



ASX: HFR

8 December 2021

MUGA FEASIBILITY STUDY: COMPELLING ECONOMICS RECONFIRMED FOLLOWING ADVANCED ENGINEERING

HIGHLIGHTS

Highfield Resources (ASX: HFR) (“Highfield” or the “Company”) is pleased to provide an update to the Muga-Vipasca Potash Project (“Muga” or the “Project”) Feasibility Study that reconfirms the compelling economics of the Project.

- NPV₈ of €1.89 billion and 25% IRR
- Sensitivity analysis using current flat real spot prices for the whole life of mine results in a post-tax NPV₈ of €2.8 billion and a 42% IRR
- At full production, EBITDA of around €400 million per annum
- Economics resulting in a 30-year mine life
- The Feasibility Study is based on significantly more advanced engineering and procurement: in the current Study, 86% of the capex estimate is based on signed contracts, firm offers and updated prices. Compared with 59% in the previous feasibility study update from 2019
- Higher degree of confidence in the updated capex numbers with:
 - phase 1 capex of €398 million
 - phase 2 capex of €209 million
- The Company continues to work with its Financial Advisor, Endeavour Financial, to secure an appropriate financing for Phase 1. Based upon its assessment of the Muga Project and following positive feedback on a draft term sheet by a potential syndicate of lenders, the Company is targeting debt sizing of around €300m to start construction of phase 1.

Cautionary Statement. *The production target set out in this update is derived from Proved and Probable Ore Reserves, additional Measured, Indicated and Inferred Mineral Resources from the Muga-Vipasca tenement as well as the Exploration Target at the Vipasca and Muga Sur tenements. There is a 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 potential quantity and grade of an Exploration Target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised. The technical parameters underpinning the Mineral Resource in the market announcement dated 30 March 2021 and the*



Exploration Target in the market announcement dated 23 November 2021 continue to apply and have not materially changed.

Ignacio Salazar, CEO, commented: “We are delighted to announce an up-to-date Feasibility Study for the Muga Project. Potash is a great commodity with very strong global prices and exceptional long-term fundamentals. This Feasibility Study Update reconfirms Muga’s outstanding economics, and the effect on revenue of current spot prices would multiply returns. The updated numbers have been prepared with a significantly higher degree of confidence following all the engineering and procurement work of the last few months. With supportive shareholders, potential strategic investors and a significant debt capacity, Highfield is well positioned to finance Muga. The team is ready to progress Muga into construction and realise the intrinsic value of this Project.”

Mine plan

The 2021 Mine Plan is based on the Proved and Probable Ore Reserves as well as the abutting Exploration Target as per the ASX announcement released on the 23 November 2021 (refer ASX, “Updated Ore Reserve Estimate – Muga Project”) and the additional Measured, Indicated and Inferred Mineral Resources audited by SRK Consulting (“SRK”) as per the ASX release on 30 March 2021 (refer ASX, “Annual Report to the stakeholders”).

The summary description of Ore Reserves, Mineral Resources and Exploration Target for the Muga Project are included in Appendix 1.

The revised mine plan used in this updated Feasibility Study was developed by Highfield with technical mine planning support from the Spanish mining engineering consultants, IGAN Consulting Group. The portion of the plan that supports the Ore Reserve has been reviewed by SRK who incorporated various capital and operating cost sensitivities into their assessment so as to confirm its robustness.

Table 1 below describes the various sources that are included in the 2021 Mine Plan.

TABLE 1: SOURCE OF 2021 MINE PLAN TONNES

	Reserves, Resource or Exploration Target		Sources of tonnes included in the 2021 Mine Plan	
	Million Tonnes	Grade %K ₂ O	Million Tonnes	Grade %K ₂ O
Proved and Probable Ore Reserves	104.3	10.2	104.3	10.2
Measured and Indicated Resources	30.9	11.8	11	12.9
Inferred Mineral Resources¹	45	10.3	16	10.8
Exploration Target²	80 to 130	8-10	43	10

The Inferred Mineral Resources¹ and Exploration Target² tonnes included in the Mine Plan relate to areas which achieve minimum thickness and grade and are prospective for extraction with the current

¹ There is a 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..

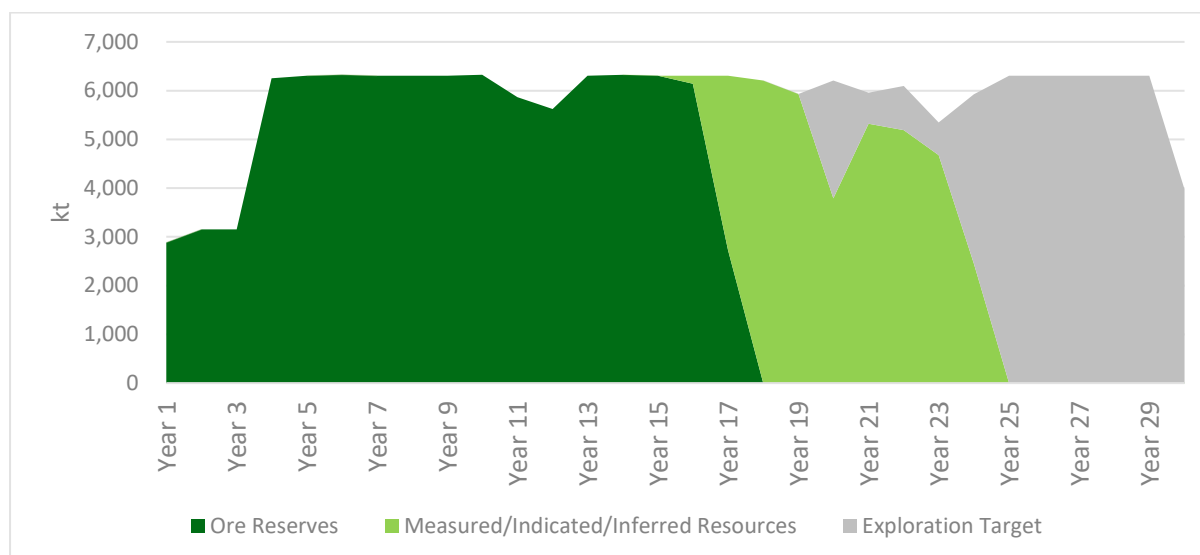
² The potential quantity and grade of an Exploration Target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised.



mine design. Regarding the Inferred Resources, specific areas with thickness greater than 1.6 m have also been considered given it has the potential to be mined with low profile equipment. The Measured and Indicated Resources included in the Mine Plan refer to the pillars in the exclusion zones under towns and the Bardenas Channel. Geocalci considers that these could potentially be mined in the future if and once the backfilling provides enough support to demonstrate there will be no impact on the surface.

The 2021 Mine Plan assumes the delivery of approximately 1,000,000 tpa of Muriate of Potash (“MOP”) over a mine life of 30 years³ comprising approximately 18 years of mine life from Ore Reserves and 12 years from additional Mineral Resources and the Exploration Target. The sequencing of the mine plan can be seen in Graph 1 below.

GRAPH 1: 2021 MINE PLAN SEQUENCING ROM TONNES PROCESSED



Mining

Underground access will be by twin parallel declines from surface (in pink in Figure 1 below), over a length of 2.6 km to a depth below surface of approximately 350 metres. The declines, approximately 25 metres apart along their length, are connected by three crosscuts. The West decline will be developed with a bolter-miner (see Figure 3 below) using continuous haulage systems to transport mined material to surface and the East decline with road-headers. The same type of equipment will be used to develop underground infrastructure including workshops and service areas such as emergency evacuation chambers, pumping stations and electrical rooms.

The potash seams are constrained by a minimum mining height of around 2 metres which is consistent with the planned mining equipment. The shallow dipping seams have been detailed designed, utilising

³ This production target must be read in conjunction with the cautionary statement on page 1 that “there is a 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” and that “the potential quantity and grade of an Exploration Target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised. The technical parameters underpinning the target in the market announcement dated 23 November 2021 continue to apply and have not materially changed.”



a set of two parallel roadways as the main development access, one for fresh air intake and access and the other for exhaust ventilation and both with conveyor belt materials handling systems. The mining method approach is a typical Room and Pillar (“R&P”) panel layout. The room width is specified at 8 metres and the height and pillar size is determined by the total combined seam thickness, geotechnical constraints due to depth below surface and/or any equipment limitations (see “Production panels shallow dipping seams” in Figure 1 below).

The more steeply inclined potash seams in the north west of the deposit required an alternative mining approach to the R&P panel layout used for the shallow dipping seams, to minimise dilution and maximise extraction, taking into consideration the geotechnical constraints and equipment limitations. For that area, a panel has been designed and the extraction ratio has been applied considering geotechnical constraints due to the seam thickness, depth below surface and/or any equipment limitations (see “Production panels inclined seams” in Figure 1 below). An adaptation of the existing R&P method was considered for developing a practically achievable inclination for the roadways and mining rooms while maintaining the same production targets and utilising the same excavation, material handling and backfill approach.

The production will be supported by auxiliary machinery e.g. roof bolters to ensure roof stability in abnormal areas, and LHDs (Load Haul Dump loaders) to load and dump material to intermediate storage points. The pillar design has been assessed to provide an optimal extraction ratio while maintaining ground stability to ensure safe working and environmental conditions.

FIGURE 1: 2021 MINE PLAN DESIGN FOR MUGA

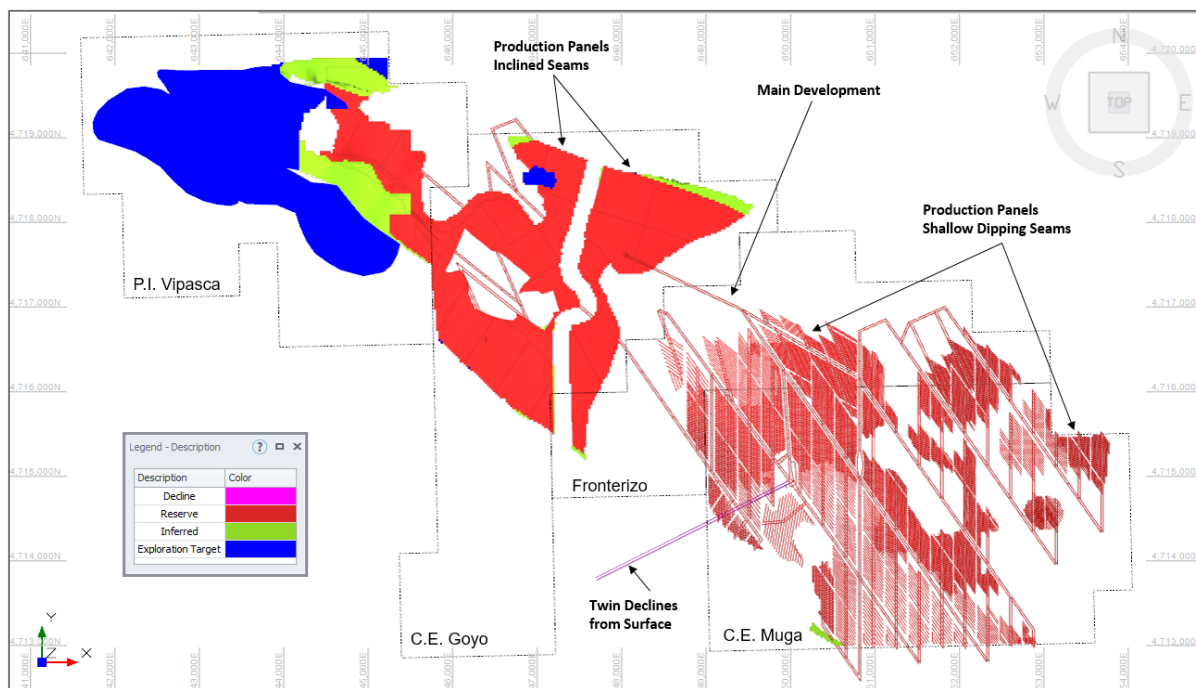
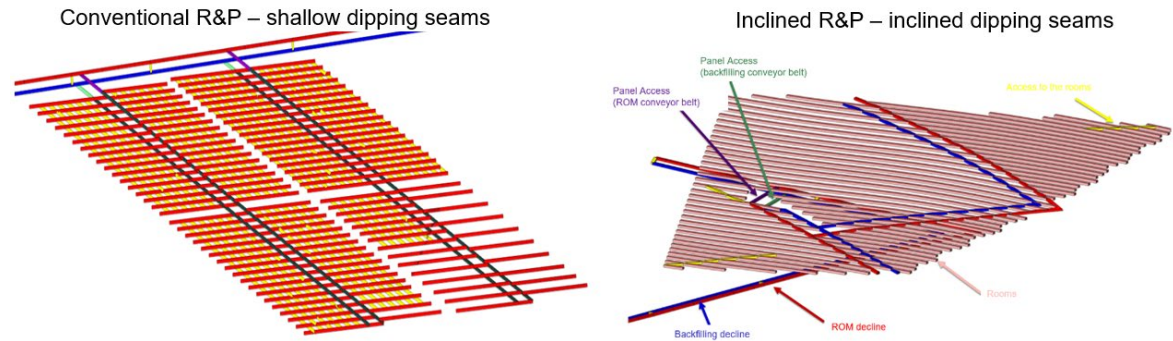




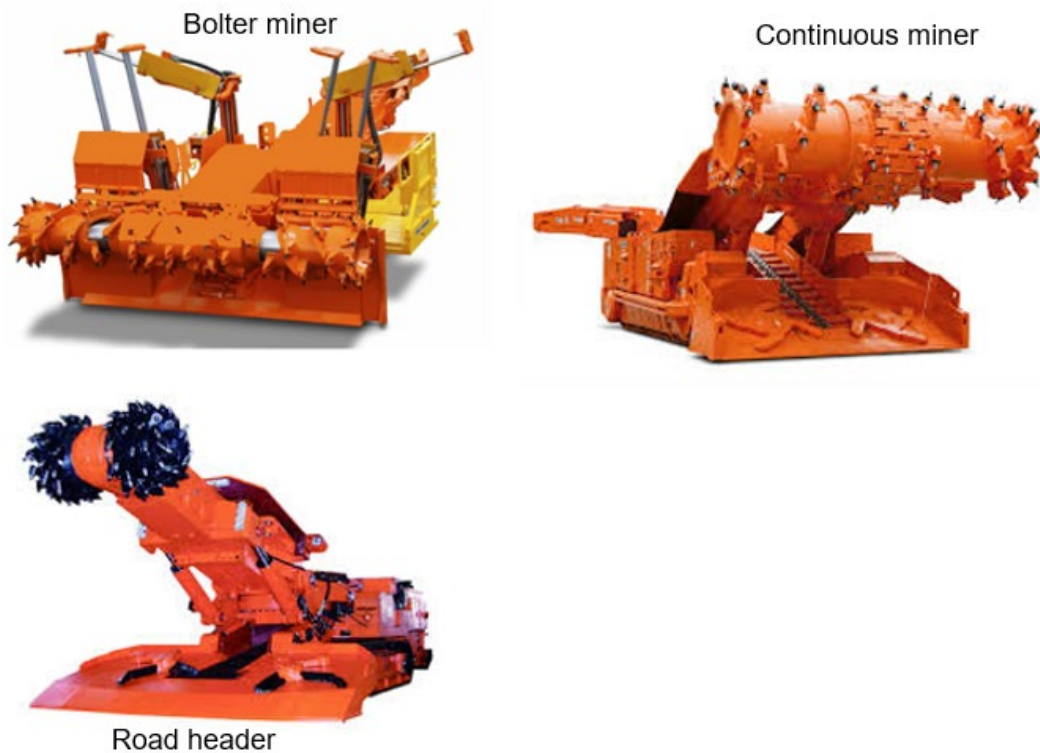
FIGURE 2: CONVENTIONAL AND INCLINED ROOM AND PILLAR PATTERN MINING



Ore will be loaded directly from the road header or continuous miner to electrical cable tethered shuttle cars that will tram the ore to a crusher and then onto conveyor belts. At this point the ROM ore will be transported via a series of conveyors to the underground silos, and then to the surface via the East decline conveyor.

Road headers can be used in conjunction with continuous miners (see Figure 3 below) due to their increased ability to mine selectively at the mining face. This is especially important in terms of position, thickness and grade.

FIGURE 3: BOLTER MINER, CONTINUOUS MINER AND ROAD HEADER



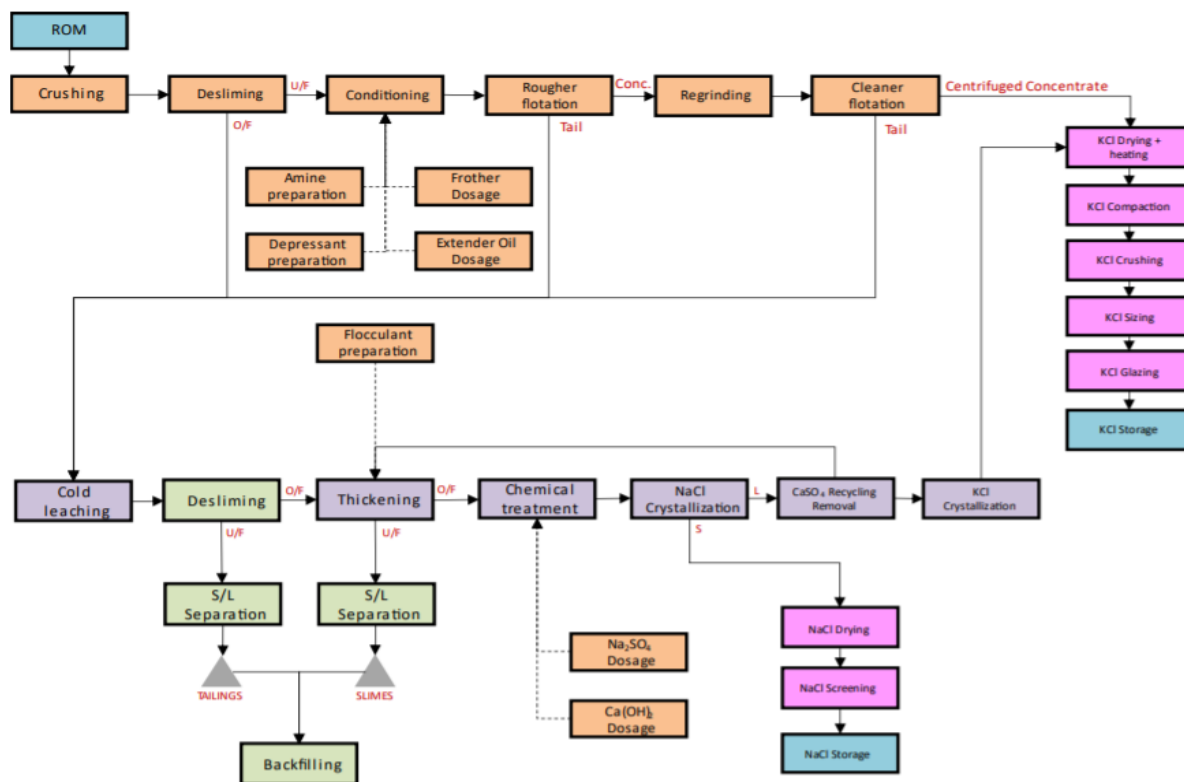


Processing

With purchase contracts signed for 85% of the process plant equipment (refer ASX 21 September 2021, “Purchase Contract Signed for Process Plant Equipment”) the Project is advancing towards construction readiness. The completion of the procurement of main equipment will provide equipment engineering to finetune and optimise detailed engineering of the processing plant.

Since 2019, some minor adjustments have been introduced to the process, including updated potassium chloride (KCl) leaching efficiency on coarse particles based on testing conducted by KUTEC Engineering (Germany), as well being confirmed by GEA Engineering tests, that crystalliser product grades are 98% for KCl and 99.8% for vacuum salt. Cooling towers have also been introduced to ensure optimal performance of the crystallisation plant independently of climatic conditions. These results have been included in the financial model.

FIGURE 4: BLOCK DIAGRAM OF THE PROCESS



The final process is presented in the above block diagram (Figure 4 above). ROM ore is crushed to the determined liberation size, attritioned and deslimed to separate insoluble particles and then conditioned prior to rougher flotation. Rougher concentrate is reground and transferred to the cleaner flotation in a column to obtain the final flotation concentrate. Slimes, rougher tails and cleaner tails are cold leached prior to solid/liquid separation to remove final tails and slimes. The resulting KCl-concentrated brine is treated to remove magnesium and fed to the crystallisation unit, where both vacuum salt and a high grade KCl product are obtained.



KCl product from the crystalliser is mixed with flotation product before being fed to the dryer, where moisture is reduced to prepare the material for compaction and glazing.

All the data obtained from testing, including the updates described above, have been entered into SysCAD®, a process simulation software used globally for potash applications, to generate an updated mass balance and recovery estimation that accounts for every stream in the process, resulting in a recovery average of around 91 % KCl. The SysCAD® model provides a more accurate and advanced estimation method than the one used in 2019.

The Syscad® generated mass balance is calculated for a final product with a grade in excess of 95% KCl, which is the standard required for Fertilizer-Grade Muriate of Potassium (equivalent to the market required K60 MOP), saleable into global markets.

These updates are all integrated in the site layout as shown in the Figure 5 below:

FIGURE 5: PROCESS PLANT SITE LAYOUT, GRINDING, FLOTATION AND CRYSTALLISATION PLANT



Project Timetable

The Project schedule assumes that construction will commence in the first half of 2022 following the preparation for construction. The preparation for construction assumes:

- 1) Agreement is reached on the construction contract and maximum price with construction partner
- 2) Successful procurement of long-lead items
- 3) The award of local town hall construction licenses
- 4) Finalisation of the debt package, that the Company is running in conjunction with Endeavour Financials.



CAPEX

Significant progress in detailed engineering as well as in contracting and procurement has provided a higher degree of confidence in updated:

- phase 1 capital expenditure of €398 million
- phase 2 capital expenditure of €209 million

Capex for Phase 1

The assumed capital and operating costs used to report the Ore Reserve estimate (refer ASX 23 November 2021, “Updated Ore Reserve Estimate – Muga Project”) are seen as being robust given they are based on the Company’s signed agreements with contractors, detailed quotes, or estimations made by the Company and its third-party consultants. The capex estimate includes firm, recent quotations for capital plant, budget prices from manufacturers, measured quantities and tested market rates. A small number of items were estimated from all-in rates based on ratios (e.g. earth moving costs estimated based on cubic metres of earth at a per metre rate). The source of pricing is shown in Graph 2 and Table 2 below.

GRAPH 2: CAPEX BY SOURCE OF PRICING

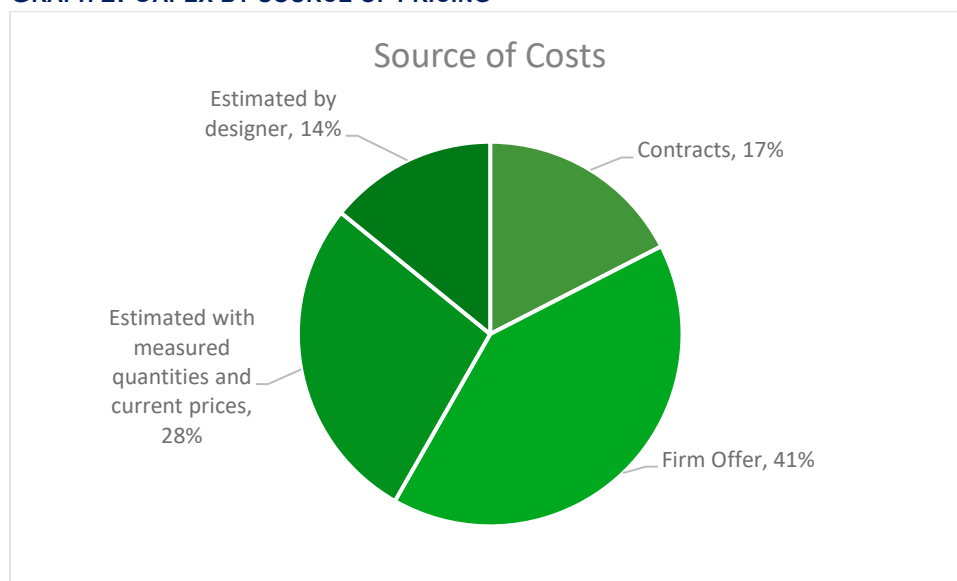


TABLE 2: CAPEX BY SOURCE OF PRICING AND DATE OF ANNOUNCEMENT

Source of Costs	2021	2019
Signed Contracts	17%	0%
Firm Offer	41%	47%
Estimated with measured quantities and current prices	28%	12%
<i>Estimated by designer</i>	14%	41%
Total	100%	100%



TABLE 3: CAPEX BREAKDOWN FOR PHASE 1 OF THE MUGA PROJECT (AND DATE OF ESTIMATES)

CAPEX BREAKDOWN (€ million)	8 December 2021	14 October 2019
Preliminaries	16.88	3.43
Underground Capex incl. backfilling infrastructure	75.04	83.00
Above ground civil works	39.96	41.51
Facilities buildings	5.26	Included in civils capex
Process Plant Capex	165.97	151.58
Dewatering and backfilling plant	31.33	17.23
Utilities	16.96	13.39
Indirect Costs	30.27	42.63
Pre-production Costs	16.28	14.84
	397.96	367.62

Capex for Phase 1 and 2

The updated Capex estimate for both Phase 1 and 2 totals €607 million which is a modest increase from the €576 million reported in October 2019 (refer ASX, 14 October 2019, “Quarterly Activities Report and Appendix 5B”) and in the clarification document published in November 2019 (refer ASX, 21 November 2019, “Further Clarification – Muga Project”).

The main change is due to cost inflation, though this has been partially offset by design savings. In addition, early procurement allowed the Company to mitigate part of the most recent inflation pressure in the markets.

The Company believes there is still some scope to optimise and reduce initial Capex for example though the use of contract mining.

FINANCING

In 2017, the Project received initial credit approval from a syndicate of international lenders for a project finance facility of €185 million. Since then, the Company has continued to de-risk the Project. The result is a Project which is more economically robust, has a lower technical risk profile and has a significantly more socially and environmentally sustainable footprint.

The Company continues to work with its Financial Advisor, Endeavour Financial, to secure an appropriate construction financing package for Phase 1 of the Muga Project.

Based upon its assessment of the Muga Project, including further project de-risking, and improved potash and salt market fundamentals, and following initial discussions and positive feedback on a draft term sheet by a potential syndicate of lenders, the Company is targeting debt sizing of around €300m.

Furthermore, the Company is encouraged by initial discussions with certain strategic investors that have shown an interest in financing the development of the Muga Project. The nature of these discussions would be complementary to the senior debt but such discussions remain at an early stage and hence no certainty can be provided on their outcome at this stage.



On behalf of potential lenders, consultants are currently undertaking in-depth technical, social, environmental and market due diligence on the underlying Project documentation provided by the Company. The Company expects to negotiate a detailed term sheet with a syndicate of potential lenders and proceed with the formal credit and approval processes at the start of 2022.

PROJECT ECONOMICS

The updated parameters are based on more advanced engineering and a more robust mine plan which provide a higher level of confidence in the fundamental project assumptions. This update has reconfirmed the fundamentals of the Project with an NPV₈ of €1.89 billion and an IRR of 25%.

All other parameters underpinning these updated numbers, including recoveries, salt by-product production, foreign exchange rates and potash prices, have all been updated as set out below. There are no mining royalties payable under Spanish law, therefore no mining royalties are considered as part of the review of the Ore Reserve estimate.

TABLE 4: PROJECTED FINANCIAL METRICS FOR MUGA PROJECT (REAL TERMS UNLESS STATED OTHERWISE)

	8 December 2021	14 October 2019
CAPEX phase 1 (500,000 tpa MOP)	€398 million	€368 million
CAPEX phase 2 (Additional 500,000 tpa MOP)	€209 million	€208 million
Total CAPEX	€607 million	€576 million
ROM tonnes	173.7 million	179.8 million
Average plant tonnage feed rate	800 tph	800 tph
K₂O grade	10.5%	10.7%
KCl recovery	91%	94%
LOM MOP production⁴ in tonnes	27.5 million	30.1 million
LOM MOP potash prices⁴	€440/t	€438/t
Foreign exchange Euro:USD	1:1.12	1:1.09
De-icing salt production	8.5 Mt	11.4 Mt
Vacuum salt production	15.9 Mt	15.2 Mt
C1 cost (€/t)		
Mining	39	34
Processing incl. waste and backfilling	66	60
Environmental and G&A	11	10
Sustaining capex	6	8
Salt by-product credit	(46)	(30)
Total (at mine gate)	€76	€82
Tax rate (Navarra)	28%	28%
Life of mine⁴	30 years	30 years
NPV₈	€1.89 billion	€1.97 billion

⁴ Cautionary Statement. The production target set out in this update is derived from Muga Proved and Probable Ore Reserves and Inferred Mineral Resources from the Muga-Vipasca tenement as well as the Exploration Target at the Vipasca and Muga Sur tenements. There is a 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 potential quantity and grade of an Exploration Target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised. The technical and financial parameters underpinning the target in the market announcement dated 23 November 2021 continue to apply and have not materially changed.



NPV₈	US\$2.12 billion	US\$2.14 billion
IRR	25%	25%

The largest impact on the NPV has been the change in exchange rate from 2019 as can be seen in Table 5 below:

TABLE 5: NPV AND IRR COMPARISON

Improvements	NPV₈ (€ billion)	IRR
2019 ASX Model	1.97	25%
Potash Prices	0.02	0%
Recovery	-0.08	-1%
Grade	-0.09	-1%
Vacuum Salt prices	0.09	1%
Deicing salt prices	0.03	1%
Exchange rate	-0.10	-1%
Costs/other	0.05	1%
2021 December	1.89	25%

Market pricing assumptions

Given changes in the potash market and prices since October 2019 and November 2019, with prices increasing considerably, the current European delivered spot price is around €575/t and the Brazil delivered spot price is currently around US\$800/t, compared to an average price of €440/t used in this feasibility study over the life of mine. The potash prices used in the financial modelling have therefore been updated and are now based on the recently released September 2021 forecasts from the independent research company CRU Group (“CRU”). The potash price forecasts in the model are only modestly higher than those used in 2019 (€440/t vs €438/t) given the long-term fundamentals of the market have not significantly changed. The potash price forecasts also include the effect of updating foreign exchange rates to reflect current levels, as potash price forecasts are expressed in US dollars as seen in Table 4 above.

The salt by-product credit is based on a forecast by Argus Media’s most recent salt prices and continue to reflect the commercial production of vacuum salt as well as de-icing salt. The mine gate sales price is €36/tonne for de-icing salt and €55/tonne for vacuum salt.

The destination sales strategy is based on 50% of the total phase 1 and 2 production is assumed to be sold into local and regional markets, with 25% sold into northern European markets and 25% to export markets. This has not changed from the strategy used in 2019 (refer ASX, 14 October 2019, “Quarterly Activities Report and Appendix 5B”) and in clarification document published in November 2019 (refer ASX, 21 November 2019, “Further Clarification – Muga Project”) is unchanged.



Approval assumptions

The Company reported to the market that it had received the mining concession permit in an announcement on 5 July 2021 (refer ASX, “Muga Project Receives Mining Concession”). This permit followed the positive environmental permit announced in June 2019 (refer ASX, “Muga Project Receives Positive Environmental Permit”) concludes the Government permitting process.

The Company has requested the construction licences from the town halls of Sangüesa and Undués, being the two towns closest to the mine site, one in the province of Navarra and the other in Aragón, as well as licences from the water authorities.

Financial Sensitivity Analysis

The Company has run sensitivity analysis on the key Project parameters which have the potential to have a significant impact on the projected returns. This analysis indicates that the projected returns for the Project are most sensitive to changes in the received potash price. The financial results use an MOP price forecast based on CRU Group’s second half 2021 dataset. The sensitivity analysis indicates that even in the downside scenario of a fall of 20% in received potash prices the Project would still deliver a post-tax NPV₈ of €1.3 billion and an IRR of 20%.

The Company has also run a sensitivity using current spot prices on a flat real basis. The sensitivity analysis indicates that at current prices the Project would deliver a post-tax NPV₈ of €2.8 billion and an IRR of 42%.

The Company has run a financial analysis considering the scenario if the Exploration Target and the Muga Inferred Resource tonnes were deleted from the projected forecasts. This scenario yields an NPV₈ of €1.145 billion, although the Company considers that a better reflection of the impact is a range of €1.0 billion to €1.3 billion and an IRR of 24%.

The Company has run financial sensitivity analysis to determine the impact of changes to the NPV₈ and IRR of the Project due to fluctuations of the operating cost, Project CAPEX and the potash price forecast. These can be seen in Tables 6 and 7 and Graph 3 below.

TABLE 6: SENSITIVITY ANALYSIS IMPACT ON NPV₈

		NPV ₈ (€ billion) output				
		-20%	-10%	Base	10%	20%
Sensitivity analysis	Operating Cost	2.08	1.99	1.89	1.80	1.70
	Project CAPEX	1.98	1.93	1.89	1.85	1.81
	Potash price forecast	1.28	1.59	1.89	2.20	2.50



GRAPH 3: SENSITIVITY ANALYSIS IMPACT ON NPV₈

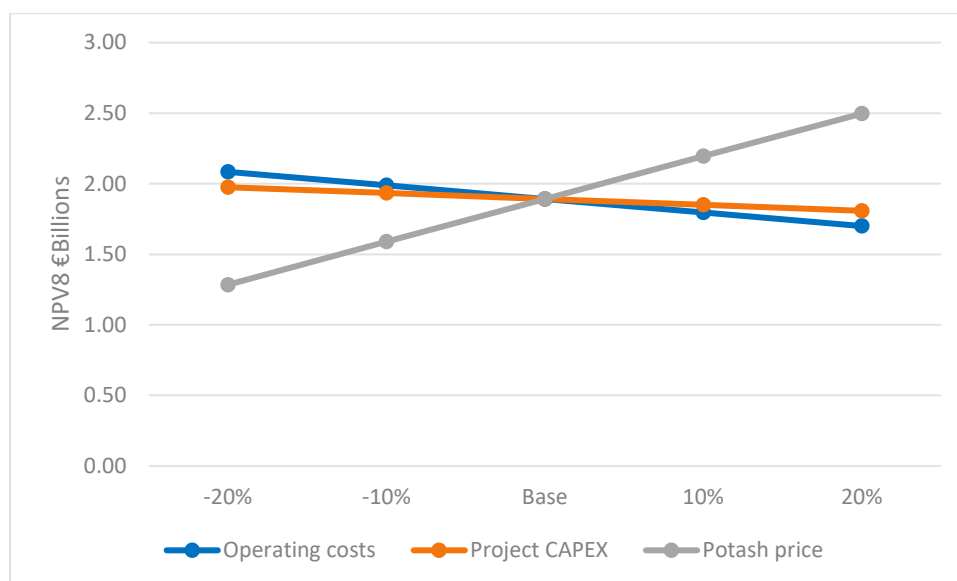


TABLE 7: SENSITIVITY ANALYSIS IMPACT ON IRR

		IRR %				
		-20%	-10%	Base	10%	20%
Sensitivity analysis	Operating Cost	27%	26%	25%	24%	23%
	Project CAPEX	28%	26%	25%	24%	22%
	Potash price forecast	20%	23%	25%	27%	29%

Key Risks

Key risks identified in this document included:

- Future conversion of additional Resources (including Inferred) and the Exploration target into Ore Reserves;
- Adverse movement in the potash price;
- Adverse movement in key operating costs;
- Timely project approvals by authorities;
- Results of future detailed engineering can be uncertain; and
- Project funding.

-ENDS-

This announcement has been authorised for release by the Directors of Highfield Resources Limited

ASX ANNOUNCEMENT



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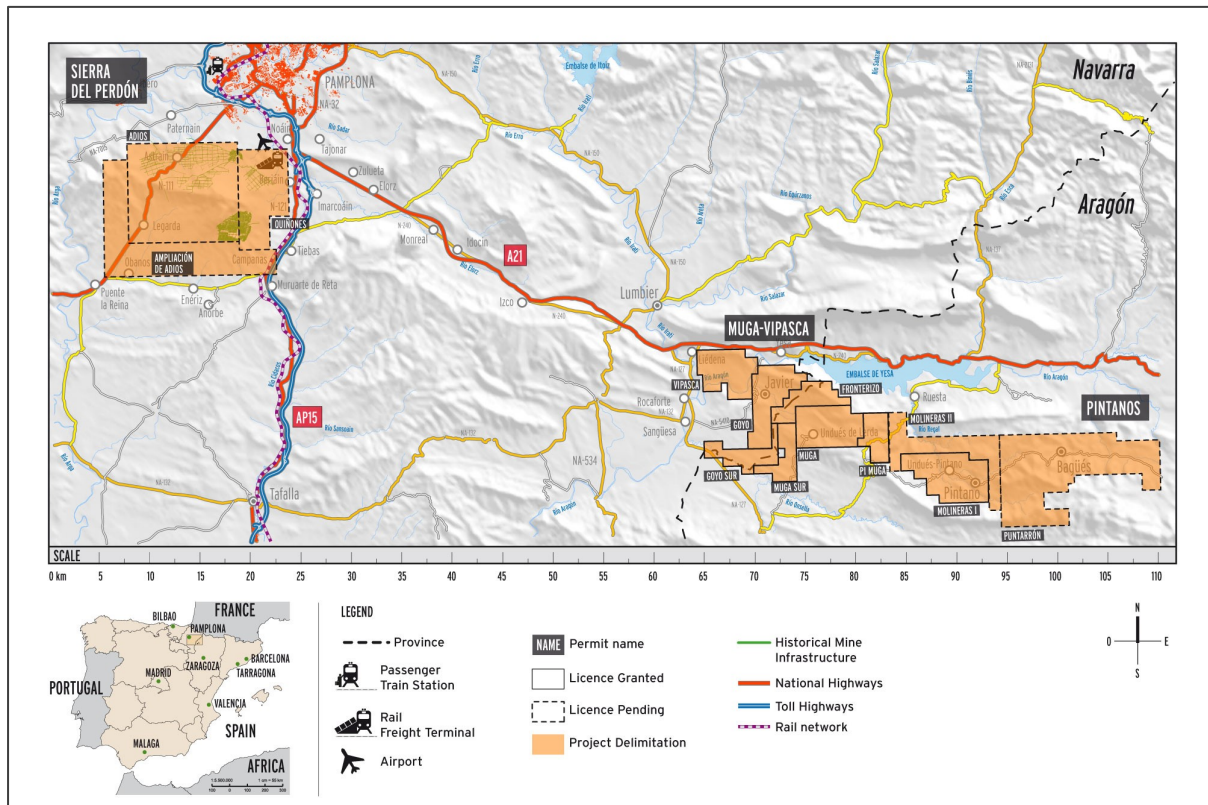
About Highfield Resources

Highfield Resources is an ASX listed potash company which focuses on the construction of its flagship low cost, low capex Muga-Vipasca Project in Spain having been granted the Mining Concession in July 2021.

Muga is a unique project – with decline accessible shallow potash mineralisation without overlying aquifers. The Project benefits from quality and readily accessible infrastructure already in place in the region and importantly, the Muga Project is located in the heart of a European agricultural region which has a clear demand for potash supply to meet future requirements.

Highfield’s potash tenements (Muga-Vipasca, Pintanos, and Sierra del Perdón) are located in the Ebro potash producing basin in Northern Spain, covering an area of around 262 km².

FIGURE 6: LOCATION OF MUGA-VIPASCA, PINTANOS, AND SIERRA DEL PERDÓN TENEMENT AREAS IN NORTHERN SPAIN.





COMPETENT PERSONS STATEMENT FOR MUGA ORE RESERVES AND MUGA MINERAL RESOURCES

This update was prepared by Mr. Ignacio Salazar Director of Highfield Resources. The information in this update that relates to Ore Reserves is based on information prepared under the direction of Dr Mike Armitage, a Corporate Consultant with SRK Consulting (UK) Limited. Dr. Mike Armitage CEng, CGeol. is the Competent Person who assumes overall professional responsibility for the reported Ore Reserve. The information related with the review of the Life of Mine (“LOM”) that underpins the Ore Reserves has been prepared by Mr Chris Bray, who is a full-time employee of and Principal Consultant (Mining) at SRK. The information in this update that relates to Mineral Resources is based on information prepared by Ms Anna Fardell, a Senior Consultant at SRK Consulting (UK) Limited.

Dr Mike Armitage is a Member the Institute of Materials, Metals and Mining (“IMMM”) which is a ‘Recognised Overseas Professional Organisation’ (“ROPO”) included in a list promulgated by the Australian Stock Exchange (“ASX”) from time to time. Dr. Mike Armitage has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Dr. Mike Armitage consents to the inclusion in this update of the matters based on this information in the form and context in which it appears.

Mr Chris Bray BEng, MAusIMM (CP) is taking responsibility for the review of the LOM plan, as reported by the Company. Mr Bray is a full-time employee and Principal Consultant (Mining) at SRK. He is a Member of and Chartered Professional in the Australasian Institute of Mining and Metallurgy. He is a Mining Engineer with 24 years’ experience in the mining and metals industry, including operational experience in underground mines as well as mine planning and review experience on underground potash, salt, lithium and borate projects, and as such qualifies as a CP as defined in the JORC Code. He has also been involved in the reporting of Ore Reserves on various properties internationally for over 10 years.

Ms Anna Fardell is a Senior Resource Geologist employed by SRK, and has over five years’ experience in estimating and reporting Mineral Resources relevant to the style of mineralisation and type of deposit described herein. Ms Fardell is a registered member of the Australian Institute of Geoscientists (6555) and considered a Competent Person (CP) under the definitions and standards described in the JORC Code 2012. Ms Fardell takes responsibility for the Mineral Resource Statement and Exploration Target presented here.

Ms Anna Fardell consents to the inclusion in this update of the matters based on their information in the form and context in which it appears.



APPENDIX 1

ON RESERVES, RESOURCES AND EXPLORATION TARGET

The information in this release referring to the mine plan or mining activities, as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (“JORC Code”), is derived from Ore Reserve Estimate and Exploration Target related to Muga announced 23 November 2021 (refer ASX, “Updated Ore Reserve Estimate – Muga Project”) and the Mineral Resource statement related to Muga announced on 30 March 2021 (refer ASX, “Annual Report to the stakeholders”). The estimated Ore Reserves and Mineral Resources underpinning the production target have been reported by competent persons in accordance with the requirements of the JORC Code. The relevant Competent Persons’ statements are shown at the end of this ASX announcement.

Ore Reserve Estimate

The updated Ore Reserve Statement prepared by Highfield, and reviewed by SRK, is presented in Table 8 below. The Proved and Probable Ore Reserve have been derived from the Measured and Indicated Mineral Resource of 237.3 Mt at 12.0% Potassium Oxide (“K₂O”, potash) as previously reported and which is valid as at 31 August 2020 and comprises 104.3 million tonnes at 10.2% Potassium Oxide (“K₂O”, potash), with a Proved Ore Reserve of 45.3 million tonnes at 10.5% K₂O and a Probable Ore Reserve of 58.9 million tonnes at 10.0% K₂O.

The audited Ore Reserve Statement has been reported in accordance with the terminology and guidelines of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (“JORC Code”). The Ore Reserve is presented in terms of plant feed and inclusive of losses and dilution incurred during mining and is a sub-set of, and not additive to, the most recent Mineral Resource estimate from which it was derived.

The Company confirms that it is not aware of any new information or data that materially affects the information included in this market announcement and that all material assumptions and technical parameters underpinning the estimates with regards to exploration results in the ASX announcement released on 23 November 2021 continue to apply and have not materially changed.



TABLE 8: AUDITED SRK ORE RESERVE STATEMENT FOR THE MUGA POTASH PROJECT DEPOSIT EFFECTIVE DATE 31 OCTOBER 2021

Ore Reserve Classification	Tonnage	%K ₂ O	%MgO	%KCl
	(Mt)			
Proved Reserve	45.3	10.5%	0.3%	16.6%
Probable Reserve	59.0	10.0%	0.6%	15.8%
Total Ore Reserve (Proved + Probable)	104.3	10.2%	0.5%	16.1%

* Additional notes to consider for the purposes of the Ore Reserve statement are as follows:

1. All figures are rounded to reflect the relative accuracy of the estimate and have been used to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, SRK does not consider them to be material. The Concession is wholly owned by and exploration is operated by Geocalci S.L.U., the wholly owned Spanish subsidiary of Highfield Resources.
2. The standard adopted in respect of the reporting of Ore Reserves for the Project, following the completion of required technical studies, is the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.
3. SRK reasonably expects the Muga deposit to be amenable to a variety of underground mining methods for the shallow and inclined potash seams. Ore Reserves are reported at an 8% K₂O cut-off which is based on potash price assumptions, metallurgical recovery assumptions from initial testwork, mining costs, processing costs, general and administrative (G&A) costs, and other factors.
4. SRK notes that the Reserve Tonnes are reported as wet tonnes with a low moisture content of 0.8%.

Ore Reserve assumptions

The updated Ore Reserve, effective date 31 October 2021, has been prepared by the Company and reflects the results of recent mine planning based on the revised geological model and updated MRE, effective date 31 August 2020; and further advances in the project design and cost estimation.

The approach, and the assumptions made, for the purpose of the Ore Reserve estimate are summarised in the following sections.

Ore Reserve cut-off grade approach

The cut-off grade utilised to report the Ore Reserve is 8% K₂O. SRK has verified the input parameters and the cut-off grade calculation together with the technical justification behind the production scenario proposed by Highfield. SRK also assessed the sensitivity of the Project economics to capital costs, operating costs and commodity prices with additional contingencies applied to test the robustness of the project economics. The Company and SRK are confident that the Ore Reserve has been reported in accordance with the JORC Code guidelines and is economically viable based on current forecast commodity prices.

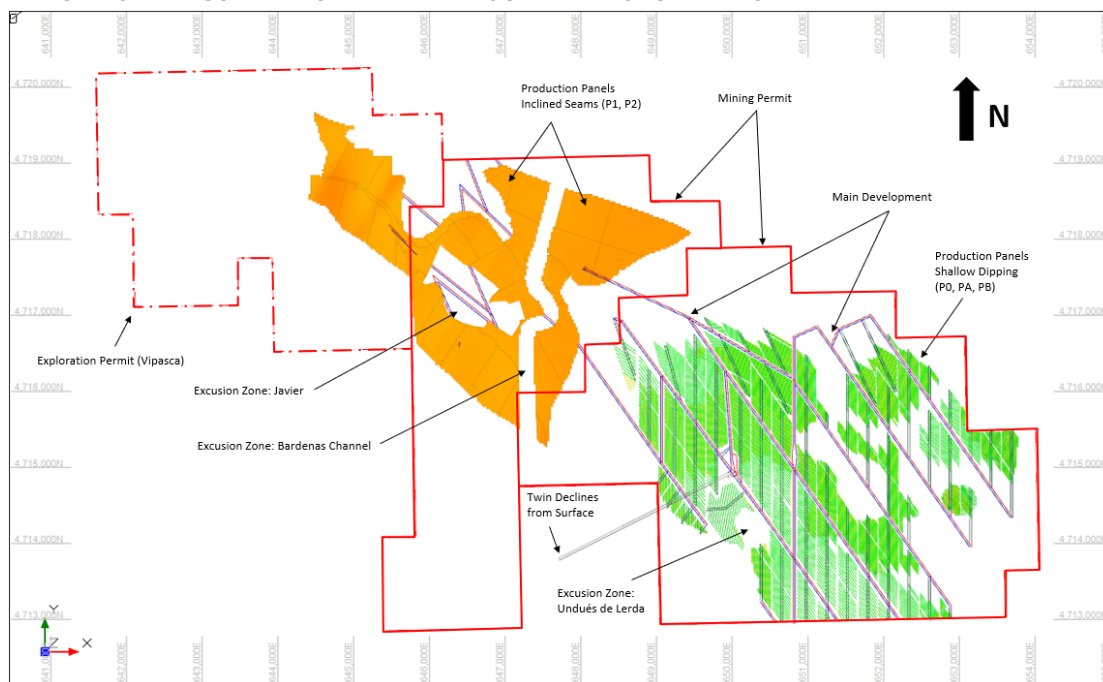


Mining method approach

The revised mine plan, used as the basis for the Ore Reserve estimate, was developed by Highfield with technical mine planning support from IGAN and based on panel rib pillar guidance by SRK (following the methodology and modifying factors based on the Muga Project Update statement of 22 January 2019). The revised approach considers mining of shallow dipping seams referred to as P0, PA, and PB (the “shallow dipping seams”) and inclined seams referred to as P1 and P2 (the “inclined seams”), as shown in Figure 7. The mineable tonnes are comprised of approximately 66% from the shallow dipping seams and 34% from the inclined seams.

The potash seams are also constrained by a minimum mining height of 2 metres which is consistent with the planned mining equipment. The shallow dipping seams utilise a set of two parallel roadways as the main development access, one for fresh air intake and access and the other for exhaust ventilation and both with conveyor belt materials handling system. The mining method approach is a typical Room and Pillar (“R&P”) panel layout. The room width is specified at 8 metres and the height and pillar size is determined by the total combined seam thickness, geotechnical constraints due to depth below surface and/or any equipment limitations.

FIGURE 7: PLAN VIEW OF REVISED ORE RESERVE ESTIMATION MUGA-VIPASCA MINING PANELS INCLUDING ACCESS DEVELOPMENT AND BOUNDARY CONSTRAINTS



The more steeply inclined potash seams in the north west of the deposit required an alternative mining approach to the R&P panel layout used for the shallow dipping seams, to minimise dilution and maximise extraction, taking into consideration the geotechnical constraints and equipment limitations. An adaptation of the existing R&P method was considered for developing a practically achievable inclination for the roadways and mining rooms while maintaining the same production targets and utilising the same excavation, material handling and backfill approach.



The mine design includes a primary twin decline access at a maximum apparent dip of 15%. The revised mine plan also incorporates the requirements of the environmental and mining approval process, particularly related to subsidence controls and exclusion zones around towns, infrastructure and objects of significant cultural importance.

Processing

The detailed economic analysis supporting reasonable prospects for eventual economic extraction of the Mineral Resource assumes processing with conventional crushing, flotation and crystallisation.

The proposed beneficiation process consists of a hybrid of two conventional beneficiation processes for sylvinitic ores, namely froth flotation and dissolution/crystallisation. Flotation is applied to the coarse fraction of the feed ore after crushing, and dissolution/crystallisation, which produces a higher quality product, is applied to fines and intermediate fractions to achieve an overall optimum level of recovery. Sufficient testwork has been conducted to support the development of the flowsheet. For the purpose of the Ore Reserve estimate 91% KCl average recovery is used, as validated by the metallurgical testwork.

The process design resulting of the testwork carried out at the Saskatchewan Research Centre (“SRC”) laboratories in Canada in 2018 has been optimised with minor updates to improve the robustness of the process and included the production of vacuum salt as a by-product to reduce surface tailings storage.

Capex

The capex estimate is comprehensive and confirmed in 2019 by Micon International Company Ltd. (“Micon”) to be superior to typical estimates at this stage of a project’s development. Allowances have been made for the full mining fleet to extract ore over the life of mine including refurbishment and replacement costs, ground support, conveying systems for ore and backfill operations, ventilation systems and other materials to support mining development. The process plant capex estimate has been calculated utilising the equipment purchase contracts. The Company has already signed purchase contracts for 85% of the process plant equipment (refer ASX 21 September 2021, “Purchase Contract Signed for Process Plant Equipment”) giving a high degree of confidence in the capex estimate.

Sales and marketing

The product sales assumptions and forecast pricing used to support the ORE are also the same as used by the Company in the Muga Project Update statement of 15 October 2018 (refer ASX, “Muga Project Update”). This approach assumes that 100% of the first phase of production is assumed to be sold into local and regional markets and for the second phase, a conservative approach has been adopted which considers 25% of product is sold into northern European markets and 25% to export markets. Forecast Potash prices are based on Commodity Resource Unit (“CRU”) second half 2021 dataset. The forecast prices considered in the financial model for southern Europe price for 2021 range from €360-390/tonne of potash.

A flat €16.4/tonne for transport of potash product to the ‘point of sale’ has been applied in the economic assessment.



The mine gate sales price of €36/tonne for de-icing salt and the mine gate sales price of €55/tonne for vacuum salt have been applied based on Argus Media's most recent prices.

Social and environmental considerations

In addition to the statutory consultation required as part of the environmental approval process, the Company has implemented a comprehensive stakeholder engagement programme. This is based on a strategy that includes regular meetings with community leaders, community groups and an actively managed project website.

A range of environmental factors have been considered for the development of the Ore Reserve estimate. These include groundwater assessments, surface water management infrastructure, waste management, environmental controls around the temporary waste storage area and mining exclusion zones around surface infrastructure to mitigate against potential subsidence.

The Ore Reserve statement as included herein is materially compliant with the JORC Code guidelines effective October 31, 2021. In accordance with additional reporting requirements of the latest version of the JORC Code (2012), SRK's review report includes an Appendix comprising the JORC checklist tables which include additional details and commentary on "Section 1 - Sampling Techniques and Data", "Section 2 Reporting of Exploration Results", "Section 3 - Estimation and Reporting of Mineral Resources" and "Section 4 - Estimation and Reporting of Ore Reserves". These tables are also appended to this press release.

Mineral Resource Estimate

Cautionary Statement. The production target set out in this update is derived from Proved and Probable Ore Reserves and Measured, Indicated and Inferred Mineral Resources from the Muga tenement as well as the Exploration Target at the Vipasca and Muga Sur tenements. There is a 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 potential quantity and grade of an Exploration Target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised. The technical parameters underpinning the Mineral Resource in the market announcement dated 30 March 2021 (refer ASX announcement, "Annual report to Shareholders") continue to apply and have not materially changed.

The updated Mineral Resource Statement for the Project as authored by SRK (refer ASX announcement 30 March 2021, "Annual report to Shareholders") has not changed materially from the previous statement released in October 2018. The Mineral Resource tonnage has increased by 14.91 Mt to 282.26 Mt and the grade of the Mineral Resource has decreased from 12.4% K₂O to 11.8% K₂O. The reasons for the decrease in grade and additional tonnage are:

- New drilling in the Vipasca Licence area has added new areas to the Mineral Resource.
- Lower grade mineralisation was intersected at Vipasca than previously in the Muga Licence area.
- The new thickness interpolation has decreased the thicknesses of the potash horizons at the edges of the basin which has decreased the tonnage in the Muga Licence area slightly.



- The lower grade intercepts in Vipasca have influence the grades at the western edge of the Muga Licence which has decreased the block model grades at the western edge of that licence.

The Mineral Resource Statement shows that the tonnage in the Muga Licence area is 12.1% K₂O as opposed to the Vipasca Licence area where the average grade is 10.0% K₂O.

The total Measured and Indicated Mineral Resource has increased by 2.58 Mt and decreased in grade by 0.3% K₂O which SRK does not expect to have any material impact on the mine plan. The Inferred Mineral Resource has increased in tonnage from 32.6 Mt to 44.93 Mt and decreased in grade from 12.9% to 10.8% K₂O. This is due to the low-grade mineralisation added in the Vipasca Licence area which has been predominantly classified as Inferred.

TABLE 9: MUGA POTASH PROJECT DEPOSIT MINERAL RESOURCE ESTIMATE RELEASED ON MARCH 2021 AND COMPARED TO MINERAL RESOURCE ESTIMATE OF OCTOBER 2018 NOW SUPERSEDED.

	31 December 2020		31 December 2019	
	Tonnes In Place (Mt)	Grade K ₂ O (%)	Tonnes In Place (Mt)	Grade K ₂ O (%)
Measured	103.2	12.3%	91.8	12.4%
Indicated	134.1	11.7%	143.0	12.1%
Total Measured & Indicated	237.3	12.0%	234.8	12.3%
Inferred	44.9	10.8%	32.6	12.9%
Total	282.2	11.8%	267.4	12.4%

The Company confirms that it is not aware of any new information or data that materially affects the information included in this market announcement and that all material assumptions and technical parameters underpinning the estimates with regards to exploration results in the ASX announcement released on 30 March 2021 continue to apply and have not materially changed.

In order to report Mineral Resources in accordance with the JORC Code, it must be demonstrated that the mineralisation has the potential for eventual economic extraction. The upper horizons, P0 to PB are likely to be mined in a continuous sequence in the central part of the Muga Basin as there is very little interburden between them. In this instance the minimum thickness of the total unit P0, PA and PB has been assessed to ensure thinner central horizons are not excluded. A minimum thickness of 1.7 m has been applied to this combined package of horizons. In other areas where the horizons separate and cannot be mined together a minimum mining thickness of 1.5 m has been applied on the assumption the proposed equipment can be selective to 1.7 m.

A minimum thickness of 1.5 m was also applied to the P1, P2 and P4 potash horizons in order to constrain the Mineral Resources.

In addition, a cut-off calculation was derived to support limiting the Mineral Resource reporting of material above 8% K₂O. Specifically, the horizons were visually assessed to delineate contiguous areas above cut-off and ensure they were still mining targets. It is assumed at this stage that the high levels of MgO seen in horizon PA could be managed through blending with adjacent horizons.



The cut-off grade was derived using technical and economic parameters provided by the Company. SRK reviewed the input parameters and the cut-off grade calculation, alongside the technical reasoning behind the proposed production scenario, as well as the sensitivity of the cut-off grade to operating costs and a contingency and was satisfied that these are appropriate for the purposes of reporting Mineral Resources. SRK notes that the cut-off grade derived is considerably lower than the 8% applied. However, SRK deems a high cut-off grade appropriate as the processing recovery used in the calculation is not variable and applies to the average grade of the deposit. There is no testwork available to support processing recoveries of 95% for grades lower than 8% K₂O and therefore SRK considers it appropriate to apply this limit to the Resources reported herein.

The SRK Mineral Resource Statement is shown in Table 10. The extents of the Mineral Resource occur between 180 m and 1,400 m below surface and it is contained entirely within the Investigation and Mining Permits held by the Company. The Mineral Resources have been presented according to licence area. The Mineral Resource Statement is valid as at 31 August 2020 and is based on the information available at that time.



**TABLE 10: AUDITED SRK MINERAL RESOURCE STATEMENT FOR THE MUGA-VIPASCA POTASH DEPOSIT
EFFECTIVE DATE 31 AUGUST 2020**

Classification	Area	Horizon	Density (g/cm ³)	Tonnage (Mt)	%K ₂ O	%MgO	%Na ₂ O	% Insolubles	True Thickness (m)	
Measured	Muga	P0	2.1	10.18	9.8	0.2	25.9	23.3	2.0	
		PA	2.0	17.81	11.7	0.8	24.2	20.3	1.7	
		PB	2.1	38.07	12.9	0.2	26.9	19	3.5	
		P1	2.2	20.53	12.5	0.1	31.5	17.1	2.8	
		P2	2.2	16.6	12.9	0.1	24.3	13.4	3.0	
Sub-total Measured			2.1	103.19	12.3	0.3	26.8	18.4		
Indicated	Muga	P0	2.1	34.47	10.1	0.5	27.7	28.5	4.1	
		PA	1.9	19.43	12.4	2	22.8	20.8	2.0	
		PB	2.1	17.69	11.8	0.4	27.4	20.6	1.6	
		P1	2.2	34.22	12.8	0.1	30.7	17.1	5.6	
		P2	2.2	11.72	12.9	0.1	26	14	3.4	
	Sub-total			2.1	117.53	11.8	0.6	27.5	21.3	
	Vipasca	P1	2.2	5.75	10.7	0.1	30	17.9	1.8	
		P2	2.2	10.86	11.2	0	31.1	18.7	2.8	
		Sub-total			2.2	16.61	11	0	30.7	18.4
	Sub-total Indicated			2.1	134.14	11.7	0.5	27.9	20.9	
Measured + Indicated	Muga	P0	2.1	44.65	10	0.4	27.3	27.3	3.6	
		PA	1.9	37.24	12.1	1.4	23.5	20.6	1.9	
		PB	2.1	55.76	12.6	0.3	27.1	19.5	2.9	
		P1	2.2	54.75	12.7	0.1	31	17.1	4.6	
		P2	2.2	28.32	12.9	0.1	25	13.6	3.2	
	Sub-total			2.1	220.72	12.0	0.4	27.2	19.9	
	Vipasca	P1	2.2	5.75	10.7	0.1	30	17.9	1.8	
P2		2.2	10.86	11.2	0	31.1	18.7	2.8		
Sub-total			2.2	16.61	11	0	30.7	18.4		
Sub-total Measured + Indicated			2.1	237.33	12.0	0.4	27.5	19.8		
Inferred	Muga	P0	2.1	0.3	9.9	0.4	28.3	28.4	2.6	
		PA	1.9	0.16	11.8	2.4	24.3	21.8	1.2	
		P1	2.2	1.75	12.4	0.1	29.5	15.7	5.0	
		P2	2.2	6.02	13.1	0.1	27.5	15.3	3.0	
		P4	2.2	7.55	13.7	0.2	31.7	17.1	2.1	
	Sub-total			2.2	15.78	13.2	0.2	29.7	16.5	
	Vipasca	P0	2.1	10.43	8.9	0.1	26.1	30.6	2.9	
		PA	2.1	4.2	9.4	0.1	27	27.6	1.6	
		PB	2.1	3.79	8.4	0	29.2	25.2	1.7	
		P1	2.2	2.37	9.5	0	29.4	19.3	2.8	
		P2	2.2	8.36	10.5	0	31.2	19.6	5.6	
		Sub-total			2.1	29.15	9.4	0.1	28.4	25.4
	Sub-total Inferred			2.2	44.93	10.8	0.1	28.8	22.3	
Grand Total	Muga	P0	2.1	44.95	10	0.4	27.3	27.3	3.6	
		PA	1.9	37.4	12.1	1.4	23.5	20.6	1.9	
		PB	2.1	55.76	12.6	0.3	27.1	19.5	2.9	
		P1	2.2	56.5	12.7	0.1	31	17.1	4.6	
		P2	2.2	34.34	12.9	0.1	25.4	13.9	3.1	
	Sub-total			2.1	236.5	12.1	0.4	27.4	19.7	
	Vipasca	P0	2.1	10.43	8.9	0.1	26.1	30.6	2.9	
		PA	2.1	4.2	9.4	0.1	27	27.6	1.6	
		PB	2.1	3.79	8.4	0	29.2	25.2	1.7	
		P1	2.2	8.12	10.3	0.1	29.8	18.3	1.9	
		P2	2.2	19.22	10.9	0	31.1	19.1	3.1	
		Sub-total			2.2	45.76	10	0	29.2	22.9
	Total			2.1	282.26	11.8	0.4	27.7	20.2	

*Reported above a cut-off grade of 8% K₂O and a minimum mining thickness (where horizons will be mined separately) of 1.5m

*Insolubles refers to clays, gypsum and sulphates

*Numbers have been rounded to reflect the relative level of accuracy and as such totals may include rounding discrepancies



Exploration Target⁵

Cautionary Statement. The production target set out in this update is derived from Proved and Probable Ore Reserves and Inferred Mineral Resources from the Muga-Vipasca licences as well as the Exploration Target at the Vipasca and Muga Sur licences. There is a 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 potential quantity and grade of an Exploration Target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised. The technical parameters underpinning the target in the market announcement dated 23 November 2021 continue to apply and have not materially changed.

Since producing the up-to-date MRE, Geoalcali has also derived an Exploration Target as defined by the JORC Code for both the Vipasca Licence area and the Muga Sur Licence area. The Vipasca Exploration Target has been assumed to contain all five horizons P2 to P0 while the Muga Sur Exploration Target has been assumed to contain the PB, PA and P0 horizons only. The presence of the potentially economic potash has not been confirmed in these areas, but they comprise projected lateral extensions to the current Muga-Vipasca model that are either untested by drilling or contain historical data that is considered unreliable.

An Exploration Target is defined by the JORC Code (2012) as a statement or estimate of exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, which must be quoted as a range of tonnes and a range of grade (or quality), relates to mineralisation for which there has been insufficient exploration to estimate a Mineral Resource.

SRK has reviewed both the tonnage and grade estimates for the exploration targets and the drilling programmes proposed to further explore these and projected cost of these. The tonnages in each case were calculated by delineating the target areas for each horizon, as shown in Figure 8, by applying a thickness for each horizon based on the nearest drilling intersection and by assuming a density of 2.13 g/cm³ (the average density for the existing model). Three target areas were delineated for Vipasca and one for Muga Sur. The tonnage ranges were then derived by applying $\pm 25\%$ thresholds to the calculations. The grade ranges were derived by projecting those in the existing block model estimates in the adjacent Vipasca and Muga licence areas.

The Exploration Target so derived for the Vipasca areas (West Vipasca, Northwest Vipasca and South Vipasca respectively) is between 80 and 130 Mt with a mean grade of between 8 and 10% K₂O and for Muga Sur is between 0.5 and 1 Mt with a mean grade of between 8 and 12% K₂O. Note that these have been rounded further from the numbers derived by Geoalcali.

It should be noted that these estimates are conceptual in nature, that there has been insufficient exploration to estimate a Mineral Resource for these areas and that it is uncertain if further exploration of these areas will result in the estimation of a Mineral Resource.

⁵ The potential quantity and grade of an Exploration Target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realised. The technical parameters underpinning the target in the market announcement dated 23 November 2021 continue to apply and have not materially changed.



The drilling programmes and envisaged expenditures are summarised in Table 11 and SRK has ensured that these have been allowed for in the operating costs assumed by the mine plan it used to underpin the Ore Reserve statement.

TABLE 11: PLANNED DRILLING AND EXPENDITURE FOR EACH EXPLORATION TARGET

Exploration Target	Planned Drilling Schedule	Description	Expenditure (USD)
West Vipasca	Y4-Y7 Mine Life	Underground fan drilling of 5 holes, total meterage 5,000m	650,000
Northwest Vipasca	Y4-Y7 Mine Life	Underground fan drilling of 5 holes, total meterage 5,000m	650,000
South Vipasca	Y4-Y7 Mine Life	Underground fan drilling of 5 holes, total meterage 5,000m	650,000
Muga Sur	2022-2023	1 drillhole, 750m	97,500

While the Exploration Targets were derived by Geocalci these have been reviewed by SRK and, as is the case for the Mineral Resource, the Competent Person responsible for these is Ms Fardell.

FIGURE 8: EXPLORATION TARGET AREAS FOR THE MUGA AND VIPASCA LICENCES.

