 2017. A more detailed comparison of those two mine plans is outlined below (in addition to the commentary included in the 7th September 2020 announcement.

The Maiden Ore Reserve announcement was a subsequent and new deliverable and the assumptions underpinning the Ore Reserve were included in JORC Table 1, Section 4 of the 14th September 2020 announcement. For clarity, a summary of the key elements of that table are listed below.

- Mining method: Underground (cut & fill) and open pit
- Zinc price: US1.20/lb
- Throughput rate: 3.3Mtpa
- Ore Tonnes (Mt): 37.8
- Grade: 5.28% Zn & 0.55% Pb
- Cut off grade: 4.0% Zn
- Recoveries: Zinc - 85%, Lead – 69.7%
- Development rates: Decline - 90m/mo, In ore – 60m/mo
- Operating Cost: U/G Mining USD$37.0 t/ore, O/P Mining USD$7.0 t/ore, Processing USD$16.0 t/ore, G&A USD7.0 t/ore
- Capital Cost: Mining USD75.5M, Process & Infrastructure USD449.4M

The Mineral Resources used as the basis of this Ore Reserve were completed by Ravensgate consultants and reviewed by Mining Plus prior to commencing the optimisation study. The resource is separated in 3 different block models – one each for the Beach, Esrum and Discovery Zones. The Resource estimate was sourced from the 2017 Feasibility study and is shown in the table below:

70.8 million tonnes at 5.7% Zn + Pb

Category	Mt	Zn%	Pb%	Zn+Pb%
Measured	25.0	5.0	0.5	5.5
Indicated	26.5	5.5	0.5	6.0
Inferred	19.3	4.9	0.4	5.3

Using Ordinary Kriging interpolation and reported at a 3.5% Zn cut-off

Including a higher grade resource of:

29.9 million tonnes at 7.1% Zn + Pb

Category	Mt	Zn%	Pb%	Zn+Pb%
Measured	8.9	6.6	0.6	7.2
Indicated	13.7	6.8	0.5	7.3
Inferred	7.3	6.2	0.5	6.6

Using Ordinary Kriging interpolation and reported at a 5.0% Zn cut-off

The Mineral Resources are reported inclusive of the Ore Reserves.

The Ore Reserve Estimate is based on the Mineral Resource released in 2011, by Ravensgate, with the competent person being Ravengate's Stephen Hyland.

The mining method is cut and fill with primary and secondary panels. Overbreak was considered to be the only source of dilution in the mine. The panel layout was undertaken with the addition of 30cm and 10cm of overbreak to the backs and the floor, respectively, which equates to approximately 7% dilution based on an average width of 6 metres.

The mine recovery was considered to be 98% as Cut and Fill is a high recovery low dilution mining method. Regional pillars are considered to be partially extracted at the end of the mine life with a recovery factor of 50%. Access pillars were also assessed and factorized as 7% on top of the mine recovery. All mining parameters are based on geotechnical recommendations. Mineable areas were outlined with the use of the Datamine MSO software. The minimum mining width used was 4.0 meters, this parameter derived from the 2012 Citronen Mining Optimisation design and Schedule study undertaken by Mining Plus.

The current mining method (cut and fill) is an optimisation of the previously selected method (room and pillar). Furthermore, it takes into consideration the current geotechnical parameters and mining practicalities. The key driver of the mining method selection was to maximise the recovery under the geotechnical assumption that all panels need to have the top (backs) supported. The presumption excludes options for longhole drilling methods, as the height of the production areas is relatively small (average of 6m), which excludes the possibility of developing a bottom drive for a panel.

The mining method was optimised to follow the contours of the orebody mineralisation increasing recovery and reducing dilution. The new design will also help with mining productivity, as it reduces development issues and makes the backfill process easier.

Ore processing will incorporate the following stages: primary & secondary crushing, dense media separation, grinding and classification, flotation and concentrate thickening and filtration. The process method chosen is considered standard for the commodity and style of mineralisation. Very high zinc flotation recoveries of 85% have been achieved in test work.

The metallurgical process is well-tested in the industry. Samples were prepared for mineralogical testwork in ALS Ammtec and then sent for Qualitative Optical Mineralogical Examination via Roger Townend and Associates. No deleterious elements have been identified through the sampling and assaying of the mineralisation. Metallurgical testing has been carried out on Citronen drill core after the 2008, 2009, 2010 and 2011 drilling campaigns. Composite samples were created for each of the three deposits – Beach, Esrum and Discovery. The test work has been conducted by Burnie Laboratories in Tasmania (now part of ALS Global).

Cut-off grade is based on a Net Smelter Return (NSR), taking into account the net revenue from recovered Zn, Pb and the cost of mining, processing and G&A. The NSR calculation relied upon the processing recoveries of 85% for zinc and 69.7% for lead, and costs;

- Processing Costs: USD 30.68/tonne ore
- G&A: USD 12.64/tonne of ore
- Mining Costs: USD 36.65/tonne of ore

The Citronen project is a multi-material and recovery project. Thus, it is not possible to set the Cut-off value based on the contained metal. To overcome this limitation, an NSR value calculation was undertaken, taking into consideration the recoveries and smelter terms for Zn and Pb. With the NSR value, a ZnEq grade was back-calculated and resulted in the approximate value of 5.3% ZnEq.

The formula for the ZnEq calculation is as stated below:
$ZnEq=Zn+0.68\times Pb$

Upon completion of the cost model, a new cut-off calculation was undertaken, using the same cost assumptions but increasing the metal price by 25% (1.5US$/lb). The cut-off calculated was on the mark of 4.0% Zn equivalent and increased the ore tonnes by 48%.

An extension of the design was carried out to test scenarios at different sets of metal price, and it showed that the 4.0% ZnEq cut-off scenario was still economical under the metal price used in the study (1.2 US$/lb). The exercise showed that the initial process and G&A costs were conservative. Ironbark will conduct investigations in the near future to increase the confidence in processes and G&A costs.

Part of the Measured and Indicated Resources has been classified as Proved and Probable Reserves.
The Ore Reserve consist of 37% Proved Reserve and 63% Probable Reserve. The Mining component of the PFS has been completed with a relative accuracy of +/-25%. All mining estimates are based on relevant costs in USD or factored estimates from similar mining method and scale projects

Where practical and possible, current industry practices have been used to quantify estimations made
To mitigate risks associated with the project it is recommended that the following work be undertaken:

- Hydrogeological study
- Frozen backfill analysis
- Geotechnical Numeric Modelling

The Citronen Deposits lies within Exploitation Licence 2016/30 which was granted on 16th December 2016 for a period of thirty years. The deposit is located in the Northeast of Greenland, it is accessible by air or ship. No infrastructure exists at the Project site, other than a temporary camp and a gravel airstrip. All required infrastructure will have to be established, including a port. Shipping will be required to bring in fuel and large equipment and to transport concentrate to the market.

A full Environmental Impact Assessment has been completed and submitted to the Government of Greenland. Environmental factors and management solutions are outlined in the Feasibility Study Report for Citronen released to the ASX on 29 April 2013. Tailings from the mine will be used as backfill underground or stored in an on-ground

Tailings Storage Facility. Waste rock will be stored in a waste-dump on surface. Environmental studies concluded that mine wastes will not significantly increase the levels of metals in the aquatic or terrestrial environment of the area.

Relationships with stakeholders are in good standing and there are no known social impediments to the project. A full Social Impact Assessment has been submitted to, and accepted by, the Government of Greenland.

Citronen Mine Plan Optimisation Announcement - Clarifications

As per the Announcement made on 7th September 2020, the Citronen Mine Plan Optimisation Study built upon (and rolled forward) the key assumptions made in the "Citronen Feasibility Study Update" released to the ASX on 12 September 2017 apart from the change to the assumed Zinc price (2020: USD1.20/lb, 2017: USD1.38/lb). This change was listed at the first bullet point under "Highlights" on p.1 of the 7th September 2020 announcement.

For further clarity, as an optimisation exercise to the mine plan determined as part of the 2017 Feasibility Study, the operating parameters for the 2020 plan for the mining operation are highly aligned with previous work (as outlined below).

Examples of key material assumptions are listed below (material changes since 2017 underlined):

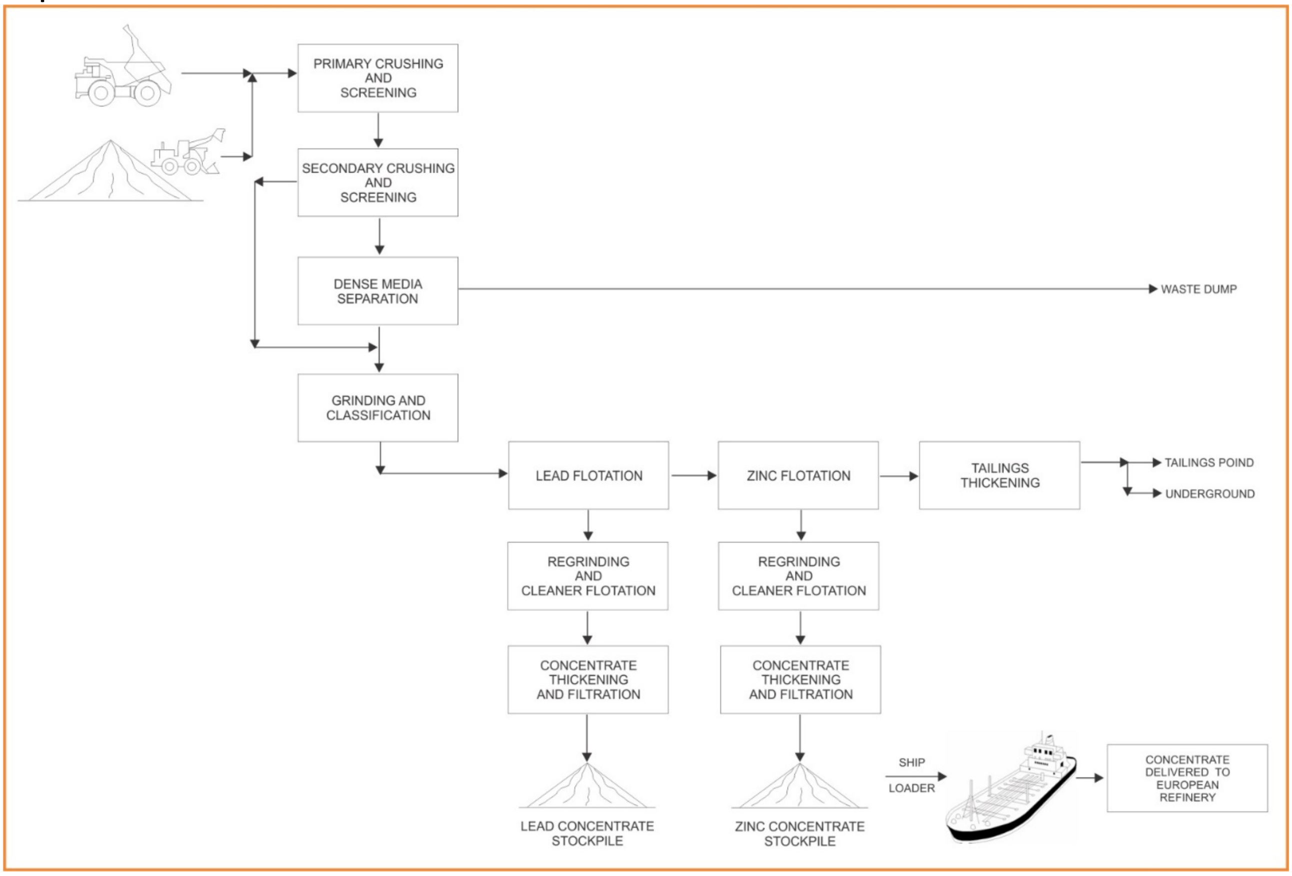
	2017 FS	**2020 Optimisation**
Mining Method	Underground & Open Pit	Underground & Open Pit
Zn price	USD1.38/lb	<u>USD1.20/lb</u>
Throughput Rate	3.3Mtpa	3.3Mtpa
Ore Tonnes (Mt)	35.8	37.8
Grade	5.85% Zn & 0.5% Pb	5.28% Zn & 0.55% Pb
Cut Off Grade	4.5% Zn	4.0% Zn
Zn Recovery	85%	85%
Development Rates	Decline – 150m/mo In ore – 100m/mo	<u>Decline – 90m/mo</u> <u>In ore – 60m/mo</u>
Declines	1	<u>2</u>
Cumulative Zn metal first 6 years	1.07Mt	<u>1.16Mt</u>

Please see p.11 of this announcement for details of the mining factors and assumptions relating to the underground.

Based on the most recent geological model (Ravensgate Resource Estimation), a final selected strip ratio for the Open Pit component of the 3.3Mtpa case of 1:1.99 (ore:waste) with overall pit angles of 37 degrees in the overburden and then steepening to between 45 and 55 degrees in the fresh rock. A dilution rate of 4% was applied with mine recovery rates of 98%.

The process description was prepared by Wardrop in 2011 in line with the flow sheets developed by Metso; the simplified flow sheet is shown below:

Proposed Flow Sheet



Crushing

Crushing equipment selection and circuit configuration is based upon UCS, Bond Crushing Work Index and Macon testing (Metso's in-house testing method) of both the Discovery and Beach ore composites. A compact two stage crushing plant has been selected, with DMS testwork indicating acceptable metal recovery and mass rejection can be obtained with a primary crusher discharge P80 of 130 mm reduced to a P80 of 35 mm in the second stage.

The circuit equipment has been selected to achieve approximately 550 t/h average throughput levels at 18 h/d operation (6.5 d/wk, 365 d/a). The ore is delivered by haul truck and either direct dumped into the run of min (ROM) bin or onto the ROM pad and later transferred by front-end loader (FEL) to the ROM bin. The ROM bin is protected by an 800 x 800 mm grizzly, and a rock breaker is mounted adjacent to break up oversize.

The ore is fed by a vibratory grizzly feeder drawing ore from the ROM bin and feeding into the jaw crusher where it is crushed to a P80 of 130 mm. A primary jaw crusher size has been selected to minimise the probability of blockages.

A high frequency vibratory double-deck secondary screen precedes the secondary cone crusher with undersize reporting to the crushed ore product transfer point. Tramp steel is removed by two magnets located over the conveyor. A metal detector is located on the secondary crusher feed bin feed conveyor with an interlock hardwired to the conveyors.

The secondary screen oversize is conveyed to the secondary crusher feed bin where a vibrating feeder feeds the secondary crusher. The secondary crusher discharge is conveyed to the high frequency vibratory double deck screen. The screen undersize is conveyed over a weightometer to the DMS feed bin.

Dust suppression is by individual suction hoods at transfer points ducted to a central fan and bag-house. Buffer storage of crushed ore and mill feed is minimised due to space constraints.

Dense Media Separation (DMS)
DMS performance at a 2.96 to 3.10 separation SG provides recoveries in excess of 97% of lead and zinc to the sinks plus the 1.0 mm fines product bypass throughout the size ranges tested.

The DMS feed bin discharges at an approximate average of 375 t/h by belt feeders to a wet feed preparation screen that removes all -1.0 mm material, with the screen oversize feeding into the DMS cyclone feed hopper.

The DMS cyclone pump feeds 38+1 mm material combined with dense medium to the DMS cyclones. The DMS cyclone overflow is stripped of medium on a drain-and-rinse dual screening system with screen oversize conveyed to the external floats stockpile. The DMS cyclone underflow is stripped of medium on a drain rinse screen system, and the screen oversize is conveyed to the sinks (ball mill feed) bin.

The DMS feed fines are separated at the wet feed preparation screen. Sixteen percent of the ore feed weight reports as -1 mm fines. The fines are directed to the fines dewatering cyclone feed hopper where they are pumped to the cyclone, which dewaters the stream. The fines are then directed to the secondary milling circuit.

The sinks are drawn from the mill feed bin by belt feeders and conveyed to the primary mill feed, where the feeder rate is regulated by a weightometer.

Grinding
Ball Milling
A 4.42 m diameter x 7.5 m long 2.2 MW grate discharge primary ball mill operates at an approximate average of 298 t/h treatment rate in closed circuit with a scat recycle screen with a bottom deck aperture of 1.2 mm.

The screen separation at nominally 1 mm is facilitated by high volume water sprays, and uses the entire water requirement for the grinding circuit to achieve a clean separation. The screen undersize flows to a common pump hopper that also receives DMS fines spiral concentrate and secondary grinding mill discharge.

The mill has sufficient power to achieve the design grind size of 850 µm P80. The mill is rubber lined, takes up to a 24% by volume steel charge and operates at 71% of critical speed. Balls of 90 mm to 120 mm size are added by kibble at the mill feed chute.

Vertical Stirred Milling (VTM)
Primary screen undersize, VTM discharge and DMS fines spiral concentrate are combined in a hopper and then pumped to a cyclone cluster at a density that enables a 53 µm cut point to provide a P80 of 45 µm to flotation. The cyclone cluster holds 6+2 400 mm diameter cyclones. Cyclone underflow feeds the VTM circuit and cyclone overflow is gravity fed to a trash screen. The VTM unit discharges overflow back to the cyclone feed hopper.

Two 2.2 MW VTM units have been selected with 24 mm x 24 mm recharge size high chrome cylpebs that are added by kibble at the mill feed chute. A proprietary blocker reagent (D200) may be added to the cyclone feed hopper.

Flotation and Re-grinding
The mill cyclone overflow of P80 size 45 µm gravity flows to a trash screen of 0.8 mm aperture. The trash screen undersize is pumped to a single conditioner that overflows to a pre-flotation circuit. The pre-flotation (pre-float) stage is necessitated by a carbonaceous population that would otherwise impact downstream grades and froth stability. Dextrin depressant and frother are dosed to the conditioner tank. Trash screen oversize is collected in a trash bunker for disposal.

The pre-flotation concentrate is discarded to the tailings thickener, and the intermediate tailing flows to two conditioner tanks in series (three minute residence time in each) in which lead circuit pyrite depressants and collector are dosed. The conditioners overflow in sequence to the lead rougher scavenger flotation cells at a design rate of approximately 310 t/h. Frother is dosed to the conditioner discharge and rougher cell junction boxes.

First rougher lead concentrates are diverted to final concentrate, cleaner feed or regrind feed depending on grade in the cleaner circuit. Second lead rougher and scavenger lead concentrates are pump-fed to 100 mm diameter dewatering cyclones and the cyclone underflow is reground to a P80 of 10 µm to 15 µm in two 185 kW stirred media detritors (SMDs) using 3 mm ceramic beads. Lime at 30% solids w/w concentration and ligno-sulphonate solution at 10% w/v strength are added to the lead regrind mills to depress pyrite.

The reground lead concentrate and first rougher lead concentrate are pumped to the first cleaner and first cleaner concentrate is pumped to the second cleaner feed. First cleaner lead tail is open circuited to the zinc flotation conditioners with the rougher lead scavenger tail.

Copper sulphate at 10% w/v strength is added to the zinc conditioner feed pump (Pb rougher tail) hopper for the re-activation of sphalerite.

The flotation of zinc is preceded by two conditioning tanks in series each of three minute residence time for the addition of lime and the flotation collector, respectively. Frother is added in stages to the zinc second conditioner discharge and rougher flotation cell junction boxes. The zinc conditioners overflow in sequence to the zinc rougher scavenger flotation cells.

Depending on grade, first rougher zinc concentrates can be diverted to final zinc concentrate, zinc cleaner feed or zinc regrind feed. The zinc second rougher and scavenger concentrates are pump-fed to 100 mm diameter dewatering cyclones and the cyclone underflow is reground to a P80 of 10 µm to 15 µm in five 355 kW SMDs. Lime and ligno-sulphonate are added to the zinc regrind mills to depress pyrite.

The reground zinc concentrate and the first rougher zinc concentrate with regrind zinc cyclone overflow are pumped to the first cleaner bank. The zinc cleaner circuit can be operated as either a three-stage cleaner, or a cleaner and re-cleaner system as required. The first zinc cleaner tail is pumped open circuit to the final tail thickener where it is combined with pre-flotation concentrate, DMS fines spiral lights, and rougher scavenger tailing.

Concentrate Dewatering
Each concentrate is dewatered to a minimum of 60% solids by weight in a conventional thickener. The thickener underflow is pumped to an agitated stock tank. A plate and frame pressure filter is fed by a variable speed pump from the agitated concentrate stock tank and filtrate is recycled to the appropriate concentrate thickener feed.

The overflows from the zinc concentrate thickener and the lead concentrate thickener flow to the process water tank. The filter cake discharge is conveyed to and stacked in the covered storage area.

The filters selected have the capacity to filter at peak concentrate production rates of 4 t/h and 40 t/h for lead and zinc concentrates, respectively, and produce a filter cake with a design moisture allowance of 10% to 12%. The lead concentrate is batch filtered as required in one of the two filter units.

Concentrate is loaded to a reclaim conveyor by FEL from the covered storage area, using a load cell on the FEL to determine loaded wet weight. Moisture and assay samples enable calculation of the dry tonnes and metal contained for consolidation with the ship-loading weights and assays and customer shipment receival weights and assays. This concentrate production data is also used to back-calculate plant performance using the flotation shift sample assays and the mill feed weightometer.

Tailings
The final tailings are made up of the zinc scavenger tail, zinc cleaner tail, pre-flotation concentrate and the silicate rich slime reject solids from the fines spirals. The final tailings are dewatered in an 18 m diameter high-rate thickener to 58% solids by weight and transferred by the underflow pumps to a pump hopper. The thickener overflow is returned to the process water tank.

Thickened tailings are pumped from the pump hopper with other effluent streams to the tailings storage facility (TSF) or diverted for use underground as frozen backfill when required.

The tails thickener overflow may require future installation of a clarification stage should carbonaceous material threaten to contaminate the process water. Thickener overflow clarity in a confined plant can be an operational issue; however, this is relieved by the design of the process water tank to promote settling and reclaim of solids. A separate process water tank may be installed at a future date should process water alkalinity build up and impact the lead circuit performance.

Reagents
Pre-flotation of carbonaceous mineral requires IF6-3N frother and Dextrin depressant addition. Dextrin is mixed continuously, direct from the bulk-bag using a 'jet-wet'-style system to a 10% w/v strength.

Some proprietary carbonaceous blocker D200 may be added to the milling circuit and the pre-float conditioner. The D200 is in liquid form and is batch mixed with water to 25% w/v strength.

For mineral collection in the lead flotation circuit a Cytec 3406 dithio/monothio-phosphate blend at 100% w/v mix strength is added to the second conditioner and IF6-3N frother to the conditioner discharge and first lead rougher junction boxes. Additional stages of collector addition and frother are made through the cleaner circuit. A pH modifier or naphthalene sulphonate depressant is also added to the cleaner feed to depress pyrite.

Ligno-sulphonate is readily dissolved in water at 10% w/v and is mixed in batch mode. Addition is to both regrind circuits. Lime is delivered as burnt lime (CaO) and is fed from a silo into a slaking mill which discharges to a slaked lime tank. The lime slurry at 25% solids w/w is added to both the lead and zinc concentrate regrind mills. The regrind mill additions maintain a pH setpoint at approximately 10.5 in the first cleaner of the cleaner flotation circuits. Lime can be added to the first conditioner in the zinc rougher circuit to control pH.

Copper sulphate solution is mixed at 10% w/v strength in batch mode and is used as an activator for flotation of zinc minerals. It is added to both the first zinc conditioner feed pump and the zinc regrind discharge hopper by a dosing pump.

The zinc flotation collector Cytec 9323 is a blend of dithiophosphates and mono-thionocarbamates. The collector is added at full strength to the second flotation feed conditioner tank by a dosing pump. Stage additions downstream of collector and frother may also be used by the operators. A facility is provided for dosing of a second collector.

IF6-3N frother is dosed as 100% solution by a dosing pump (as required) to sustain the optimum froth characteristics throughout the flotation circuits.

A pH modifier or naphthalene sulphonate depressant is mixed in batch mode to 10% strength w/v and is also added to both of the cleaner feeds to depress pyrite.

Flocculant is mixed from bulk powder storage in a packaged continuous mixing plant at 2.5 g/L and held in a storage tank for one hour for hydration. The stored flocculant solution is further diluted in-line and dosed to each thickener feed box and the thickener feed well sparger pipes at a volumetric flow determined by the thickener control system.

A spare jet-wet mixing facility is provided for an additional depressant (nominally PC100 poly-acrylamide) and spare pumps for an additional collector. All mixed reagents have a mixing system and tank that transfers the mixed reagent to a storage tank. The reagents are dosed to the process from the storage tank by metering pumps.

The infrastructure requirements for the proposed mine and processing plant need to be disclosed to support the production target.

There is no existing infrastructure at the site and consequently all infrastructure and ancillary facilities need to be developed as part of the project. The infrastructure required for the Citronen Project are:

Haul & Service Roads
Roads will be established as privately financed roads and are to be used solely for mining works at Citronen. They will be designed, constructed and maintained in accordance with established mining industry practice. Horizontal alignment will have a minimum radius down to 150 m for haul roads, and down to 20 m for service roads. The maximum longitudinal grade is 8% for haul roads and 12% for service roads. The general cross sections are based on normal road building practices in arctic areas. The road substructure will generally be constructed with locally excavated soil reclaimed as part of cutting or from nearby borrow pits, depending on the earthworks balance. Culverts will be designed and placed to allow melting water and

rainwater to cross the roads. Culverts will be constructed with steel pipes. Haul roads required include open pit to run-of-mine (ROM) pad (approximately 3,880 m) and to portal location (approximately 200 m). The dominant traffic on haul roads will be heavy off-highway trucks. The dominant traffic on service roads will be four-wheel drive multi-purpose vehicles (MPVs), off-roaders, and small to medium size trucks and fuel trucks. Service roads will be 3.5 m wide single-lane gravel roads. The total width of the roads will typically be 5.0 m, inclusive of shoulders. During the detailed design phase, a risk assessment will be carried out to determine where safety bunds are needed. They will be constructed according to general practice for mine haul roads, i.e. with the minimum height of berm being 0.5 x biggest wheel diameter.

Site Service & Utilities

- Fresh water will be sourced from a naturally occurring lake (Lake Platinova) and will be pumped to the process plant and the water treatment plant at the main warehouse. Treated water will then be pumped to the camp and administration facilities. With an expected manpower of 250 persons at Citronen, approximately 35 m^3/d of potable water is required. A small containerised treatment plant is proposed for the treatment of 40 m^3/d of lake water.
- Fire Protection Systems: The plant site facilities will be protected with a pressurised fire protection system comprising a fire water reserve, an electric driven jockey pump, an electric driven fire pump and an emergency diesel driven fire pump. The fire water reserve will be contained in a dedicated portion of the raw water tank in the process plant.
- Sewage Treatment & Disposal: Sewage and waste water from buildings at the plant site will be sent to the sewage treatment plant. Dry closets will be used at the airport building. The sewage treatment plant will be a standard containerised solution which can treat approximately 40 m^3 of waste water per day. Effluent from the camp site will be carried to the sewage treatment plant through pipelines running below the arctic corridors to the main warehouse. Effluent from waste water will go into the process plant.
- Incinerator & Hydrocarbon Waste Facility: An incinerator capable of dealing with combustible waste, lubricants, fuel and oil will be installed in the main warehouse. Installation in the warehouse will reduce the need for heating due to utilisation of the radiant heat from the combustion chamber. The incinerator cannot be used for burning larger metal parts, batteries or chemical waste. These types of waste will be collected and stored for later disposal off site. The incinerator has fully electronic-controlled burners with automatic spark ignition and safety devices. It is controlled by two temperature controllers and the operating temperature is 850-950°C, which should ensure clean emissions.
- Lighting & Area Lighting: Indoor lighting will be designed according to National Danish Code DS 700. For area lighting, LED lighting fixtures have been selected and are assumed to be LED Light-type “CrystalLed” with 72 LEDs. The CrystalLed fixture is preferred as it has a life expectancy of more than 80,000 hours and the relative high output of more than 100 lm/W.
- Site Control System & Communications: A fibre optic network will be installed around the site to facilitate plant control system and communication between process areas. The fibre network will also be utilised for the process of closed circuit television (CCTV) system signal transmissions. Generally, the network routing will follow that of the site power distribution. A programmable logic controller (PLC) based system will be used for monitoring and control of the entire site. PLC input/output (I/O) cabinets located in electrical rooms throughout the plant will be used to interface all field instrumentation, equipment and motor controls. Citronen is located above 83°N and has limited satellite exposure. External communications will be provided by Iridium Communications Inc. (Iridium), as this is the only option available.

Power Supply & Distribution

- Plant Power Generation: Electricity production and supply will comply with Greenlandic electrical regulations and will be based on European standards with 50 Hz frequency and 400/230 service voltage. The required power consumption of approximately 23 MW will be met by a total of six generator units, with four in operation and two on stand-by duty/ maintenance. The generators will be medium speed units rated for continuous operation in an arctic environment for a service life of at least 25 years.
- Power from the generator plant is delivered at 6.9 kV throughout the facilities. Substations are complete with step-down transformers (6.9/0.4 kV) and are rated 200 kW, 500 kW or 1,000 kW, depending on the requirements at each substation. The substations will be located centrally within areas (to be determined at the appropriate time), where practical, to minimise distribution losses.

Fuel Storage

The fuel storage area consists of:

- two tanks each with a capacity of 25,000 m^3 fuel for arctic diesel
- two tanks each with a capacity of 250 m^3 jet fuel
- hose station and lines
- pipelines for both arctic diesel and jet fuel
- fuel station for arctic diesel

Plant Site

- Administration and Mine Dry Buildings: The buildings will be constructed from pre-fabricated modules. They will be elevated from the ground, integrated with the main warehouse and will be part of the walkway system between the camp and the process plant.
- Main warehouse and Plant Workshop: The main warehouse and plant workshop will be connected directly to the administration building and to the process plant via arctic corridors that form part of the walkway system between the process plant and the camp. Access from the service road will be through a four metre by three metre door into the warehouse section via an air lock. The warehouse will be serviced by indoor forklifts. There is no provision for an overhead crane within the building. The structure will be steel framed with steel cassettes for the roof and insulated panels for cladding. The floor and foundations will be reinforced concrete. The building will be placed on a gravel pad including insulation to preserve the permafrost.
- Truckshop: The truckshop building will be a pre-engineered steel structure 98 m long by 21 m wide with 10.5 m height to underside hook of an overhead crane. The structure will be clad with insulated metal roof and wall sandwich panels.
- Accommodation complex: The camp is designed to accommodate 290 people based on an 8+1 concept and comprises eight accommodation blocks spread around a central reception block. This layout was selected to enable camp residents to access central facilities through small connection corridors without having to go outdoors.
- Arctic corridors: Arctic corridors will be used for the connection of the accommodation blocks and centre building in the camp, centre building and administration/dry/main warehouse and main warehouse and the process plant. The corridors will also be utilised for distribution of services such as water, heating and electricity. Sewage pipes will run below the corridors. The corridors will be constructed from prefabricated modules elevated from the ground similar to the camp. The corridors are heated by glycol systems to a temperature of +5°C and exterior doors are heat traced to ensure they will open and close.

Heating, Ventilation and Air Conditioning System

- Due to the on-site climate conditions, it is necessary to provide heating to the plant site buildings to enable regular maintenance and operations to be carried out. The heating, ventilation and air conditioning (HVAC) system will utilise waste heat recovered from the power plant.

Explosives

- Ammonium nitrate and fuel oil (ANFO) will be mixed on-site. The required storage capacity will correspond to one year's use of explosives requiring 2,000 t of ANFO.
- The use of two explosives magazines instead of one ensures a supply of explosives in case of an accident and reduces the required safety distances to other facilities.

Port & associated facilities

- The marine facilities will be located in the south-eastern corner of the Citronen Fjord, behind the small cape where adequate land areas for container and winter storage yards are available.
- The port facilities will comprise a pier head, two mooring dolphins, longitudinal moorings, access dike and land areas.
- Cranage equipment will be available for lift of twenty-foot equivalent unit (TEU) shipping containers
- A fixed shiploader has been selected for loading of vessels with lead and zinc bulk concentrate. The shiploader is designed to load vessels at a maximum rate of 2,000 t/h. The shiploader consists of a fixed belt conveyor, fitted with a weigh belt, which is loaded from the reclaim system and a movable belt conveyor.

- Container Storage: The container storage area and has a total area of 42,550 sq m. The prepared area will have a final drainage cross-gradient of four percent and will be covered with mechanically stabilised gravel. The thickness of the gravel layer will be minimum 0.5 m to build up permafrost in the underlying original soils.

Airport
- The airport facilities will be constructed in two stages. In Stage 1, a temporary airstrip will include lighting and navigation systems to enable operation on a 24 hour basis. It will have a 900 m runway for the operation of passenger/freight aircraft similar in size to the Twin Otter or DHC-7.
- In Stage 2, the temporary facilities will be upgraded to a permanent airstrip with a 1,500 metre runway to handle larger aircraft such as a Fokker 50. and Dash 8 (Q400).

Process Plant
- The process plant was designed by Metso and Wardrop and consists of a simple primary & secondary crushing/screening, dense media separation, grinding and flotation circuit to produce a separate zinc and lead concentrate.

Ironbark can confirm that the Mineral Resources underpinning the Production Target were prepared by a Competent Person in accordance with the requirements in Appendix 5a (JORC Code). Competent Person sign off was provided on p.5 of the 7th September 2020 announcement.

The Mineral Resources at Citronen underpinning the Production Target were listed on p.5 of the 7th September 2020 announcement.

Of the 37.8Mt underpinning the Production target:

	Underground	Open Pit	Total	%
Measured & Indicated	21,273,270	9,150,148	30,423,418	80.5%
Inferred	7,315,027	26,583	7,341,610	19.5%
Total	**28,588,296**	**9,176,731**	**37,765,027**	**100.0%**

A proportion of the Production Target is based on Inferred Tonnes and the accompanying Cautionary Statement stated on p.2 of the 7th September 2020 announcement (see "Cautionary Statement") is repeated here:

Please note that Production Targets within this announcement are based on a proportion of inferred resources. There is low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised. The estimated mineral resources underpinning the production targets were released to the ASX on 212 March 2020.

As announced on the 7th of September 2020, the key parameter change was a more conservative view of the Zinc price of USD1.20/lb compared to USD1.38/lb in 2017. Please see table under LR 5.16.1 above for further information on this and other changes from the 2017 FS.

With respect to three of the five key areas of the Study identified in the 7th September 2020 announcement not already addressed elsewhere:

- #2 – Mine Design including Sequencing, Scheduling and Ventilation Parameters

The Citronen design uses a cut and fill mining method presenting with two distinct orebodies, Beach and Esrum. The Beach orebody is divided in two mineralised horizons (termed Levels 2 and 3). The termed level 2 was named Beach Upper and the termed level 3 Beach Lower. The Esrum orebody only presents with mineable termed level 3. The three areas are accessed via a twin decline system (2017: single decline) that initially accesses the Beach Upper mineralisation, then Beach Lower and finishes in the Esrum mining area.

A detailed mine design was undertaken for a portion of the Beach mineralisation that presents a continuous and representative amount of measured material. The reasoning behind the detailed design was to demonstrate the suitability of the mining method. The rest of the mine was designed as blocks representing primary and secondary stopes. The blocks dimensions are approximately 20m x 20m and capture the grade of the mineralisation to an adequate level of detail.

The mine schedule prioritises the measured areas resulting in most of the material laying within the detail design areas being mined early in the life of mine.

The current mining method (cut and fill) is an optimisation of the previously selected method (room and pillar). Furthermore, it takes into consideration the current geotechnical parameters and mining practicalities.

The key driver of the mining method selection was the geotechnical assumption that all panels need to have the top (backs) supported. The presumption excludes options for longhole drilling methods, as the height of the production areas is relatively small (average of 6m), which excludes the possibility of developing a bottom drive for a panel. The mining method was optimised to follow the contours of the orebody mineralisation increasing recovery and reducing dilution. The new design will also help with mining productivity, as it reduces development issues and makes the backfill process easier.

Existing mine plans generated by Mining Plus in 2012 were used to define the main access decline position and its extension to the Esrum area. The accesses to the Beach area were modified to be suitable for the current design.

The Citronen mine will be accessed via a double decline, 5.0mWx6.0mH developed at a gradient of 1:7 (14 per cent). Along the decline stockpiles will be developed at approximately 150m intervals. The double decline creates a primary ventilation circuit as well as a second mean of egress while the drive is under development. During the operation, one of the drives will be used as access and the other a ventilation drive.

A twin decline system was designed to access the Citronen project mineralisation zones. The main reasoning behind choosing the twin decline system over a single decline with ventilation shafts is to introduce more flexibility on the ventilation system and increase development advance rates (90m-120m per month as in oppose to an average of 60m per month) allowing for earlier access to the Beach orebody and consequently earlier production. Twin decline systems permit higher rates as ventilation circuits can be generated as the decline advances, one decline will be used as an intake and the other as an exhaust. The system also allows for mining to happen on the beach area without stopping the decline development. Details of the ventilation commissioning are described in the Ventilation Requirements section.

Modelling of the ventilation circuit has been undertaken using Ventsim® software to determine operability and estimate the required primary fan duties. Key modelling considerations included:

- Airway sizes were drawn from the proposed design dimensions.
- Associated friction factors and resistances were based on excavation methodology and accepted industry design values.
- High-quality ventilation controls (doors, walls, etc.) were assumed.

To achieve the required volume both rise exhaust fans were set to 350m^3/s and the portal fan was removed, including losses the system exhausts a total of 700 m^3/s.

A total of six surface ventilation connections are planned for the final design; the two access declines, two return air raises and two fresh air raises. The declines will be used for fresh air and exhaust. All the exhausting airways will have primary fans to control the ventilation flow throughout the mine.

The mine is accessed from a boxcut portal from where a dual decline is developed. The dual decline advances for approximately 800m when there is a turn off to the north-east to access the Beach Upper zone and 110m further up to access the Beach Lower zone. It also continues advancing west to access the Esrum orebody. The mine sequence targets a constant increase in the ore tonnes as soon as possible until reaching steady-state production. The sequencing and scheduling of the mine were completed with Deswik mining software using a combination of Deswik.CAD and Deswik.Sched packages.

The sequence of mining in the different mineralisation areas follows geotechnical recommendations where the orebodies were subdivided into panels. The panels are of approximately 100 m in length and consist of 85m of stope blocks with a 15 m regional pillar. An access drive is developed from the main decline to access the mining panels. The stope blocks are mined leaving the regional pillars behind, these pillars are reclaimed after all stope blocks are backfilled and the backfill material has cured.

The mining rates used were based on previous studies done on the Citronen project and industry benchmark figures:

Activity	Rate	Comment
Access Drives	60 m/mo	
Backfilling	1050 m^3/d	
Backfill Curing	133 m^3/d	
Decline	60 m/mo	
Fresh Air Drives	60 m/mo	
Fresh Air Raises	60 m/mo	Raise Bored
Return Air Drives	60 m/mo	
Return Air Raises	60 m/mo	Raise Bored
Sumps	60 m/mo	
Stockpiles	60 m/mo	
Stope Benching	14110 t/mo	Calculated from first principles
Stope Mucking	11300 t/mo	Calculated from first principles

Production is targeted to produce 3.3Mt of ore and starts with the mining of the higher-grade Beach Upper zone. The start of production is determined by the time taken to develop from the portal down to the footprint elevation. After the footprint is accessed and the necessary development and materials handling system is completed, production can ramp up to the desired output. The main decline keeps advancing before it splits again to access the Beach Lower zone and this is the second zone to start mining of production panels. The Esrum orebody is located further to the West is the last orebody to be accessed.

- #3 – Mining Fleet Selection

Diesel equipment was selected due to the challenging conditions that will be experienced during mining, battery technology does not perform well in cold environments and diesel machinery has previously performed well in cold climates. The key aspects of the equipment selection were to minimise the number of machinery manufactures and select equipment that conforms to the clearance assumptions.

The drill selected was a Sandvik DD421-60C two boom jumbo with an enclosed operator cab. This class of machinery or equivalent can drill cross-sections from 8 - 60m2, up to just under 10 m horizontal and 6.7 m vertically.
The loading unit selected was a Normet Charmec MC605 or equivalent D(V) with an enclosed cabin and the winter kit addition, which is designed to charge faces up to 65 m2.The basket boom can cover an area of 8.8 mH and just under 10m wide so would need to move once during production charging of 10m wide faces.

Loading will be done with a Sandvik LH621i loader or equivalent, the “i” series by Sandvik is ready to be fitted with digitalisation add-ons and software if required. The loader has a 21t capacity, can operate down to -20oC and is designed for three-pass loading with the TH663i trucks.

The Hauling unit selected was the Sandvik TH663i 63-tonne articulated dump truck, designed to operate in conjunction with the LH621i loader and is fitted out with the possibility to upgrade to intelligent systems. This class of truck or an equivalent will be used for all hauling.

The Caterpillar 12F grader or equivalent equipped with a short blade and will be used to grade both the underground and surface haulage routes. A large IT will be used such as a Caterpillar 962K or equivalent, there is a large range of work tools and bucket styles that can be used with this machine. A MacCleans FL3 or equivalent will be used for a service truck, it can store up to 6,000 litres of diesel fuel, oils, grease and lubricants reducing the amount needed to be stored underground.

- #4 – Update the capex and opex estimates, and mining cost model
  - All mining related costs were rebuilt by Mining Plus from ground up, using 2020 contactor and input rates (as was detailed on p.4 of the 7th September 2020 announcement)
  - Updated Mining Capex: USD76m
  - Updated Mining Opex: USD36.90/t ore

As announced by the Company on the 14th of September 2020, the studied Zinc price of USD1.20/lb was selected by the Board of Ironbark as a conservative price relative to previously announced study work (USD1.38/lb), and the long term Zinc price forecast by Wood Mackenzie (USD 1.39/lb).

Given this conservative position, the Board of Ironbark elected to initially only run one-way sensitivities to demonstrate the upside potential of the deposit in a higher Zinc price environment given it's view that a price substantially below USD1.20/lb would (in its commercial view) would be difficult to justify a positive investment decision.

An updated view of this however has now been run, including downside sensitivities, and is now listed below:

		-25%	**-20%**	**-10%**		**+10%**	**+20%**	**+25%**
	Price	**0.90**	**0.96**	**1.08**	**1.20**	**1.32**	**1.44**	**1.50**
5.3% Zn COG	**M Tonnes**	9.7	11.9	14.8	18.3	21.8	26.0	28.5
4.0% Zn COG	**M Tonnes**	24.2	27.8	32.2	37.7	43.2	49.7	53.6

The current date for the Mineral Resource Estimate is 12 March 2020.

The life of mine re-optimised concentrate production schedule includes:

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Zn concentrate kt	0	35	285	380	350	300	296	304	237	221	226	155	145	45
Pb concentrate kt	0	2	19	21	19	14	15	16	14	13	19	19	19	5

The total Project Cost for the Citronen Project as cited in the 2017 Feasibility Study is listed below:

Area	Description	Cost (US$)
Direct Works		
1000	Mining - Surface Infrastructure	619,978
1100	Mining - Open Pit Pre-production*	8,901,367
1500	Mining - Underground Pre-production	54,856,986
2000	Crushing Plant & Fine Ore Feed	14,368,552
2400	Process Plant	103,414,924
2800	Concentrate Storage/Reclaim	10,363,591
3000	Tailings and Water Management	18,339,487
4000	Plant Site	24,631,893
4500	Site Power and Heating	42,720,951
5000	Port Facilities & Storage	18,893,114
6000	Infrastructure	12,555,212
6500	Site Services & Utilities	5,723,987
8500	Temporary Services	12,385,072
	Direct Works Total	**327,775,114**
Indirect Works		
9000	Construction Indirects	29,906,451
9100	Project Indirects	103,482,495
9200	Owners Costs	17,390,000
9900	Contingencies	35,654,584
	First Fills	excluded
	Indirect Works Total	**150,778,946**
	Total	**514,208,644**

There have been no material changes to this estimate since 2017, with the re-optimised 2020 Mining Capital Cost estimate of USD 76m vs. USD64m in 2017 (per the above table, rows 1000-1500) resulting in only a 2% change to the overall Project cost.

As was stated in the 2017 Feasibility Study, there are no assurances that Project finance will be obtained. However, Ironbark believes there are reasonable grounds that the approximate US$514 million in initial capital required to develop the Project, plus working capital of approximate US$50 million for first fills and commissioning costs to be incurred prior to first receipt of sales proceeds, will be funded on the basis of the following:

- The Company has completed a Feasibility Study in April 2013, this was re-costed & updated in 2017 and further studies are now taking place in 2020
- Ironbark has a highly experienced management and operations team with significant experience in developing and operating mines.
- The Citronen project and 100% of the Resources and Mining Inventory are located on a granted Mining Lease.
- Ironbark owns 100% of the Citronen Project.
- Ironbark's historic MOU with China Nonferrous (NFC) remains in effect
- The Citronen Project's location in Europe makes it a candidate for European Export Credit Agency (ECA) finance funding as well as traditional debt and equity financing options.
- Ironbark has major base metal industry shareholders and offtakers in Glencore AG and Nyrstar NV
- Financing for the construction of the mine Plant and infrastructure required for the Project to achieve the production targets outlined in this report has not yet been secured, which is typical for a project at this stage.
- Citronen financial model makes no assumption about the source of financing, however, it will likely be a mix of debt and equity funding. Ironbark will consider a range of financing alternatives outside of regular debt and equity

sources, including potential equity-sharing arrangements with future offtake partners, mine contractors or other interested parties, as well as the potential for further forward sale of metals.
- Capital, mining and processing costs are well understood.
- The Project is located in the favourable mining jurisdiction of Greenland, which has a history of zinc and lead mining and has been awarded a Mining Licence.
- The Project hosts attractive key commodities of zinc and lead which are both expected to have continuing strong global role into the near future.
- Ironbark has always been able to raise equity capital over its listed history to fund its mineral exploration and project development activities.
- The Board and senior management of Ironbark have experience in financing and developing mining projects in Australia and overseas and have an appropriate mix of skills and expertise to oversee and direct the progression of the Project through to a decision to mine.

Investors should note that there is no certainty that the Company will be able to secure the amount of funding required. Given the uncertainties involved, investors should not make any investment decision based solely on this announcement.

Ore Reserve Announcement - Clarifications

Date of Ore Reserve

The study underpinning the maiden Ore Reserve was completed in September 2020.

Mineral Resource Underpinning Ore Reserve

The current date for the Resource Estimate at the Citronen Project is 12 March 2020. Ironbark confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcement, and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

Classification into Proved & Probable Reserves

The classification of the Ore Reserves into various confidence categories was a decision of the Competent Person in light of the substantial body of historic drilling, metallurgical testwork, geotechnical studies, capital and operating cost estimates and recent mine optimisation planning work done on the Project. The conversion ratios from Measured and Indicated Mineral Resources into the Proved and Probably categories are inside industry norms.

Permitting

In December 2016, the Greenland Government awarded Ironbark an Exploitation Licence 2016/30 (Mining Permit) for the Citronen Project. The licence provides Ironbark with the right to exploit for a period of 30 years.

Mining in Greenland is regulated by the Mineral Resources Act, December 2009. The Act aims to ensure that activities under the Act are securely performed with regard to safety, health, the environment, resource exploitation and social sustainability as well as performed according to acknowledged best international practices under similar conditions.

In order to advance its exploration licence into an exploitation licence, Ironbark applied to the MLSA for the exploitation licence pursuant to the provisions given in S.16 of the Act. The application for an exploitation licence was accompanied by a number of documents, including:

- A declaration that the deposit at Citronen Fjord is commercially viable and that Ironbark intends to exploit the deposit.
- A Feasibility Study of the Citronen Fjord deposit on which the declaration is based
- An Environmental Impact Assessment.
- A Social Impact Assessment, including an Impact Benefit Agreement with the public authorities.

The SIA and EIA were submitted to the Greenland Government in June 2016 and July 2016 respectively. Following that, negotiations were held between Ironbark and the four municipalities in Greenland to develop an Impact Benefit Agreement (IBA). The IBA will contribute to developing the Greenlandic mineral-resources sector in many different areas, and aims at ensuring Greenlandic jobs, involvement of Greenlandic enterprises, and skills upgrades for the Greenlandic workforce.

Infrastructure

There is no existing infrastructure at the site and consequently all infrastructure and ancillary facilities need to be developed as part of the project. The infrastructure required for the Citronen Project are:

Haul & Service Roads

Roads will be established as privately financed roads and are to be used solely for mining works at Citronen. They will be designed, constructed and maintained in accordance with established mining industry practice. Horizontal alignment will have a minimum radius down to 150 m for haul roads, and down to 20 m for service roads. The maximum longitudinal grade is 8% for haul roads and 12% for service roads. The general cross sections are based on normal road building practices in arctic areas. The road substructure will generally be constructed with locally excavated soil reclaimed as part of cutting or from nearby borrow pits, depending on the earthworks balance. Culverts will be designed and placed to allow melting water and rainwater to cross the roads. Culverts will be constructed with steel pipes. Haul roads required include open pit to run-of-mine (ROM) pad (approximately 3,880 m) and to portal location (approximately 200 m). The dominant traffic on haul roads will be heavy off-highway trucks. The dominant traffic on service roads will be four-wheel drive multi-purpose vehicles (MPVs), off-roaders, and small to medium size trucks and fuel trucks. Service roads will be 3.5 m wide single-lane gravel roads. The total width of the roads will typically be 5.0 m, inclusive of shoulders. During the detailed design phase, a risk assessment will be carried out to determine where safety bunds are needed. They will be constructed according to general practice for mine haul roads, i.e. with the minimum height of berm being 0.5 x biggest wheel diameter.

Site Service & Utilities

- Fresh water will be sourced from a naturally occurring lake (Lake Platinova) and will be pumped to the process plant and the water treatment plant at the main warehouse. Treated water will then be pumped to the camp and administration facilities. With an expected manpower of 250 persons at Citronen, approximately 35 m^3/d of potable water is required. A small containerised treatment plant is proposed for the treatment of 40 m^3/d of lake water.
- Fire Protection Systems: The plant site facilities will be protected with a pressurised fire protection system comprising a fire water reserve, an electric driven jockey pump, an electric driven fire pump and an emergency diesel driven fire pump. The fire water reserve will be contained in a dedicated portion of the raw water tank in the process plant.
- Sewage Treatment & Disposal: Sewage and waste water from buildings at the plant site will be sent to the sewage treatment plant. Dry closets will be used at the airport building. The sewage treatment plant will be a standard containerised solution which can treat approximately 40 m^3 of waste water per day. Effluent from the camp site will be carried to the sewage treatment plant through pipelines running below the arctic corridors to the main warehouse. Effluent from waste water will go into the process plant.
- Incinerator & Hydrocarbon Waste Facility: An incinerator capable of dealing with combustible waste, lubricants, fuel and oil will be installed in the main warehouse. Installation in the warehouse will reduce the need for heating due to utilisation of the radiant heat from the combustion chamber. The incinerator cannot be used for burning larger metal parts, batteries or chemical waste. These types of waste will be collected and stored for later disposal off site. The incinerator has fully electronic-controlled burners with automatic spark ignition and safety devices. It is controlled by two temperature controllers and the operating temperature is 850-950°C, which should ensure clean emissions.
- Lighting & Area Lighting: Indoor lighting will be designed according to National Danish Code DS 700. For area lighting, LED lighting fixtures have been selected and are assumed to be LED Light-type “CrystalLed” with 72 LEDs. The CrystalLed fixture is preferred as it has a life expectancy of more than 80,000 hours and the relative high output of more than 100 lm/W.
- Site Control System & Communications: A fibre optic network will be installed around the site to facilitate plant control system and communication between process areas. The fibre network will also be utilised for the process of closed circuit television (CCTV) system signal transmissions. Generally, the network routing will follow that of the site power distribution. A programmable logic controller (PLC) based system will be used for monitoring and control of the entire site. PLC input/output (I/O) cabinets located in electrical rooms throughout the plant will be used to interface all field instrumentation, equipment and motor controls. Citronen is located above 83°N and has limited satellite exposure. External communications will be provided by Iridium Communications Inc. (Iridium), as this is the only option available.

Power Supply & Distribution

- Plant Power Generation: Electricity production and supply will comply with Greenlandic electrical regulations and will be based on European standards with 50 Hz frequency and 400/230 service voltage. The required power consumption of approximately 23 MW will be met by a total of six generator units, with four in operation and two on stand-by duty/ maintenance. The generators will be medium speed units rated for continuous operation in an arctic environment for a service life of at least 25 years.
- Power from the generator plant is delivered at 6.9 kV throughout the facilities. Substations are complete with step-down transformers (6.9/0.4 kV) and are rated 200 kW, 500 kW or 1,000 kW, depending on the requirements at each substation. The substations will be located centrally within areas (to be determined at the appropriate time), where practical, to minimise distribution losses.

Fuel Storage

The fuel storage area consists of:

- two tanks each with a capacity of 25,000 m^3 fuel for arctic diesel
- two tanks each with a capacity of 250 m^3 jet fuel
- hose station and lines
- pipelines for both arctic diesel and jet fuel
- fuel station for arctic diesel

Plant Site

- Administration and Mine Dry Buildings: The buildings will be constructed from pre-fabricated modules. They will be elevated from the ground, integrated with the main warehouse and will be part of the walkway system between the camp and the process plant.
- Main warehouse and Plant Workshop: The main warehouse and plant workshop will be connected directly to the administration building and to the process plant via arctic corridors that form part of the walkway system between the process plant and the camp. Access from the service road will be through a four metre by three metre door into the warehouse section via an air lock. The warehouse will be serviced by indoor forklifts. There is no provision for an overhead crane within the building. The structure will be steel framed with steel cassettes for the roof and insulated panels for cladding. The floor and foundations will be reinforced concrete. The building will be placed on a gravel pad including insulation to preserve the permafrost.
- Truckshop: The truckshop building will be a pre-engineered steel structure 98 m long by 21 m wide with 10.5 m height to underside hook of an overhead crane. The structure will be clad with insulated metal roof and wall sandwich panels.
- Accommodation complex: The camp is designed to accommodate 290 people based on an 8+1 concept and comprises eight accommodation blocks spread around a central reception block. This layout was selected to enable camp residents to access central facilities through small connection corridors without having to go outdoors.
- Arctic corridors: Arctic corridors will be used for the connection of the accommodation blocks and centre building in the camp, centre building and administration/dry/main warehouse and main warehouse and the process plant. The corridors will also be utilised for distribution of services such as water, heating and electricity. Sewage pipes will run below the corridors. The corridors will be constructed from prefabricated modules elevated from the ground similar to the camp. The corridors are heated by glycol systems to a temperature of +5°C and exterior doors are heat traced to ensure they will open and close.

Heating, Ventilation and Air Conditioning System

- Due to the on-site climate conditions, it is necessary to provide heating to the plant site buildings to enable regular maintenance and operations to be carried out. The heating, ventilation and air conditioning (HVAC) system will utilise waste heat recovered from the power plant.

Explosives

- Ammonium nitrate and fuel oil (ANFO) will be mixed on-site. The required storage capacity will correspond to one year's use of explosives requiring 2,000 t of ANFO.

- The use of two explosives magazines instead of one ensures a supply of explosives in case of an accident and reduces the required safety distances to other facilities.

Port & associated facilities

- The marine facilities will be located in the south-eastern corner of the Citronen Fjord, behind the small cape where adequate land areas for container and winter storage yards are available.
- The port facilities will comprise a pier head, two mooring dolphins, longitudinal moorings, access dike and land areas.
- Cranage equipment will be available for lift of twenty-foot equivalent unit (TEU) shipping containers
- A fixed shiploader has been selected for loading of vessels with lead and zinc bulk concentrate. The shiploader is designed to load vessels at a maximum rate of 2,000 t/h. The shiploader consists of a fixed belt conveyor, fitted with a weigh belt, which is loaded from the reclaim system and a movable belt conveyor.
- Container Storage: The container storage area and has a total area of 42,550 sq m. The prepared area will have a final drainage cross-gradient of four percent and will be covered with mechanically stabilised gravel. The thickness of the gravel layer will be minimum 0.5 m to build up permafrost in the underlying original soils.

Airport

- The airport facilities will be constructed in two stages. In Stage 1, a temporary airstrip will include lighting and navigation systems to enable operation on a 24 hour basis. It will have a 900 m runway for the operation of passenger/freight aircraft similar in size to the Twin Otter or DHC-7.
- In Stage 2, the temporary facilities will be upgraded to a permanent airstrip with a 1,500 metre runway to handle larger aircraft such as a Fokker 50. and Dash 8 (Q400).

Process Plant

- The process plant was designed by Metso and Wardrop and consists of a simple primary & secondary crushing/screening, dense media separation, grinding and flotation circuit to produce a separate zinc and lead concentrate.

Trading Halt/Voluntary Suspension

This is the announcement referred to in the request for Trading Halt on 15 September 2020 and subsequent request for Voluntary Suspension on 17 September 2020.

Further Details

This notice is authorised to be issued by the Board.
Please contact Managing Director Mr. Michael Jardine for any further inquiries on either mjardine@ironbark.gl or +61 424 615 047.