

This document comprises a prospectus relating to Sirius Minerals Plc (the **Company**) prepared in accordance with the Prospectus Rules of the Financial Conduct Authority (the **FCA**) made under section 73A of the Financial Services and Markets Act 2000, as amended (**FSMA**). This document has been approved by the FCA in accordance with section 87A of FSMA and made available to the public as required by section 3.2 of the Prospectus Rules.

The Company's issued ordinary shares (**Shares**) are currently admitted to trading on the AIM market (**AIM**) operated by the London Stock Exchange plc (**London Stock Exchange**). Applications have been made to (i) the London Stock Exchange to cancel the admission of the Shares to trading on AIM; (ii) the FCA for the Shares to be admitted to the premium listing segment of the Official List of the FCA (**Official List**); and (iii) the London Stock Exchange for the Shares to be admitted to trading on its Main Market for listed securities (together, **Admission**). It is expected that Admission will become effective and that dealings in the Shares on the Main Market of the London Stock Exchange will commence at 8.00am on 28 April 2017. Trading of the Shares on AIM will be cancelled by no later than Admission. No application has been made or is currently intended to be made for the Shares to be admitted to listing or trading on any other exchange.

Shareholders are not required to take any action upon receipt of this Prospectus. The Company is not issuing any new Shares nor is it seeking to raise any new money in connection with Admission. This document has been published solely to enable the Company to obtain admission of the Shares to the premium listing segment of the Official List and to trading on the London Stock Exchange's Main Market for listed securities.

**For a discussion of certain factors that should be considered in connection with the business of Sirius Minerals Plc (the Company and, together with its subsidiaries as the context requires, the Group) and the Shares see Part 2 ("Risk Factors") of this Prospectus.**

Sirius Minerals Plc and the Directors, whose names appear in this Prospectus, accept responsibility for the information contained in this Prospectus. To the best of the knowledge and belief of Sirius Minerals Plc and the Directors (who have taken all reasonable care to ensure that such is the case) the information contained in this Prospectus is in accordance with the facts and makes no omission likely to affect the import of such information.



## **SIRIUS MINERALS PLC**

*(Incorporated under the Companies Acts 1985 to 2006 and registered in England and Wales  
with registered number 4948435)*

### **Admission to the premium listing segment of the Official List and to trading on the London Stock Exchange's Main Market for listed securities**

**J.P. Morgan Cazenove**  
*Sponsor*

#### **Issued share capital immediately following Admission**

Issued and fully paid

Nominal Value  
£0.0025

Number  
4,164,514,405

J.P. Morgan Securities plc, which conducts its UK investment banking business as J.P. Morgan Cazenove (and is referred to herein as **J.P. Morgan Cazenove**), is authorised by the Prudential Regulation Authority (the **PRA**) and regulated in the United Kingdom by the FCA and the PRA. J.P. Morgan Cazenove is acting exclusively for the Company and no one else in connection with the Prospectus and will not regard any other person (whether or not a recipient of this Prospectus) as a client in relation to the matters described in this Prospectus. J.P. Morgan Cazenove will not be responsible to anyone other than the Company for providing the protections afforded to the clients of J.P. Morgan Cazenove or for providing advice in relation to the matters described in the contents of this Prospectus or any transaction, arrangement or matter referred to herein.

Apart from the responsibilities and liabilities, if any, which may be imposed on J.P. Morgan Cazenove by FSMA or the regulatory regime established thereunder or any other laws, J.P. Morgan Cazenove and any person affiliated with it accepts no responsibility whatsoever for the contents of this Prospectus, and makes no representation or warranty, express or implied, is made by J.P. Morgan Cazenove in relation to the contents of this Prospectus, including its accuracy, completeness or verification or any other statement made or purported to be made by it, or on its behalf, in connection with the Company or the matters described in this Prospectus. To the fullest extent permissible J.P. Morgan Cazenove accordingly disclaims all and any responsibility or liability whether arising in tort, contract or otherwise (save as referred to above) which it might otherwise have in respect of this Prospectus or any such statements.

The contents of this Prospectus should not be construed as legal, financial, business, investment or tax advice. Each recipient of this Prospectus should consult his, her or its legal adviser, independent financial adviser or tax adviser for legal, financial, business, investment or tax advice. This document does not constitute an offer to sell or a solicitation of an offer to purchase or subscribe for Shares in any jurisdiction. The distribution of this Prospectus into certain jurisdictions may be restricted by law. In particular, this Prospectus is not for distribution in or into the United States and the Shares may be offered, sold or otherwise transferred only pursuant to registration under the United States Securities Act of 1933, as amended (the **Securities Act**) or another exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. This Prospectus is for information purposes only and does not constitute an offer or invitation to acquire or dispose of Shares in the United States. The Company has not and does not intend to register the Shares under the Securities Act or under the applicable securities laws of any state of the United States.

**NEITHER THE U.S. SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION IN THE UNITED STATES NOR ANY OTHER U.S. REGULATORY AUTHORITY HAS APPROVED OR DISAPPROVED OF THE ORDINARY SHARES OR PASSED UPON OR ENDORSED THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENCE IN THE UNITED STATES.**

No action has been or will be taken to permit the possession or distribution of this Prospectus in the United States or any other jurisdiction where action for that purpose may be required. Accordingly, this Prospectus may not be distributed or published in any jurisdiction except in circumstances that will result in compliance with any applicable laws and regulations. Persons into whose possession this Prospectus comes should inform themselves about and observe any such restrictions. Any failure to comply with these restrictions may constitute a violation of the securities law or the laws of any such jurisdiction.

This Prospectus is dated 25 April 2017.

## CONTENTS

PART 1	SUMMARY INFORMATION .....	4
PART 2	RISK FACTORS.....	19
PART 3	DIRECTORS, SECRETARY, REGISTERED OFFICE AND ADVISERS .	39
PART 4	EXPECTED TIMETABLE OF PRINCIPAL EVENTS FOR ADMISSION.	40
PART 5	PRESENTATION OF INFORMATION.....	41
PART 6	INDUSTRY OVERVIEW .....	49
PART 7	BUSINESS DESCRIPTION .....	63
PART 8	DIRECTORS, SENIOR MANAGEMENT AND CORPORATE GOVERNANCE .....	109
PART 9	SELECTED FINANCIAL INFORMATION.....	115
PART 10	OPERATING AND FINANCIAL REVIEW .....	119
PART 11	HISTORICAL FINANCIAL INFORMATION.....	138
PART 12	ADDITIONAL INFORMATION.....	182
PART 13	DEFINITIONS AND GLOSSARY .....	229
PART 14	COMPETENT PERSON’S REPORT .....	238

## PART 1

### SUMMARY INFORMATION

*Summaries are made of up of disclosure requirements known as “Elements”. These Elements are numbered in Sections A-E (A.1 – E.7).*

This summary contains all the Elements required to be included in a summary for this type of securities and Issuer. Because some Elements are not required to be addressed, there may be gaps in the numbering sequence of the Elements.

*Even though an Element may be required to be inserted in the summary because of the type of securities and Issuer, it is possible that no relevant information can be given regarding the Element. In this case a short description of the Element is included in the summary with the mention of “not applicable.”*

Introduction and warnings		
A.1	<b>Introduction</b>	This summary should be read as an introduction to the Prospectus. Any decision to invest in the Shares should be based on consideration of the Prospectus as a whole by the prospective investor. Where a claim relating to the information contained in the Prospectus is brought before a court, the plaintiff investor might, under the national legislation of a Member State, have to bear the costs of translating the Prospectus before the legal proceedings are initiated. Civil liability attaches only to those persons who have tabled the summary, including any translation thereof, but only if the summary is misleading, inaccurate or inconsistent when read together with the other parts of the Prospectus or it does not provide, when read together with the other parts of the Prospectus, key information in order to aid investors when considering whether to invest in such securities.
A.2	<b>Subsequent resale of securities or final placement of securities through financial intermediaries</b>	Not applicable; the Company is not engaging any financial intermediaries for any resale of securities or final placement of securities after publication of this Prospectus.
Issuer		
B.1	<b>Legal and commercial name of the issuer</b>	Sirius Minerals Plc (the <b>Company</b> and, together with its subsidiaries, the <b>Group</b> ).
B.2	<b>Domicile / Legal Form / Legislation / Country of incorporation</b>	The Company is a public limited company, incorporated in England and Wales with registered number 4948435 and having its registered office in England. The Company operates under the Companies Act 2006.
B.3	<b>Current operations / Principal activities and markets</b>	<p>The Company is focused on the extraction of polyhalite in North Yorkshire, United Kingdom – the North Yorkshire polyhalite project (the <b>Project</b>). The Company’s polyhalite product, which it markets under the trademarked name POLY4, is a multi-nutrient fertilizer that can be used to achieve balanced fertilization, which is critical to obtain optimal crop yields and quality.</p> <p>Polyhalite is an evaporite mineral comprising a natural combination of potassium (14 per cent. K<sub>2</sub>O) sulphur (19 per cent. S), magnesium (6 per cent. MgO) and calcium (17 per cent. CaO), with the chemical formula: K<sub>2</sub>SO<sub>4</sub>.MgSO<sub>4</sub>.2CaSO<sub>4</sub>.2H<sub>2</sub>O. In the fertilizer industry, the Company believes polyhalite is an attractive low-chloride alternative to traditional potassium-bearing mineral products, including SOP and SOPM, because it incorporates not only potassium, but three of the other five key macro-nutrients necessary for plant growth (sulphur, calcium and magnesium).</p>

		<p>Once developed, the Project is expected to represent the first large-scale polyhalite mine in the world, with SRK estimating mineral resources of approximately 2.66 billion metric tonnes from only 7 per cent. of the Project area of interest. The Company is initially targeting production capacity of 10 million tonnes per annum (<b>mtpa</b>) from the Project by mid-2024 (the end of the Initial Construction Phase), at which point it is planned to be capable of producing up to 9.5 mtpa of granulated POLY4 product at steady state, with the balance as coarse POLY4 product. The Company intends to implement the Project so that production capacity is phased to increase from 10 mtpa by the end of the Initial Construction Phase, to production capacity of 13 mtpa, then eventually up to production capacity of 20 mtpa in the Expansion Phase, subject to receipt of additional planning permissions. First production from the mine is expected to be achieved by the end of 2021.</p> <p>Bringing the Project to an initial production capacity of 10 mtpa will involve the construction of an underground mine to enable the extraction of polyhalite, along with the necessary infrastructure both above and below ground that will be required for transportation, processing and distribution. Construction comprises the sinking of two vertical mine shafts to access the polyhalite deposit and building a 37 kilometre long underground conveyor (Mineral Transport System, or <b>MTS</b>), a processing facility for granulating or chipping the mined material into the final physical form (Material Handling Facility, or <b>MHF</b>) and harbour facilities comprising an approximately 3.5-kilometre long overland conveyor, a ship berth and a ship loader located adjacent to the harbour on the River Tees.</p> <p>The schedule for the Initial Construction Phase can be broken down into four key stages: (i) site preparation and pre-sink activities; (ii) main shaft sinking activity and tunnelling; (iii) construction and development of the MHF and harbour facilities; and (iv) first production, shaft bottom fit-out and ramp-up of production, initially to 10 mtpa. The design of the facilities enables an increase in production capacity to 13 mtpa by incremental addition of mining, granulation and harbour capacities. A further increase in production capacity to 20 mtpa would be achieved by extension of the existing tunnel boring machine shaft and expansion of mining, hoisting, MHF and harbour facilities, which would require additional planning permissions.</p> <p>The Company has set a number of short-term objectives which it intends to execute over the next 12-24 month period following Admission as part of its short term strategy. These include: (i) implementation of the Initial Construction Phase of the Project; (ii) completion of the material procurement activities for the Project; (iii) expansion of the Company's global sales strategy; and (iv) targeting eligibility for FTSE indexation for the Company. A detailed budget has been developed for the period to 31 December 2017 which envisages an expenditure of approximately £269 million in connection with these short-term objectives.</p> <p>The Project will adopt conventional bulk mining methods (a combination of continuous mining machines and drill and blast methods) to enable efficient extraction at relatively low cost. Two deep shafts, the production shaft (reaching a depth of 1,594 metres) and the service shaft (reaching a depth of 1,565 metres), will access the polyhalite shelf seam. All mining will take place within the polyhalite horizon, with the product then hoisted to 360 metres below surface level where it will be transported to the MHF for processing via the MTS. Finished products will be transported approximately 3.5 kilometres from the MHF on a covered conveyor system to the riverside and new quay harbour facilities, which will be built at the northern end of the Project's Bran Sands river frontage.</p>
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		<p>The Company's sales and marketing strategy is based on a direct customer sales model in which POLY4 will be sold primarily directly to blenders and distributors, who then on-sell to both wholesale and retail distribution channels. The focus is to maximise the reach of POLY4, take advantage of the customers' distribution networks and benefit from the customers' logistics capabilities. In addition, sales teams will provide both commercial and agronomic support on a regional basis, which adds another level of interaction between the Company and its global customer base.</p> <p>The Company or its subsidiary, York Potash Limited (<b>YPL</b>) have to date signed a number of binding large-volume, long-term take-or-pay offtake agreements under which customers have agreed to buy a minimum amount of POLY4 once production begins and pay a given price (the <b>Offtake Agreements</b>). Each Offtake Agreement is negotiated individually, with varying lengths, renewal periods and termination provisions. As of the date of this Prospectus, the Company has entered into Offtake Agreements totalling 3.6 mtpa at their respective full volumes. In addition, certain customers have options to take an additional 0.9 mtpa in aggregate. There are other non-binding commitments in the form of MoUs, FSAs and LoIs between the Company and/or its agents and other potential customers in the amount of a further 3.6 mtpa (2.0 mtpa in MoUs, 0.5 mtpa in FSAs and 1.1 mtpa in LoIs).</p>
B.4	<b>Significant recent trends affecting the Group and the industry in which it operates</b>	<p>Global fertilizer demand is driven primarily by food, feed and fuel demand (which in turn are driven by, among other factors, population growth, reduction in arable land per capita, dietary changes, especially in the developing world, and increased biofuel consumption). Fertilizers are one of the fundamental means to improve agricultural yields and address the forecasted future imbalance between food demand and supply.</p> <p>Population growth is a key driver of fertilizer demand. As the world's population grows, urbanises and industrialises, farm land per capita decreases and more food production is required from each acre of farm land, which in turn requires more plant nutrients. According to the Food and Agriculture Organization (<b>FAO</b>), arable land in 2010 was estimated to be approximately 2,100 square metres per person, and this is expected to decrease to approximately 1,800 square metres per person by 2050. As a result of the limited ability to expand the existing stock of arable land, it is expected that it will be necessary to improve crop yields and meet anticipated future demand for food. This is expected to increase demand for fertilizers, according to the FAO.</p> <p>In addition, sustained economic growth in emerging markets is increasing food and feed demand and multi-nutrient, low-chloride potassium fertilizer demand. According to the FAO, due to the growth in GDP and income, populations in emerging markets are shifting to more protein-rich diets, leading to increasing grain consumption as animal feed. The production of meat requires a significant amount of grain to be fed to farm animals.</p> <p>Furthermore, with increasing legislation on alternatives to fossil fuels, according to the U.S. Energy Information Administration, biofuel production has increased substantially in recent years. This trend is significantly affecting the agricultural industry with an increase in demand for grain crops and a resulting increase in demand for fertilizers.</p> <p>Polyhalite is expected to be increasingly used as a source of potassium in fertilizer as it also provides other important nutrients and has low chloride content. According to CRU Strategies, a fertilizer industry consultancy (<b>CRU</b>), polyhalite's characteristics as a multi-nutrient, low-chloride potassium fertilizer suggest that it has the potential to be used as a substitute for other existing fertilizers such as potassium-based fertilizers (SOP, SOPM and MOP), sulphur-based fertilizers (ammonium sulphate and single superphosphate) and magnesium-based fertilizers (kieserite),</p>

		which offers a large potential contestable market. According to CRU, the total polyhalite contestable market size potential is expected to increase from 376 mtpa in 2018 to 440 mtpa in 2025, with an average annual growth rate of 2.2 per cent., although polyhalite’s multi-nutrient composition means it may not always serve as a direct substitute for each of the other products, because low-chloride fertilizers such as SOP are more effective for chloride-sensitive crops, they are priced at a premium over MOP. The Company expects that once polyhalite-based products are well established in the market, they will also attract a price premium. In addition, polyhalite is simpler and less expensive to produce than naturally occurring SOP, chemically produced SOP and SOPM.																														
B.5	Description of Issuer’s group	<p>The Company is the holding company of the Group. The Company’s various assets are held through a number of subsidiaries. The Company’s principal subsidiaries and subsidiary undertakings are:</p> <table><thead><tr><th>Name</th><th>Country of incorporation / residence</th></tr></thead><tbody><tr><td>York Potash Limited .....</td><td>UK</td></tr><tr><td>York Potash Processing &amp; Ports Limited .....</td><td>UK</td></tr><tr><td>York Potash Holdings Limited .....</td><td>UK</td></tr><tr><td>Sirius Minerals Holdings Limited .....</td><td>UK</td></tr><tr><td>Sirius Minerals Finance Limited .....</td><td>Jersey</td></tr><tr><td>Sirius Exploration Limited .....</td><td>UK</td></tr><tr><td>Sirius Resources Limited .....</td><td>UK</td></tr><tr><td>Sirius Potash Limited .....</td><td>UK</td></tr><tr><td>SACH 1 Limited.....</td><td>UK</td></tr><tr><td>SACH 2 Limited.....</td><td>UK</td></tr><tr><td>Dakota Salts LLC .....</td><td>U.S.</td></tr><tr><td>Sirius Minerals (Singapore) Pte Limited .....</td><td>Singapore</td></tr><tr><td>Sirius Minerals (Australia) Pty Limited .....</td><td>Australia</td></tr><tr><td>Auspotash Corporation Limited<sup>(1)</sup> .....</td><td>Canada</td></tr></tbody></table> <p><b>Note:</b> (1) As at 31 December 2015, this entity has ceased operations.</p>	Name	Country of incorporation / residence	York Potash Limited .....	UK	York Potash Processing & Ports Limited .....	UK	York Potash Holdings Limited .....	UK	Sirius Minerals Holdings Limited .....	UK	Sirius Minerals Finance Limited .....	Jersey	Sirius Exploration Limited .....	UK	Sirius Resources Limited .....	UK	Sirius Potash Limited .....	UK	SACH 1 Limited.....	UK	SACH 2 Limited.....	UK	Dakota Salts LLC .....	U.S.	Sirius Minerals (Singapore) Pte Limited .....	Singapore	Sirius Minerals (Australia) Pty Limited .....	Australia	Auspotash Corporation Limited <sup>(1)</sup> .....	Canada
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B.6	<b>Notifiable interests in the Shares, different voting rights and controlling interests</b>	<p>As at 21 April 2017 (being the latest practicable date prior to the publication of this Prospectus), the interests (including beneficial interests) of the Directors and Senior Management (as well as their immediate families) in the share capital of the Company and the interests of persons connected (within the meaning of section 252 of the Companies Act) with the relevant Director or member of Senior Management, the existence of which was known to or could, with reasonable due diligence, be ascertained by the relevant Director or member of Senior Management, are as follows:</p> <table> <tr> <th>Name</th><th>Number of Shares</th><th>Percentage of Shares</th></tr> <tr> <td>Chris Fraser .....</td><td>123,747,368</td><td>2.97</td></tr> <tr> <td>Russell Scrimshaw.....</td><td>43,523,979</td><td>1.05</td></tr> <tr> <td>Thomas Staley.....</td><td>572,400</td><td>0.01</td></tr> <tr> <td>Noel Harwerth .....</td><td>79,109</td><td>0.00</td></tr> <tr> <td>Keith Clarke CBE.....</td><td>852,207</td><td>0.02</td></tr> <tr> <td>Louise Hardy .....</td><td>0</td><td>0.00</td></tr> <tr> <td>Lord Hutton .....</td><td>30,856</td><td>0.00</td></tr> <tr> <td>Jane Lodge.....</td><td>386,953</td><td>0.01</td></tr> <tr> <td>Nicholas King.....</td><td>372,366</td><td>0.01</td></tr> <tr> <td>Simon Carter.....</td><td>0</td><td>0.00</td></tr> <tr> <td>J.T. Starzecki.....</td><td>1,333,713</td><td>0.03</td></tr> </table> <p>As at 21 April 2017 (being the latest practicable date prior to the date of publication of this Prospectus), in so far as it is known to the Company by virtue of the notifications made pursuant to the Companies Act and/or Chapter 5 of the Disclosure Guidance and Transparency Rules, the name of each person (other than a Director) who directly or indirectly is interested in voting rights representing 3 per cent. or more of the total voting rights in respect of the Company's issued share capital, and the amount of such person's holding, is as follows:</p> <table> <tr> <th colspan="3">As 21 April 2017</th></tr> <tr> <th>Name</th><th>Number of Shares</th><th>Percentage of Shares</th></tr> <tr> <td>Nortrust Nominees Limited TDS ACCT</td><td>310,620,913</td><td>7.46</td></tr> <tr> <td>State Street Nominees Limited OM02 ACCT</td><td>300,418,844</td><td>7.21</td></tr> <tr> <td>Pershing Nominees Limited PERNY ACCT</td><td>296,191,404</td><td>7.11</td></tr> <tr> <td>Hargreaves Lansdown (Nominees) Limited 15942 ACCT</td><td>237,819,934</td><td>5.71</td></tr> <tr> <td>Barclayshare Nominees Limited</td><td>233,885,599</td><td>5.62</td></tr> <tr> <td>Hargreaves Lansdown (Nominees) Limited HLNOM ACCT</td><td>197,759,108</td><td>4.75</td></tr> <tr> <td>Chase Nominees Limited</td><td>190,005,068</td><td>4.56</td></tr> <tr> <td>Hargreaves Lansdown (Nominees) Limited VRA ACCT</td><td>180,191,197</td><td>4.33</td></tr> <tr> <td>DB London (Investor Services) Nominee Limited</td><td>162,000,000</td><td>3.89</td></tr> <tr> <td>HSDL Nominees Limited</td><td>143,994,424</td><td>3.46</td></tr> <tr> <td>TD Direct Investing Nominees (Europe) Limited SMKTNOMS ACCT</td><td>141,794,670</td><td>3.40</td></tr> </table> <p>The Shareholders detailed in the above table do not have different voting rights from those of other Shareholders.</p> <p>As at 21 April 2017 (being the latest practicable date prior to publication of this Prospectus), the Company was not aware (i) of any persons who, directly or indirectly, jointly or severally, exercise or could exercise control or ownership over the Company, or (ii) of any arrangements the operation of which may at a subsequent date result in a change of control of the Company.</p>	Name	Number of Shares	Percentage of Shares	Chris Fraser .....	123,747,368	2.97	Russell Scrimshaw.....	43,523,979	1.05	Thomas Staley.....	572,400	0.01	Noel Harwerth .....	79,109	0.00	Keith Clarke CBE.....	852,207	0.02	Louise Hardy .....	0	0.00	Lord Hutton .....	30,856	0.00	Jane Lodge.....	386,953	0.01	Nicholas King.....	372,366	0.01	Simon Carter.....	0	0.00	J.T. Starzecki.....	1,333,713	0.03	As 21 April 2017			Name	Number of Shares	Percentage of Shares	Nortrust Nominees Limited TDS ACCT	310,620,913	7.46	State Street Nominees Limited OM02 ACCT	300,418,844	7.21	Pershing Nominees Limited PERNY ACCT	296,191,404	7.11	Hargreaves Lansdown (Nominees) Limited 15942 ACCT	237,819,934	5.71	Barclayshare Nominees Limited	233,885,599	5.62	Hargreaves Lansdown (Nominees) Limited HLNOM ACCT	197,759,108	4.75	Chase Nominees Limited	190,005,068	4.56	Hargreaves Lansdown (Nominees) Limited VRA ACCT	180,191,197	4.33	DB London (Investor Services) Nominee Limited	162,000,000	3.89	HSDL Nominees Limited	143,994,424	3.46	TD Direct Investing Nominees (Europe) Limited SMKTNOMS ACCT	141,794,670	3.40
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**B.7 Selected historical key financial information**

The tables below summarise certain key financial information relating to the Group for the periods indicated. The consolidated financial information of the Group has been extracted without material adjustment from the Group's audited consolidated financial statements as at and for the year ended 31 December 2016, as at and for the nine months ended 31 December 2015 and as at and for the years ended 31 March 2015 and 31 March 2014, prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union (together, the **Historical Financial Information**).

Until 31 March 2015, the Company's financial year ran from 1 April to 31 March. Beginning on 1 April 2015, the Company has adopted a financial year ending 31 December.

**1. CONSOLIDATED INCOME STATEMENT**

	For the year ended 31 December	For the nine months ended 31 December	For the year ended 31 March	For the year ended 31 March
	2016	2015	2015	2014
		(audited)		
		(£'000)		
Revenue .....	—	—	—	—
Administrative Expenses.....	(11,872)	(7,422)	(10,047)	(9,115)
<b>Operating Loss .....</b>	<b>(11,872)</b>	<b>(7,422)</b>	<b>(10,047)</b>	<b>(9,115)</b>
Finance Income .....	1,489	99	332	49
Finance Costs .....	(13,039)	(186)	(353)	(1,063)
<b>Loss Before Taxation .....</b>	<b>(23,422)</b>	<b>(7,509)</b>	<b>(10,068)</b>	<b>(10,129)</b>
Taxation.....	468	550	503	2,151
<b>Loss for the Financial Year .....</b>	<b>(22,954)</b>	<b>(6,959)</b>	<b>(9,565)</b>	<b>(7,978)</b>

**2. CONSOLIDATED STATEMENT OF FINANCIAL POSITION**

	As at 31 December	As at 31 March	As at 31 March
	2016	2015 restated	2015
		(audited)	
		(£'000)	
<b>ASSETS</b>			
<i>Non-Current Assets</i>			
Property, Plant and Equipment .....	6,138	1,849	1,932
Intangible Assets .....	150,204	137,970	121,721
Restricted Cash .....	55,283	—	—
<b>Total Non-Current Assets .....</b>	<b>211,625</b>	<b>139,819</b>	<b>123,653</b>
<i>Current Assets</i>			
Derivative Financial Instrument .....	1,041	—	—
Restricted Cash .....	27,641	—	—
Other Receivables .....	840	1,184	1,413
Bank deposits.....	322,188	—	—
Cash and Cash Equivalents .....	260,157	29,093	26,640
Loans .....	—	—	—
<b>Total Current Assets .....</b>	<b>611,867</b>	<b>30,277</b>	<b>28,053</b>
<b>TOTAL ASSETS .....</b>	<b>823,492</b>	<b>170,096</b>	<b>151,706</b>
<b>EQUITY AND LIABILITIES</b>			
<i>Equity</i>			
Share Capital .....	10,412	5,737	5,362
Share Premium Account .....	590,723	240,874	216,586
Share-based Payment Reserve .....	6,114	7,624	13,290
Accumulated Losses.....	(112,261)	(90,399)	(95,630)
Foreign Exchange Reserve.....	1,284	1,266	7,028
<b>Total Equity .....</b>	<b>496,272</b>	<b>165,162</b>	<b>146,636</b>
<i>Current Liabilities</i>			
Convertible Loan .....	321,366	—	—
Loan from Third Parties.....	—	748	1,980
Trade and Other Payables .....	5,854	4,186	3,090
<b>Total Liabilities .....</b>	<b>327,220</b>	<b>4,934</b>	<b>5,070</b>
<b>TOTAL EQUITY AND LIABILITIES .....</b>	<b>823,472</b>	<b>170,096</b>	<b>151,706</b>

### 3. CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

	Share capital	Share premium account	Share based payments reserve	Accumulated losses	Foreign exchange reserve	Equity shareholders' funds
	(£'000)					
<b>At 31 March 2013.....</b>	<b>3,359</b>	<b>147,763</b>	<b>10,345</b>	<b>(79,392)</b>	<b>7,164</b>	<b>89,239</b>
Loss for the financial year.....	—	—	—	(7,978)	—	(7,978)
Foreign exchange differences on translation of foreign operations.....	—	—	—	—	210	210
Total comprehensive (loss)/income for the year.....	—	—	—	(7,978)	210	(7,768)
Convertible loan.....	368	9,562	—	1,010	—	10,940
Share issue.....	897	42,147	897	—	—	43,941
Share issue costs.....	—	(2,180)	—	—	—	(2,180)
Share based payments	27	—	162	—	—	189
Exercised options.....	7	505	—	—	—	512
<b>At 31 March 2014.....</b>	<b>4,658</b>	<b>197,797</b>	<b>11,404</b>	<b>(86,360)</b>	<b>7,374</b>	<b>134,873</b>
Loss for the financial year.....	—	—	—	(9,565)	—	(9,565)
Foreign exchange differences on translation of foreign operations.....	—	—	—	—	(346)	(346)
Total comprehensive (loss)/income for the year.....	—	—	—	(9,565)	(346)	(9,911)
Convertible loan.....	113	3,287	—	295	—	3,695
Share issue.....	572	15,853	—	—	—	16,425
Share issue costs.....	—	(665)	—	—	—	(665)
Share based payments	—	—	1,886	—	—	1,886
Exercised options.....	19	314	—	—	—	333
<b>At 31 March 2015.....</b>	<b>5,362</b>	<b>216,586</b>	<b>13,290</b>	<b>(95,630)</b>	<b>7,028</b>	<b>146,636</b>
Foreign exchange reserve prior period adjustment.....	—	—	—	—	5,627	(5,627)
Loss for the financial period.....	—	—	—	(6,959)	—	(6,959)
Foreign exchange differences on translation of foreign operations.....	—	—	—	—	(135)	(135)
Total comprehensive loss for the period.....	—	—	—	(6,959)	(135)	(7,094)
Convertible loan.....	43	1,103	—	258	—	1,404
Share issue.....	—	—	—	—	—	—
Share issue costs.....	—	(121)	—	—	—	(121)
Share-based payments	—	—	(5,666)	6,365	—	699
Exercised options.....	332	23,306	—	—	—	23,638
<b>At 31 December 2015 restated .....</b>	<b>5,737</b>	<b>240,874</b>	<b>7,624</b>	<b>(90,339)</b>	<b>1,266</b>	<b>165,162</b>
Loss for the financial period.....	—	—	—	(22,954)	—	(22,954)
Foreign exchange differences on translation of foreign operations.....	—	—	—	—	18	18
Total comprehensive loss for the period.....	—	—	—	(22,954)	18	(22,936)
Share issue.....	4,629	347,281	—	—	—	351,910
Share-based payments	32	1,418	(1,510)	1,032	—	972
Exercised options.....	14	1,150	—	—	—	1,164
<b>At 31 December 2016.</b>	<b>10,412</b>	<b>590,723</b>	<b>6,114</b>	<b>(112,261)</b>	<b>1,284</b>	<b>496,272</b>

#### 4. CONSOLIDATED STATEMENT OF CASH FLOWS

	For the year ended 31 December	For the nine months ended 31 December	For the year ended 31 March	
	2016	2015	2015	2014
		(audited)		
		(£'000)		
<b>Cash Flow from Operating Activities ..</b>	<b>(15,896)</b>	<b>(5,307)</b>	<b>(10,240)</b>	<b>(7,950)</b>
<u>Cash Flow from Investing Activities</u>				
Purchase of Intangible Assets .....	(12,108)	(15,533)	(27,188)	(17,424)
Purchase of Property, Plant and Equipment .....	(4,346)	(1)	(62)	(1,461)
Investments in subsidiary companies .....	—	—	—	—
Purchase of Bank Deposits .....	(320,187)	—	—	—
Interest Received .....	441	99	—	—
Repayment of Loan to Third Party .....	—	—	—	915
<b>Net Cash Flow Used in Investing Activities .....</b>	<b>(336,200)</b>	<b>(15,435)</b>	<b>(27,250)</b>	<b>(17,970)</b>
<u>Cash Flow from Financing Activities</u>				
Proceeds from Loan .....	—	—	—	15,748
Repayment of Borrowings .....	(748)	23,637	16,758	43,557
Proceeds from Convertible Loan .....	319,923	(121)	(665)	(2,180)
Purchases of Restricted Cash .....	(81,580)	—	—	—
Proceeds from Issue of Shares .....	371,445	—	—	—
Share Issue Costs .....	(18,370)	—	—	—
Convertible Loan Issue Costs .....	(9,158)	—	—	—
Interest Paid .....	(19)	(186)	—	—
Finance (Costs) / Income .....	—	—	(21)	(1,014)
<b>Net Cash Flow Generated from Financing Activities .....</b>	<b>581,493</b>	<b>23,330</b>	<b>16,072</b>	<b>56,111</b>
<b>Net Increase / (Decrease) in Cash and Cash Equivalents .....</b>	<b>229,397</b>	<b>2,588</b>	<b>(21,418)</b>	<b>30,191</b>
<b>Cash and Cash Equivalents at Beginning of the Year .....</b>	<b>29,093</b>	<b>26,640</b>	<b>48,404</b>	<b>17,980</b>
<b>Effect of Foreign Exchange Rate Changes .....</b>	<b>1,667</b>	<b>(135)</b>	<b>(346)</b>	<b>233</b>
<b>Cash and Cash Equivalents at the End of the Year .....</b>	<b>260,157</b>	<b>29,093</b>	<b>26,640</b>	<b>48,404</b>

Certain significant changes in the Group's financial condition and operating results occurred during the year ended 31 December 2016, nine months ended 31 December 2015, and the financial years ended 31 March 2015 and 31 March 2014. These changes are set out below.

Over the periods under review, the Group has not recognised any revenue. The Group's administrative expenses, largely attributable to staff costs, were £11.9 million, £7.4 million, £10.0 million and £9.1 million in the year ended 31 December 2016, the nine months ended 31 December 2015, and the years ended 31 March 2015 and 31 March 2014, respectively. Finance costs, attributable to interest expense on a convertible loan and interest paid on a mortgage for the site of the proposed minehead, were £13.0 million, £0.2 million, £0.4 million and £1.1 million in the year ended 31 December 2016, nine months ended 31 December 2015, and the years ended 31 March 2015 and 31 March 2014, respectively. The Group has not paid taxes over the periods under review, instead benefitting from research and development tax credits from the UK Government. Therefore, the Group has had net tax credits of £0.5 million, £0.6 million, £0.5 million and £2.2 million in the year ended 31 December 2016, nine months ended 31 December 2015, and the years ended 31 March 2015 and 31 March 2014, respectively.

Other than as set out above, there has been no significant change in the financial condition and operating results of the Group in the financial year ended 31 December 2016, nine months ended 31 December 2015, and the years ended 31 March 2015 and 31 March 2014, respectively or in the period subsequent to 31 December 2016, being the date to which the latest financial information of the Group in Part 11 ("Historical Financial Information") of this Prospectus was prepared.

B.8	<b>Unaudited <i>pro forma</i> financial information</b>	Not applicable; there is no <i>pro forma</i> financial information included in this Prospectus.
B.9	<b>Profit forecast / estimate</b>	Not applicable; there is no profit forecast or estimate in this Prospectus.
B.10	<b>Audit report – qualifications</b>	Not applicable; there are no qualifications in the auditor’s reports on the historical financial information of the Group.
B.11	<b>Insufficient working capital</b>	Not applicable; in the opinion of the Company, the working capital available to the Group is sufficient for the Group’s present requirements, that is, for at least the 12 months following the date of this Prospectus and for at least 12 months from the date of Admission.
<b>Securities</b>		
C.1	<b>Type and class of securities</b>	<p>The Company has applied for the admission of the Shares to: (i) the premium listing segment of the Official List of the FCA; and (ii) trading on the Main Market for listed securities of the London Stock Exchange.</p> <p>The Shares will continue to be registered with their existing ISIN number GB00B0DG3H29 and SEDOL number B0DG3H2. The Company’s ticker symbol will continue to be SXX.</p> <p>No new Shares are being issued by the Company in connection with Admission.</p> <p>On Admission, the Shares will comprise the entire issued and to be issued share capital of the Company. On Admission, over 25 per cent. of the Company’s issued share capital will be held in public hands (within the meaning of paragraph 6.1.19R of the Listing Rules).</p>
C.2	<b>Currency of issue</b>	Pounds sterling.
C.3	<b>Issued share capital</b>	As at 21 April 2017 (being the latest practicable date before the publication of this Prospectus), the Company has in issue 4,164,514,405 fully paid Shares and the nominal value of the issued share capital of the Company amounted to £10,411,286.
C.4	<b>Rights attaching to the securities</b>	<p>The rights attaching to the Shares are uniform in all respects and they form a single class for all purposes including:</p> <ul style="list-style-type: none"> <li>the Shares rank equally for voting purposes. On a show of hands each shareholder has one vote and on a poll each shareholder has one vote per Share held; and</li> <li>each Share ranks equally for any dividend declared. Each Share ranks equally for any distributions made on a winding up.</li> </ul>
C.5	<b>Restrictions on transfer</b>	The Shares are freely transferable and there are no restrictions on transfer set out in the constitutional documents of the Company.
C.6	<b>Admission to trading</b>	Applications have been made for all of the Shares to be admitted to the premium listing segment of the Official List of the FCA and to trading on the London Stock Exchange’s Main Market for listed securities.
C.7	<b>Dividend policy</b>	The Company has never declared or paid any cash dividends on its shares. The Company intends to retain future earnings, if any, to finance the operation of its business and does not anticipate paying any cash dividends in the foreseeable future until the Project is operational and generating cash, when the dividend policy will be reviewed in line with then-existing

		<p>financing commitments. Any future determination related to the Company's dividend policy will be made at the discretion of the Directors of the Company after considering its financial condition, results of operations, capital requirements, business prospects and other factors the Directors of the Company deem relevant, and subject to the restrictions contained in any future financing instruments.</p>
<b>Risks</b>		
D.1	<p><b>Key information on the key risks that are specific to the issuer or its industry</b></p>	<p>The Project is not yet generating any production or revenues, and the Company has incurred operating losses each year since its inception, primarily in the form of administrative expenses, particularly staff costs, related to preparatory studies, exploration and the acquisition of appropriate permits and licences. In November 2016, the Company completed the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering to provide partial funding for an initial construction phase (the <b>Initial Construction Phase</b>) intended to achieve first commercial production from the mine by the end of 2021 with production capacity ramping up to 10 mtpa over the subsequent three years. The development of the Project will require the commitment of substantial financial resources and losses may continue to occur even after the Initial Construction Phase is completed. The Project's total capital funding requirement to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years from 1 January 2017 (the <b>Construction Commencement Date</b>) (the <b>Capital Funding Period</b>) is currently forecasted at US\$2.9 billion. This is in addition to US\$0.2 billion in additional capital costs to reach production capacity of 10 mtpa which the Company anticipates funding from operating cash flow once production commences. There can be no assurance that the Project will become operational, that commercial production will commence on schedule or at all, or that, once it does, it will generate sufficient revenues to fund the Company's continuing operations or to allow the Company to achieve profitability.</p> <p>The capital cost estimates which comprise the Company's current capital funding plan may increase significantly during construction and as initial phases of the Project are completed. It is common for new mining infrastructure to experience unexpected costs, problems and delays during construction, often resulting in significant upward revisions to expected costs. Thus, the capital cost estimates which comprise the Company's current capital funding plan may increase significantly once construction has commenced and as initial phases of the Project are completed. Accordingly, there is no assurance that the Company will successfully develop the Project at all or that it will not experience significant delays or additional costs in doing so. In addition, there can be no assurance that the construction of the Project will result in the production of polyhalite in commercially viable quantities such that the Company will be able to generate sufficient revenues to fund its continued operations, or generate or sustain profitability in any future period.</p> <p>Since the acquisition by the Company of the Project in January 2011, the Company has invested substantially all of its financial and other resources in the development of the Project and for the planned production and sale of polyhalite. The mining of polyhalite for fertilizer use is a relatively new phenomenon, with only one other polyhalite mine known to be currently in operation. There can be no assurance that the Company will be successful in convincing customers of the efficacy of POLY4, its trademarked polyhalite product. A failure to establish the commercial viability of such use and thus support ongoing discussions with customers around the globe would result in a failure to create commercially viable levels of market demand for POLY4, at the selling prices anticipated by the Company or at</p>

		<p>all. If the Company fails to generate commercially viable levels of market demand for POLY4 at the selling price anticipated by the Company, the Company may fail to reach its anticipated level of commercial production or revenues, and as a result the Company may be unable to repay its indebtedness and could face acceleration of maturities and risk becoming insolvent or otherwise ceasing operations, resulting in a significant or total loss of investment by holders of Shares.</p> <p>The Company's current activities do not generate any revenues or positive operating cash flow, and construction on the Project and the development necessary to commence production and generate revenues will require significant capital expenditures. The Company estimates that its Capital Funding Requirement will be approximately US\$2.9 billion during the Capital Funding Period, of which approximately US\$1.1 billion is expected to be required over approximately the first three years following the Construction Commencement Date. The Stage 1 Financing comprises the proceeds of the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering, which completed in November 2016, and the Royalty Financing, in connection with which the Company and certain of its subsidiaries have entered into an agreement with a subsidiary of Hancock Prospecting Pty Ltd for the purchase of a royalty on production from the Project in exchange for US\$250 million plus a subscription for 200,076,829 new Shares in return for US\$50 million. The Stage 2 Financing currently involves the Company having entered into a mandate letter with six financial institutions in connection with a potential senior debt financing. If any single condition to the Royalty Financing is not met, or if the Stage 2 Financing is not available, the Company may be unable to replace those components with alternative sources of funding on commercially attractive terms, or at all. If the Company cannot raise the capital required in order to meet its funding requirements, commencement of first commercial production may be significantly or indefinitely delayed. This would result in the slippage of the projected polyhalite production schedule or the cancellation of the Project altogether, which would cast doubt on the Company's ability to continue as a going concern. Even if the currently identified capital requirements of the Capital Funding Period are met, there can be no assurance that the Company's actual capital needs will not increase significantly over the course of the development of the Project nor, that if such cost increases were to occur, the Company would be able to find additional capital on commercially attractive terms, or at all. Furthermore, the Company's estimates for the Capital Funding Period do not include estimated costs for mobile mining equipment and outsourced harbour and handling infrastructure, which it currently estimates to be an additional US\$439 million during the Capital Funding Period, but there is no guarantee outsourced, third party funding will be available. In order to prevent delays, the Company may choose to raise additional capital through the issuance of new Shares, additional convertible bonds, or other forms of equity, any of which could dilute the holdings of existing Shareholders. Even if additional capital is available, it may not be sufficient to cover any capital shortfall, and as a result the Project may fail to become operational and generate revenues, may fail to achieve commercial production on schedule or at all, and the Company may be unable to repay the substantial indebtedness it plans to incur to fund the Initial Construction Phase of the Project.</p> <p>The amount of debt financing required to be raised may increase throughout the development and operation of the Project. This future indebtedness may have important consequences, for the Company's business, financial condition or results of operations, including that: it could limit the Company's ability to incur additional debt or issue additional equity to fund working capital, capital expenditures, or debt service requirements; it may contain covenants or other terms that may</p>
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		<p>negatively impact the Company's business; it could limit the Company's flexibility in planning for, or reacting to, changes in the implementation of the Project or to other changes in its business, including benefiting from improved prices for its polyhalite, as a result of having a substantial percentage of production locked into pre-existing Offtake Agreements demanded by financing terms; it could require the Company to dedicate a substantial portion of its cash flow from operations to the repayment of its indebtedness, thereby reducing the availability of its cash flow for other purposes, such as the anticipated increase in production volumes; and it could, as a fixed cost, make the Company more vulnerable once the Project is operational to a downturn in its business or the economy that negatively impacts its revenues.</p> <p>As construction has now commenced, the Company is subject to geotechnical hazards and risks normally associated with the development and production of natural resources, any of which could result in additional capital or operating costs, significant delays, production shortfalls or damage to persons, property or the environment. In order to mitigate these and related risks, and the Company will have to complete a significant amount of additional work to further refine mitigation, remediation and optimisation measures integral to the Project design. These future reviews have the potential to result in design changes and capital cost increases with respect to these aspects of the Project. The success of the Project depends to a significant extent upon the Company's ability to complete construction and commence commercial production within the planned timeframe and in accordance with its current capital and operating cost estimates, and any further work and imposed conditions may require an increase in planned capital expenditure in order to address identified risks and requirements before the Project becomes operational.</p> <p>Under its Offtake Agreements, the Company's customers typically agree to purchase a certain minimum amount of POLY4 per annum for a fixed number of years, commencing upon first production, which is currently expected to occur in 2021. These agreements will not generate any sales or revenue to the Company until it is able to produce commercial quantities of polyhalite. However, there can be no assurance that the Project will produce polyhalite in sufficient quantities for the Company to meet its obligations in the timeframe set out in the Offtake Agreements. Furthermore, the Offtake Agreements expose the Company to any inability of its counterparties to pay for their commitments or otherwise fulfil their obligations under the agreements.</p> <p>The Company has obtained the necessary permits and approvals from various government authorities authorising commencement of work on the Project and its future operations. However, the permissions for the mine, the MTS and MHF are all subject to a total of 158 conditions, including a condition that development should commence within three years of the date of the permission, failing which the permission will lapse. If a planning permission lapses, then it will be necessary for the Company to apply for a new permission, which will involve a new planning application and environmental impact assessment. If any of the conditions are not complied with, the relevant granting authority can enforce compliance via a variety of enforcement methods. None of these enforcement methods would result in the relevant planning permission being invalidated, but could potentially result in financial penalties being levied against the Company.</p> <p>Furthermore, as the Project progresses there are various secondary permits or approvals that the Company and/or its contractors will require for the conduct of its operations. These secondary permits include but are not limited to environmental permits, water discharge permits, ecological</p>
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		<p>licences, land drainage consents, spoil management permits and hazardous waste producer registration. There is no assurance that all secondary permits will be granted pursuant to the applications made, that such permits will not be delayed, or that such permits will be granted on favourable conditions or at all. In the event that secondary permits or approvals are not obtained on time, on terms that are favourable to the Company, or at all, this could result in an increase in budgeted Project costs and/or delays to completion.</p> <p>There are numerous inherent uncertainties with respect to estimating the Company's polyhalite Mineral Resources and Ore Reserves, which are based on engineering, economic and geological data assembled and analysed by the Company's engineers, geologists and independent consultants. These Mineral Resources and Ore Reserves estimates depend to some extent on statistical inferences drawn from available drilling data, which may prove unreliable. In addition, the Company's estimates depend on a number of assumptions, including assumptions in respect of the following: geological and mining conditions, which may not be fully identified by available exploration data; variations in mineralogy; future market prices, operating costs, capital expenditures, recovery rates, tax rates, and development and reclamation costs; and the effects of governmental regulation. Any of these factors may not be fully accounted for by available exploration data and may differ from the Company's experience once it begins mining operations. There can be no assurance that the Company's estimates will be accurate or that the Project will yield resources and reserves in sufficient grades or quantities to recover future mining and development costs. Furthermore, the practice of mining for polyhalite is in its infancy and as a result, parameters for the design of a polyhalite mine are uncertain and the potential for unforeseen or unique challenges for the Project is higher than if the proposed extraction was of a more conventional mineral.</p> <p>The Company has converted its option agreements with relevant mineral rights owners into leasehold interests. There can be no assurance that such mineral interests are free from title defects. Failure to properly secure these mineral interests would significantly reduce the life of the mine currently contemplated and may affect the economic feasibility of the Project. In addition to mineral interests, the Project is also reliant on the future successful acquisition of real property and other rights key to the Project.</p> <p>Although the Company intends to take appropriate precautions to enhance the safety of its operations and minimise the risk of disruptions, it will be subject to hazards inherent in mining and the related storage and transportation of raw materials, products and wastes. These include explosions, fires, mechanical failures, remediation complications, chemical spills and discharges or releases of toxic or hazardous substances. These and other hazards to human life and the environment are inherent in mining operations, particularly underground mining. Any accidents, unaddressed risks or violations of planning conditions, licences, regulations or requirements in Project design or operation could cause temporary or longer term mine closure, could cause the Company to expend significant amounts to remediate safety issues or repair damaged facilities, could subject the Company to costly administrative and legal proceedings and the potential imposition of civil or criminal penalties and could expose the Company to costly reputational harm, all of which could have a material adverse effect on the Company's business, revenues, financial condition or results of operations.</p> <p>The Company currently anticipates that its Stage 1 and Stage 2 Capital Funding Requirements will be denominated primarily in pounds sterling and U.S. dollars. Following the Construction Commencement Date and upon commercial production, foreign currency exchange rate risk is</p>
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		<p>expected to have an impact on the Company's results. In particular, if the Company has not accurately estimated the mix of its U.S. dollar and pound sterling needs in future periods, and if the pound sterling were to depreciate significantly as compared to the U.S. dollar during the Initial Construction Phase, the Company's anticipated funding requirements, when denominated in pounds sterling could be significantly higher than expected. Any material adverse currency movements may result in the Company needing to amend its funding plans to raise more capital, resulting in a corresponding increase in interest costs or an increase in equity dilution. Furthermore, the Company's anticipated holdings in U.S. dollars will expose the Company to foreign exchange translation effects, which may impact the value of its balance sheet assets.</p>
D.3	<p><b>Key information on the key risks that are specific to the securities</b></p>	<p>The Company may seek to raise financing to fund other growth opportunities, invest in its business, or for general corporate purposes and issuing additional equity or convertible equity securities may be a more attractive option for the Company. Any additional equity financings would likely result in dilution in the percentage ownership of existing shareholders and may involve the use of securities that have rights, preferences, or privileges senior to the Shares which may adversely affect the price of the Shares.</p> <p>The Company's results of operations and financial condition are entirely dependent on its ability to implement the Project and commence production of POLY4. The Company's ability to pay future dividends will depend, among other things, on its financial performance, any restrictions relating to regulatory capital in subsidiaries and the availability of distributable profits and reserves and cash available for this purpose. The Company's ability to pay dividends in the future is affected by a number of factors. The payment of dividends by subsidiaries is, in turn, subject to restrictions, including the existence of sufficient distributable reserves and cash in those subsidiaries as well as certain restrictions in the Company's debt financing arrangements. These restrictions could limit or prohibit the payment of dividends to the Company by its subsidiaries, which could restrict the Company's ability to pay dividends to shareholders.</p> <p>The Company has never declared or paid dividends on its Shares, and there can be no guarantee that it will change its dividend policy to pay dividends in the future, or that the Company's revenue, profit and cash flow would be able to support the payment of such dividends. The payment of dividends is at the discretion of the Board of the Company and will be subject to, among other things, applicable law, regulations, restrictions, the Company's financial position, regulatory capital requirements, working capital requirements, finance costs, general economic conditions and other factors the Directors deem significant from time to time.</p> <p>The Shares are, and any dividends to be paid in respect of them will be, denominated in pounds sterling. An investment in Shares by an investor whose principal currency is not pounds sterling exposes the investor to foreign currency exchange rate risk. Any depreciation of pounds sterling in relation to such foreign currency will reduce the value of the investment in the Shares or any dividends in foreign currency terms.</p>

<b>Offer</b>		
E.1	<b>Net Proceeds / Expenses</b>	<p>Not applicable. This Prospectus relates to the application for admission of the Shares to listing on the premium listing segment of the Official List and to trading on the Main Market only. No new Shares are being issued by the Company in connection with Admission.</p> <p>The total costs, charges and expenses payable by the Company in connection with or incidental to Admission, including FCA and London Stock Exchange fees, are estimated to be approximately £2.0 million (exclusive of VAT).</p>
E.2	<b>Reasons for the Offer / Use of Proceeds</b>	<p>Not applicable. This Prospectus relates to the application for admission to listing of the Shares to the premium listing segment of the Official List and admission to trading on the London Stock Exchange's Main Market for listed securities only. No new Shares are being issued by the Company in connection with Admission and the Group is not raising any new capital.</p> <p>The Directors believe that a premium listing will support the long-term strategy of the Company by providing the Company with a more appropriate platform for its growth and is in keeping with the nationally significant nature of the Project and the Company's market capitalisation, which as of the date of this Prospectus is in excess of £1,030,717,315. In addition, the Directors believe that Admission will raise the Company's global profile, increase its trading liquidity and provide the Company with a greater range of potential investors for its Shares.</p>
E.3	<b>Terms and conditions of the Offer</b>	<p>Not applicable. This Prospectus relates to the application for admission to listing of the Shares on the premium listing segment of the Official List and admission to trading on the London Stock Exchange's Main Market for listed securities only. No new Shares are being issued by the Company in connection with Admission.</p>
E.4	<b>Material interests</b>	<p>Not applicable. This Prospectus relates to the application for listing of the Shares on the Official List and admission to trading on the Main Market only. Other than as disclosed in B.6, there are no other interests including conflicting interests that are material in the context of Admission.</p>
E.5	<b>Selling Shareholder/ Lock-up arrangements</b>	<p>Not applicable. This Prospectus relates to the application for listing of the Shares on the Official List and admission to trading on the Main Market only. No Shareholders are offering to sell Shares in connection with Admission.</p> <p>In connection with the 2016 Firm Placing and Placing and Open Offer, the Company agreed, subject to customary exceptions, to a 180 day lock-up period from 28 November 2016, during which time it agreed not to issue any Shares or rights to subscribe for Shares without the prior written consent of J.P. Morgan Cazenove and Liberum Capital Limited.</p>
E.6	<b>Dilution</b>	<p>Not applicable. This Prospectus relates to the application for admission to listing of the Shares to the premium listing segment of the Official List and admission to trading on the London Stock Exchange's Main Market for listed securities only. No new Shares are being issued by the Company in connection with Admission.</p>
E.7	<b>Estimated expenses charged to the investor by the issuer</b>	<p>Not applicable. There are no commissions, fees or expenses to be charged to investors by the Company in connection with Admission.</p>

## PART 2

### RISK FACTORS

*An investment in the Company and the Shares is subject to a number of risks. Accordingly, investors and prospective investors should carefully consider all of the information set out in this Prospectus including, in particular, the risks described below prior to making an investment in the Shares. The Group's business, financial condition, results of operations or prospects could be materially and adversely affected by any of the risks described below. In such cases, the market price of the Shares may decline and investors may lose all or part of their investment.*

*The risks below are all those which the Directors are aware of as at the date of this Prospectus and which they currently believe may materially affect the Company or Group. These risks should not be regarded as a complete and comprehensive statement of all potential risks and uncertainties. The risks set out below are based on information known at the date of this Prospectus. Additional risks and uncertainties that are not presently known to the Directors, or which they currently deem immaterial, may exist or become material and could adversely affect the Company or Group and could also have a material adverse effect on the Group's business, financial condition, results of operations and prospects. This Prospectus also contains estimates that involve risks and uncertainties. The Group's results may differ significantly from those previously estimated as a result of certain factors, including the risks which the Group faces, as described below.*

*The information given is at the date of this Prospectus and, except as required by the FCA, the Prospectus Rules or any other applicable law, will not be updated. Any forward-looking statements are made subject to the reservations specified under paragraph 3 ("Use of Estimates and Forward-Looking Information") of Part 5 ("Presentation of Information") of this Prospectus.*

#### RISKS RELATING TO THE COMPANY'S BUSINESS

- 1. The Company has no current revenue source and a history of operating losses, and there is an expectation that it will generate operating losses for the foreseeable future. The Company is unlikely to achieve revenues or profitability for some time, if at all.***

The Company is focused on the extraction of polyhalite in North Yorkshire, United Kingdom – the North Yorkshire polyhalite project (the **Project**). For more information on the Project, see Part 7 ("**Business Description**") of this Prospectus. The Project is in the development phase and as a result, the Project is not yet generating any production or revenues. The Company has incurred operating losses each year since its inception, primarily in the form of administrative expenses related to preparatory studies, exploration and the acquisition of appropriate permits and licences. During the nine months ended 31 December 2015 and the year ended 31 December 2016, the Group's consolidated operating losses were £7.4 million and £11.9 million, respectively, due primarily to administrative expenses.

On 28 November 2016, the Company completed the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering to provide partial funding for an initial construction phase (the **Initial Construction Phase**) intended to achieve first commercial production from the mine by the end of 2021 with production capacity ramping up to 10 million tonnes per annum (**mtpa**) over the subsequent three years. The development of the Project will require the commitment of substantial financial resources and losses may continue to occur even after the Initial Construction Phase is completed. The Project's capital funding requirement is currently forecasted at US\$2.9 billion (the **Capital Funding Requirement**) to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after 1 January 2017 (the **Construction Commencement Date**) (the **Capital Funding Period**). This is in addition to US\$0.2 billion in additional capital costs to reach production capacity of 10 mtpa which the Company anticipates funding from operating cash flow once production commences. In order to fund the significant capital requirements needed to bring the Project into production, the Company will need to incur significant indebtedness during the Initial Construction Phase, over multiple years. While the Company has sufficient funds at present to meet the capital requirements of its stated short-term strategy for the next 12-24 month period, if the Company is unable to raise the necessary debt financing in future years it may not be able to ensure that the Project will become operational, that commercial production will commence on schedule or at all, or that, once it does, it will generate sufficient revenues to fund the Company's continuing operations or to allow the Company to achieve or sustain profitability. See Risk Factor 4

*(“The Company has significant capital needs over the next several years, and adequate financing may not be available.”)* of this Part 2.

Under the 2016 Convertible Bond Offering, and once the additional indebtedness is incurred under the Stage 2 Financing, the Company will be required to make substantial payments of principal and interest and these payments may have priority over the operating needs of the business, the further capital requirements of the Project, and returns to holders of Shares. As a result, if the Project fails to become operational and generate revenues, if commercial production fails to commence on schedule or at all, or if capital requirements or operating costs are significantly higher than projected, the Company may be unable to repay its indebtedness and could as a result face acceleration of maturities and risk becoming insolvent or otherwise ceasing operations, resulting in a significant or total loss of investment by holders of Shares.

**2. *The Company is completely dependent on its ability to successfully execute the Project.***

The Project is the Company’s principal asset. Since the acquisition by the Company of the Project in January 2011, the Company has incurred costs for exploratory, scoping and feasibility studies, including the definitive feasibility study (DFS) and for permits and planning consents on critical infrastructure. During the Initial Construction Phase, the Company will be subject to all of the risks associated with establishing new mining operations and business enterprises, including:

- the impact of any inclement weather and natural disasters, industrial accidents or other impediments affecting the timing and cost of the construction of mining and processing facilities and related infrastructure;
- the lack of availability and cost of skilled labour and mining equipment;
- the lack of availability of sufficient funds to finance construction and commence commercial production;
- potential opposition from non-governmental organisations, environmental groups or local residents, which may delay or prevent exploration, development or construction activities;
- unexpected design or construction delays or failures;
- the inability to comply with the conditions attached to the various permissions, licences and permits required for the Project; and
- potential increases, over the course of the construction period, in construction and operating costs due to changes in the cost of fuel, power, labour, materials and supplies and foreign exchange rates.

It is common for new mining infrastructure to experience unexpected costs, problems and delays during construction, often resulting in significant upward revisions to expected costs and/or delays. Thus, the capital cost estimates which comprise the Company’s current capital funding plan may increase significantly during construction and as initial phases of the Project are completed. While the Company has commenced construction and has sufficient funds at present to meet the capital requirements of its stated short-term strategy for the next 12-24 month period, there is no assurance that the Company will successfully develop the Project at all or that it will not experience significant delays or additional costs in doing so. In addition, there can be no assurance that the construction of the Project will result in the production of polyhalite in commercially viable quantities such that the Company will be able to generate sufficient revenues to fund its continued operations, or generate or sustain profitability in any future period. See also Risk Factor 3 (*“The Company has no history of commercially producing polyhalite and there can be no assurance that it will successfully and profitably market polyhalite.”*) of this Part 2. The Company’s failure to commence commercial production on its intended timetable or at all, would materially and adversely affect its business, prospects, financial condition and results of operations.

**3. *The Company has no history of commercially producing polyhalite and there can be no assurance that it will successfully and profitably market polyhalite.***

Since the acquisition by the Company of the Project in January 2011, the Company has invested substantially all of its financial and other resources in the development of the Project and for the planned production and sale of polyhalite. In addition to investments in the Project site, this expenditure has also included significant expenditure on the Company’s global agronomic programme. The mining of polyhalite for fertilizer use is a relatively new phenomenon, with only one other polyhalite mine known to be currently in operation. Thus, the Company’s marketing efforts are focused on demonstrating the advantages of polyhalite to customers as an alternative to traditional

fertilizer products. There can be no assurance that the Company will be successful in convincing customers of the efficacy of POLY4, its trademarked polyhalite product. A failure to establish the commercial viability of such use and thus support ongoing discussions with customers around the globe would result in a failure to create commercially viable levels of market demand for POLY4, at the selling prices anticipated by the Company or at all. If the Company fails to generate commercially viable levels of market demand for POLY4 at the selling price anticipated by the Company, the Company may fail to reach its anticipated level of commercial production or revenues, and as a result the Company may be unable to repay its indebtedness and could face acceleration of maturities and risk becoming insolvent or otherwise ceasing operations, resulting in a significant or total loss of investment by holders of Shares.

**4. *The Company has significant capital needs over the next several years, and adequate financing may not be available.***

The Company's current activities do not generate any revenues or positive operating cash flow, and construction on the Project and the development necessary to commence production and generate revenues will require significant capital expenditures. As at 31 December 2016, the Company had financial assets of £666.7 million. This includes £82.9 million in restricted cash not available for general use (equivalent to US\$102 million placed in an escrow bank account in respect of all coupon payments due until 28 November 2019 in respect of the 2016 Convertible Bond Offering) as well as £260.2 million of cash and cash equivalents in instant access deposits. The Company also holds £322.2 million held in bank deposits. These are multiple term and notice bank deposits held at several highly rated banks and money market funds at multiple different interest rates (generally fixed rate) and with varying maturities, up to a maximum of twelve months.

The Company estimates that its Capital Funding Requirement will be approximately US\$2.9 billion during the Capital Funding Period, of which approximately US\$1.1 billion (the **Stage 1 Capital Funding Requirement**) is expected to be required over approximately the first three years following the Construction Commencement Date. The Stage 1 Capital Funding Requirement will be funded by the Stage 1 Financing proceeds comprising the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering, which completed in November 2016, and the Royalty Financing, in connection with which the Company and certain of its subsidiaries entered into an agreement with Hancock British Holdings Ltd (**Hancock**), a privately owned company which operates in the mining and agricultural sectors and a subsidiary of Hancock Prospecting Pty Ltd. The agreement with Hancock (the **Royalty Financing Agreement**) is further described in paragraph 11.6.3 ("*Royalty Financing Agreement*") of Part 12 ("*Additional Information*") of this Prospectus. Under the Royalty Financing Agreement, Hancock agreed to: (i) purchase a royalty on the Project amounting to 5 per cent. of gross revenue (less allowable deductions) on the first 13 mtpa of sales in each calendar year and 1 per cent. for sales volumes above 13 mtpa (which is subject to a product categorisation adjustment) in return for US\$250 million (the **Royalty**); and (ii) subscribe for 200,076,829 Shares in the Company in return for US\$50 million. The outstanding conditions to completion of the Royalty and the purchase and subscription of the Shares (together, the **Royalty Financing**) include, *inter alia*, the Company having obtained financial commitments for a minimum of US\$1.088 billion (broadly approximating the Stage 1 Capital Funding Requirement and including the purchase price for the Royalty and the subscription price of the Shares to be issued pursuant to the Royalty Financing). Drawdown of the Royalty Financing will take place only once the Group has taken forward its development plans through capital expenditure of US\$630 million of the other Stage 1 Financing.

The Company has entered into a mandate letter (the **Mandate Letter**) with six financial institutions, Export Development Canada, ING, J.P. Morgan, Lloyds Bank plc, Société Générale Corporate & Investment Banking and The Royal Bank of Scotland Plc (the **Mandated Lead Arrangers**), in connection with a potential senior debt financing which would constitute a second financing stage for the Project. This second stage of the financing is intended to fund the remaining costs, currently estimated at US\$1.8 billion (the **Stage 2 Capital Funding Requirement**), to complete construction of the Project, plus obtaining commitments from lenders intended to provide the Company with the capacity to pay financing costs (comprising interest expenses, principal repayment amounts as well as administrative costs, fees and other charges associated with the financing) of up to US\$0.8 billion for a total of up to US\$2.6 billion (the **Stage 2 Financing**). Stage 2 Financing is currently expected to be fully funded by senior debt facilities which are currently expected to be committed approximately two years after the Construction Commencement Date, prior to commencement of tunnelling works, and drawn down after the Stage 1 Financing proceeds have been utilised, which is expected to be approximately three years after the Construction Commencement Date.

The Royalty Financing and the Stage 2 Financing are subject to multiple inter-dependent components and conditions precedent. See Risk Factor 5 (“*The successful completion of the Royalty Financing and the Stage 2 Financing and thus timely construction of the Project infrastructure relies on the occurrence of several events, some of which are outside the Company’s control.*”) of this Part 2 and paragraph 8.3 (“*Project Economics*”) of Part 7 (“*Business Description*”) of this Prospectus. If any single condition to the Royalty Financing or the Stage 2 Financing is not met, or if the Stage 2 Financing is not available, the Company may be unable to replace those components with alternative sources of funding on commercially attractive terms, or at all. While the Company has sufficient funds at present to meet the capital requirements of its stated short-term strategy for the next 12-24 month period, if the Company cannot raise the additional capital required in order to meet its funding requirements thereafter, commencement of commercial production may be significantly or indefinitely delayed. This would result in the slippage of the projected polyhalite production schedule or the cancellation of the Project altogether, which would cast doubt on the Company’s ability to continue as a going concern. Even if the currently identified capital requirements of the Capital Funding Period are met, there can be no assurance that the Company’s actual capital needs will not increase significantly over the course of the development of the Project nor, that if such cost increases were to occur, the Company would be able to find additional capital on commercially attractive terms, or at all. Moreover, the planned Stage 2 Financing is dependent not only on the timely completion of the Royalty Financing, but also on additional factors which are outside of the Company’s control or inter-conditional upon one another. For example, the Company’s ability to draw upon any facilities made available as part of the Stage 2 Financing is likely to be dependent on demonstrating sufficient potential cash flow through a volume of confirmed take-or-pay offtake agreements satisfactory to the Mandated Lead Arrangers.

In order to prevent delays to the construction schedule, the Company may choose to raise additional capital through the issuance of new Shares, additional convertible bonds, or other forms of equity or structured finance, any of which could dilute the holdings of existing Shareholders. Even if additional capital is available, it may not be sufficient to cover any capital shortfall, and as a result the Project may fail to become operational and generate revenues, may fail to achieve commercial production on schedule or at all, and the Company may be unable to repay the substantial indebtedness it plans to incur to fund the Initial Construction Phase of the Project.

Furthermore, the Company’s estimates for the Capital Funding Period do not include estimated costs for mobile mining equipment and outsourced harbour and handling infrastructure, which it currently estimates to be an additional US\$439 million during the Capital Funding Period. Although the Company’s expectation is that the capital costs for these items will be outsourced to third parties, if such third party funding is not available, the Company will have to acquire additional funding to make up this shortfall, which it may not be able to obtain on commercially reasonable terms, or at all.

**5. *The successful completion of the Royalty Financing and the Stage 2 Financing and thus timely construction of the Project infrastructure relies on the occurrence of several events, some of which are outside the Company’s control.***

Both funding stages of the Capital Funding Period are reliant on certain events which are outside of the Company’s control. If the Royalty Financing fails to be completed, or if any of the conditions precedent to the Royalty Financing are not met, there is no assurance that the conditions will be waived or that the Royalty Financing will be completed as currently contemplated by the Company.

Moreover, the planned Stage 2 Financing is also dependent on the timely completion of the Royalty Financing, and on additional factors which are outside of the Company’s control or inter-conditional upon one another. Although the Mandated Lead Arrangers have entered into the Mandate Letter with the Company in respect of a potential senior debt financing, the Mandate Letter does not constitute a binding commitment to underwrite, provide or secure any Stage 2 Financing, which remains subject to ongoing due diligence, the completion of definitive facility documentation and credit and other approvals, among other things. There can be no assurance that the approvals and conditions included in the Mandate Letter will be met, that the Company will have secured committed financing at the time that it intends to draw upon the Stage 2 Financing, or that the Mandated Lead Arrangers or other lenders will be willing to lend at that time. For example, the Company’s ability to draw upon any facilities made available as part of the Stage 2 Financing is likely to be dependent on demonstrating sufficient potential cash flow through a volume of confirmed take-or-pay offtake agreements satisfactory to the Mandated Lead Arrangers. Although the Company currently has in place binding Offtake Agreements for 3.6 mtpa of POLY4 at their respective full

volumes, there is no assurance that these volumes will be sufficient or that the Company will be able to agree sufficient additional agreements. In addition, the Mandated Lead Arrangers will require that all primary vendor contracts be agreed and signed with the terms satisfactory to the Mandated Lead Arrangers prior to any ability to draw funds under the Stage 2 Financing. Although the Company has appointed various preferred contractors for the Project, as of the date of this Prospectus, it does not have full construction contracts in place for all aspects of the Project and may fail to agree these contracts to the satisfaction of the Mandated Lead Arrangers. Finally, the Company expects to receive the benefit of a guarantee from Her Majesty's Treasury (HMT) under the UK Guarantee Scheme (the UKGS) for a component of the Stage 2 Financing. The UKGS was established in order to provide projects with access to a sovereign backed guarantee to help projects access finance. The Company received a letter of prequalification of the Project for the UKGS from the Infrastructure and Projects Authority (the IPA, formerly Infrastructure UK) in September 2015 and a subsequent letter in August 2016 following discussions with the Company about the Stage 2 Financing plan, with IPA confirming their intention to support the Stage 2 Financing. The existence of this guarantee, if granted, is likely to have a substantial influence on the willingness of lenders to lend to the Company. However, approval of this guarantee in time for the Stage 2 Financing, or at all, cannot be assured, as it remains subject to completion of due diligence by the IPA and the IPA's approval of the structure, terms and documentation of the proposed facilities, among other things.

Should any of the events or conditions upon which the success of the Royalty Financing or the Stage 2 Financing relies not occur or be significantly delayed, capital funding for the Project would be in jeopardy which would cast significant doubt on the Company's ability to continue as a going concern.

**6. *The Company's future indebtedness could adversely affect its financial condition and impair its ability to operate its business.***

As described in Risk Factor 4 (*"The Company has significant capital needs over the next several years, and adequate financing may not be available."*) of this Part 2, the Company has raised significant debt amounting to US\$400 million from the 2016 Convertible Bond Offering as part of the Stage 1 Financing and may incur up to an additional approximately US\$2.6 billion in the Stage 2 Financing in order to complete the Initial Construction Phase of the Project and fund related financing costs. See paragraph 8.3 (*"Project Economics"*) of Part 7 (*"Business Description"*) of this Prospectus. While the Company has sufficient funds at present to meet the capital requirements of its stated short-term strategy for the next 12-24 month period, there can be no assurance that cost estimates to complete the Project will not increase as construction progresses. Therefore, the amount of debt financing required to be raised in the Stage 2 Financing may increase throughout the development and into the operation of the Project. This indebtedness may have important consequences, for the Company's business, financial condition or results of operations, including that:

- it could limit the Company's ability to incur additional debt or issue additional equity to fund working capital, capital expenditures, or debt service requirements;
- it may contain covenants or other terms that may negatively impact the Company's business or Shareholders;
- it could limit the Company's flexibility in planning for, or reacting to, changes in the implementation of the Project or to other changes in its business, including benefiting from improved prices for its polyhalite, as a result of having a substantial percentage of production locked into pre-existing Offtake Agreements demanded by financing terms;
- it could require the Company to dedicate a substantial portion of its cash flow from operations to the repayment of its indebtedness, thereby reducing the availability of its cash flow for other purposes, such as funding the anticipated increase in production capacity and volumes; and
- it could, as a fixed cost, make the Company more vulnerable once the Project is operational, to a downturn in its business or the economy that negatively impacts its revenues.

The above factors could limit the Company's financial and operational flexibility and this could have a material adverse effect on its business, results of operations or financial condition.

**7. *The Company's business is subject to significant geotechnical risks which may increase the Project's capital funding requirements or operating costs.***

Construction will be subject to geotechnical hazards and risks normally associated with the development and production of natural resources, any of which could result in additional capital or operating costs, significant delays, production shortfalls or damage to persons, property or the

environment. In particular, hazards associated with the Company's underground mining operations include those relating to unanticipated geological anomalies or other geological characteristics for which plans and projections for the Project will have to be amended and also include:

- dewatering, reduced groundwater recharge, redirection of groundwater flow, or flooding;
- shaft and tunnel structural integrity issues including cave-ins or ground falls;
- underground fires and explosions, including those caused by flammable gas;
- discharges of gases in the air or lubricants and fuel oil into watercourses;
- sediment loading or sinkhole formation and ground subsidence; and
- seismic activity.

In order to mitigate these and related risks the Company will have to complete a significant amount of additional work to further refine mitigation, remediation and optimisation measures integral to the mine, MTS, MHF and harbour facilities design. In particular, the Company's independent consultant, SRK Consulting (UK) Ltd (**SRK**) has noted that further hydrological testing, ground investigations/geotechnical analysis and tunnelling design work will be needed for the MTS and the harbour facilities even as the initial shafts are sunk. These future reviews have the potential to result in design changes and capital cost increases with respect to these aspects of the Project. For example, with respect to the harbour, dredging may cause ground deterioration, requiring remediation. The success of the Project depends to a significant extent upon the Company's ability to complete construction and commence commercial production within the planned timeframe and in accordance with its current capital and operating cost estimates, and any further work and imposed conditions may require an increase in planned capital expenditure and construction time before the Project becomes operational.

**8. *Polyhalite is not currently a mainstream fertilizer product, and the Company may not be successful in its efforts to market its polyhalite as an effective alternative to other potassium-based fertilizers.***

POLY4 is expected to compete for market share primarily with existing mainstream fertilizers containing one or more of the nutrients potassium, sulphur, magnesium and calcium. At current global production levels, polyhalite is considered a niche fertilizer product, primarily marketed as either a low chloride source of potassium or as a primary source of sulphur. Although the Company believes it can successfully market polyhalite, there can be no assurance that it can do so. In order to successfully execute its strategy, the Company will need to create a market for polyhalite by convincing customers of the effectiveness and economic viability of polyhalite as a substitute for existing products, which, despite the advantages the Company believes it can demonstrate, may be difficult given that the product is new and will require customers to change their historical practices. Further, existing fertilizer producers may lower the prices of their products if they perceive the Company's product to be a significant threat to their market share, which may preclude the Company from selling POLY4 at commercially viable prices. Any of these challenges, if not overcome, could have a material adverse effect on the Company's business, financial condition or results of operations.

**9. *The Company has entered into take-or-pay offtake agreements with various customers which rely upon the Company's ability to generate production of polyhalite and the customers' ability to meet their obligations.***

As of the date of this Prospectus, the Company has signed take-or-pay offtake agreements (**Offtake Agreements**) for the total purchase of up to 3.6 mtpa at their respective full volumes from customers in China, North America, Central America and South America. Certain customers also have options to purchase an additional 0.9 mtpa in aggregate. In addition, there are other non-binding commitments in the form of memoranda of understanding (**MoUs**), framework sales agreements (**FSAs**) and letters of intent (**LoIs**) between the Company and/or its agents and potential customers in the amount of a further 3.6 mtpa (2.0 mtpa in MoUs, 0.5 mtpa in FSAs and 1.1 mtpa in LoIs). The Company's ability to successfully realise the economic benefits of such agreements is subject to certain risks and conditions, which could materially impact the economic value of these agreements to the Company or even result in the termination thereof.

Under its Offtake Agreements, the Company's customers typically agree to purchase a certain minimum amount of POLY4 per annum for a fixed number of years, commencing upon first production, which is currently expected to occur in 2021. These agreements will not generate any sales or revenue to the Company until it is able to produce commercial quantities of polyhalite. However, there can be no assurance that the Project will produce polyhalite in sufficient quantities for the



Company to meet its obligations in the timeframe set out in the Offtake Agreements. See also Risk Factor 2 (“*The Company is completely dependent on its ability to successfully execute the Project.*”) of this Part 2. The Offtake Agreements may also include the requirement to prove the effectiveness of polyhalite, to obtain appropriate licences and to obtain certifications for import and sale in various jurisdictions, as well as other terms and conditions which may not necessarily be favourable to the Company. In addition, the Company’s Offtake Agreements may provide that the price to be paid by its customers for at least a portion of the ordered volume will be linked to the market price of various nutrients contained in POLY4. If the resulting market price for polyhalite is materially lower at the time of future sales under the agreements as compared to the Company’s current estimate of the expected price, the revenues generated by these Offtake Agreements would be materially below the Company’s current expectations.

In the event that the Company is unable to meet any of its obligations under its Offtake Agreements or any of the conditions imposed by the agreements, or if the Company is required to sell POLY4 at a lower price than expected under its agreements, the economic value of these commitments to the Company would decrease. If significant Offtake Agreements were to be terminated or re-negotiated (for example, for failure to achieve a Project milestone or force majeure), there can be no assurances that the Company will be able to enter into similar agreements with other counterparties. For that proportion of its production volume that is not covered by Offtake Agreements for any given period, the Company will be required to sell at the then-prevailing market price and thus will be exposed to commodities prices at any specific moment in time.

Furthermore, these Offtake Agreements expose the Company to any inability of its counterparties to pay for their commitments or otherwise fulfil their obligations under the agreements. The Company’s Offtake Agreements currently represent 36 per cent. of the Project’s 10 mtpa initial production capacity. If one or more of its significant Offtake Agreement customers experience financial or liquidity issues, and are unable to pay their committed amounts to the Company in a timely manner or at all, the Company would have to sell the relevant volume of POLY4 in the open market. There can be no assurance that the Company would be able to effect those sales at prices comparable to those agreed in the Offtake Agreements, or at all. If the Company is unable to make up any shortfall in revenue anticipated under its Offtake Agreements, it could experience a material adverse effect on its business, financial condition or results of operations.

Additionally, it is anticipated that the Stage 2 Financing will be conditional on securing of a certain level of Offtake Agreements, and the ability to secure or maintain this financing could be jeopardised if the Company were to lose a threshold of Offtake Agreements, because either it or a counterparty defaults on a given agreement.

***10. New technologies may negatively impact the demand for polyhalite through the creation of new competing fertilizers or less costly methods of producing existing fertilizers, either of which could adversely affect the Company’s operating results.***

The demand for the Company’s polyhalite may be negatively impacted by advances in technology and the development of new competing fertilizers. For example, more efficient application methods for plant nutrition products or the development of more desirable substitutes may reduce overall demand for fertilizers such as polyhalite. Also, new technologies may emerge to lower the cost of production for substitute products which would place cost pressures on the Company and impact its ability to competitively market polyhalite as a commercially viable substitute fertilizer. Any of these developments could have a material adverse effect on the Company’s business, financial condition or results of operations.

***11. The Company’s current and anticipated future operations are dependent on receiving the required permits and approvals from government authorities. Denials or delays by a government agency in issuing any permits and approvals, imposition of restrictive conditions on such permits and approvals or a failure to comply with the terms of any permits already granted may have a material adverse effect on the Company’s business and operations.***

The Company has obtained the necessary permits and approvals from various government authorities authorising commencement of work on the Project and its future operations. There are various consents required for key elements of the Project, principally comprising the following:

- the Woodsmith mine, including the mine head site (formerly known as Dove’s Nest Farm);
- the Mineral Transport System (MTS);
- the Materials Handling Facility (MHF); and

- the harbour facilities at Bran Sands, Teesside.

In addition, there are two park and ride facilities, being a temporary park and ride facility to transport construction workers to the mine and MTS construction sites with the option to establish a construction work village (the **Construction Park and Ride**), and a mine operations park and ride facility to the west of Whitby (the **Operations Park and Ride**).

As at the date of this Prospectus, all the principal consents required for the construction and operation of all elements of the Project have been obtained. However, the permissions for the mine, the MTS and MHF are all subject to a total of 158 conditions, including a condition that development should commence within three years of the date of the permission, failing which the permission will lapse. If a planning permission lapses, then it will be necessary for the Company to apply for a new permission, which will involve a new planning application and environmental impact assessment. In the event that any of the existing planning permissions lapse, the Company anticipates being able to secure new permissions, given that the principle of acceptability of the development has been established by the existing permissions, subject to any material change in circumstances or relevant planning policies. In addition, as is usual in large construction projects, the Company may seek amendments or variations to existing approvals or new applications to incorporate further project-enhancing design changes where such new application, amendments or variations may provide efficiencies or otherwise be desirable, provided that such applications, amendments or variations do not impact the existing approvals.

Each planning consent has attached to it a number of planning conditions with which the Company is required to comply prior to and/or during the construction and operation of the relevant element of the Project. Equivalent conditions are also contained in a development consent order, the York Potash Harbour Facilities Order 2016, approved by the Secretary of State for Transport on 20 July 2016 (the **DCO**). These conditions relate to the potential environmental impact of development, the design of building, construction methodology and the measures required to deal with the impact of traffic. The Company is currently implementing a programme to manage compliance with such conditions. If any of the conditions are not complied with, the relevant granting authority can enforce compliance via a variety of enforcement methods. None of these enforcement methods would result in the relevant planning permission being invalidated, but could potentially result in financial penalties being levied against the Company.

Furthermore, there are various secondary permits or approvals that the Company and/or its contractors require for the conduct of its construction and operations. These secondary permits include but are not limited to environmental permits, water discharge permits, ecological licences, land drainage consents, spoil management permits and hazardous waste producer registration. There is no assurance that all secondary permits will be granted pursuant to the applications made, that such permits will not be delayed, or that such permits will be granted on favourable conditions or at all. In the event that secondary permits or approvals are not obtained on time, on terms that are favourable to the Company, or at all, this could result in an increase in budgeted Project costs and/or delays to completion.

In addition to the planning conditions, agreements pursuant to section 106 (**S106**) of the Town and Country Planning Act 1990 have been entered into by the Company and the relevant authorities to regulate further aspects of the Project. These obligations include payment of monetary contributions to offset potential impacts of the development on the environment and to support the surrounding community by, among other things, contributing towards education of the labour force, provision of employment opportunities and improvements in public infrastructure, as well as for reinstatement security in the event mine operations cease. The expected cost implications of the Company's community obligations on a real (actual) 2016 basis, are approximately US\$136.3 million over the life of the mine, with specific amounts modelled from 2016 to 2030 varying between US\$0.1 million and US\$9.1 million per annum followed by a constant annual amount of US\$2.1 million per annum from 2031 until the end of the life of the mine. The Company is required to have payment security arrangements in place sufficient to pay some of the contributions under its S106 agreements due for approximately 12 years thereafter.

The Company's current planning permissions anticipate a maximum production capacity of 13 mtpa, which differs from the long term forecast of 20 mtpa in the Company's plan for the Project. Any increase of production capacity above 13 mtpa will therefore necessitate amendments to the current permissions. The amendments may require the Company to undertake additional capital investment that is not currently anticipated, impose further planning conditions and/or require additional

monetary contributions to local authorities. The scale or content of any additional investment required to obtain this amended permission is unclear at this stage of the Project, nor can it be assured that these amendments will be obtained at all.

**12. *Uncertainties inherent in the Company's estimates of Mineral Resources and Ore Reserves and the resulting mine design could result in lower than expected sales or higher than expected costs, adversely affecting the Company's financial condition and results of operations.***

There are numerous inherent uncertainties with respect to estimating the Company's polyhalite Mineral Resources and Ore Reserves, which are based on engineering, economic and geological data assembled and analysed by the Company's engineers and geologists, as well as by the Company's independent consultants, SRK. These Mineral Resources and Ore Reserve estimates depend to some extent on statistical inferences drawn from available drilling data, which may prove unreliable. In addition, the Company's estimates depend on a number of assumptions, including assumptions in respect of the following:

- geological and mining conditions, which may not be fully identified by available exploration data;
- variations in mineralogy;
- future market prices, operating costs, capital expenditures, recovery rates, tax rates, and development and reclamation costs; and
- the effects of governmental regulation.

Any of these factors may not be fully accounted for by available exploration data and may differ from the Company's experience once it begins mining operations. For example, the geometry of the polyhalite seam could potentially be more complex than has been modelled based on exploration work to date. In addition, due to the reliance on these assumptions, estimates of Ore Reserves cannot be audited for the purpose of verification, and it is only after extraction that estimates can be compared to actual values in order to further refine the estimates of remaining Mineral Resources and Ore Reserves. Even the use of geological data and other technologies and the study of producing mines in the same geographic area as the Project will not provide certainty in respect of Mineral Resources and Ore Reserve levels, or commercial recoverability, prior to mining. It should be noted that there is no certified reference material for polyhalite and therefore the Company's estimates of the quality of the polyhalite available (based, for example, on the percentage of potassium in a given sample) are based on a number of bespoke analytical standards and protocols used to analyse drill-hole cores extracted. There can be no assurance that the Company's or SRK's estimates will be accurate or that the Project will yield Mineral Resources and Ore Reserves in sufficient grades or quantities to recover future development costs or support commercially viable mining.

Because the Company has not commenced mining or commercial production within the Project, Mineral Resources and Ore Reserve estimates may require adjustments or downward revisions based upon further exploration or development work or actual production experience. In particular, extended periods of low market prices for polyhalite, and specifically for POLY4, may render portions of the Company's current Mineral Resources and Ore Reserve estimates uneconomic or adversely affect the commercial viability of the Project.

In September 2016, the Company's independent consultants, SRK, reported that the Project has a **Probable Ore Reserve** of 280.2 million tonnes with a mean polyhalite grade of 88.4 per cent from a total Indicated and Inferred Mineral Resource of 2.66 billion tonnes of polyhalite with a mean polyhalite grade of 85.7 per cent. The Probable Ore Reserve is a sub-set of the Indicated Mineral Resource and not additive. It should be noted that the Company is targeting retrieval of material with a polyhalite grade of 88 per cent. or above and will therefore have to be selective in its mining strategies which may impact production levels.

Furthermore, the practice of mining for polyhalite is in its infancy and as a result, parameters for the design of a polyhalite mine are uncertain and the potential for unforeseen or unique challenges for the Project is higher than if the proposed extraction was of a more conventional mineral. For example, polyhalite is a stronger material than would normally be mined mechanically. As such, the cutting conditions are expected to be challenging, requiring more advanced cutting equipment and control methodologies than have been previously used in the potash industry, which may impact production rates or costs estimated as part of the mine design.

If any of the assumptions made by the Company or by SRK in connection with the Company's Mineral Resource or Ore Reserve estimates are incorrect, or the Company's mining strategy proves

inappropriate, the commercially viable amounts of polyhalite the Company will be able to recover could be significantly lower than its estimates, which may result in a shorter resource life of the Project, substantially lower levels of Mineral Resource and Ore Reserves, lower than expected sales, higher than expected costs, and a material adverse effect on the Company's financial condition and results of operations.

***13. The Company's title and other rights to the Project and its associated mineral rights cannot be guaranteed, and the Company may be at risk of loss of ownership of property rights to the Project.***

The Company's subsidiary York Potash Limited (YPL) has converted its option agreements with relevant mineral rights owners into leasehold interests. These lease arrangements will be for 70 years each commencing from 2016/2017, with a right to extend for a further period of 60 years. These mineral rights agreements cover approximately 89 per cent. of the Project's estimated Indicated Mineral Resources as of the date of this Prospectus. Further work is on-going to identify ownership of and acquire the remaining 11 per cent., failing which it is expected that there will be future applications for compulsory acquisition. As part of this process, the Company commissioned counsel to identify issues to be resolved prior to completing the leases or exercising the rights thereunder, including scenarios where the mineral rights have been transferred to another owner and where minerals are now held by the estate of a deceased owner. However, there can be no assurance that such mineral interests are free from title defects. Failure to properly secure all of the necessary mineral rights would reduce the life of the mine currently contemplated and may affect the economic feasibility of the Project.

In addition to mineral interests, the Project is also reliant on the future successful acquisition of real property and other rights key to the Project. In particular, it is envisioned that construction of the harbour element of the Project will be undertaken concurrently with mine shaft sinking and MTS tunnelling work, but this is dependent on procuring the relevant land rights and securing agreements from the Crown Estate for the dredging and construction of the quay. See paragraph 9 ("*Leases, Licences and Permitting*") of Part 7 ("*Business Description*") of this Prospectus.

The Company's legal title to its properties or mineral interests may be subject to challenge. In the United Kingdom, mineral rights and surface rights are not conjoined, and the land registry system is focused on surface rights rather than mineral rights, which introduces some uncertainty with respect to property rights or the right to develop a property. Although the Company has made an effort to confirm mineral rights ownership before entering into agreements and leases with the mineral rights owners, there can be no assurance that the Company has obtained all necessary property rights in order to develop the Project. For example, certain of the Company's mineral interests may be subject to prior agreements, transfers or claims, and title may be affected by, among other things, undetected defects. A successful challenge to the precise area and location of these claims could result in the Company being unable to construct the mine or relevant infrastructure on its properties as permitted or being unable to enforce its rights with respect to its properties. This may result in the Company being unable to complete the Project on time or according to current cost estimates or may impact the Company's future ability to explore and develop any of its mineral interests.

***14. As a mining enterprise, the Company is subject to various environmental risks and must comply with legislative, regulatory and licensing restrictions in the areas of environmental protection and safety.***

The Company is designing and implementing an in-house environmental management system in accordance with international standards. Although the Company intends to take appropriate precautions to ensure the safety of its operations and minimise the risk of disruptions, it will be subject to hazards inherent in mining and the related storage and transportation of raw materials, products and wastes. These include explosions, fires, mechanical failures, remediation complications, chemical spills and discharges or releases of toxic or hazardous substances. These and other hazards to human life and the environment are inherent in mining operations, particularly underground mining. See also Risk Factor 7 ("*The Company's business is subject to significant geotechnical risks which may increase the Project's capital funding requirements or operating costs.*") of this Part 2.

There can be no assurance, however, that the systems implemented by the Company will be adequate to manage the environmental impacts of a polyhalite mine. If unforeseen accidents or events do occur, or if the Company's environmental protection procedures are inadequately implemented or are not effective, the Company could be subject to liabilities arising out of environmental degradation, personal injuries or death, and its operations could be interrupted or it could be required to shut down or abandon affected elements of the Project. Although the Company attempts to mitigate this

risk by, among other things, engaging leading contractors and consultants in the Project development, there can be no assurance that the Company's efforts will be successful in this regard.

Environmental legislation generally provides for restrictions and prohibitions on spills, releases or emissions of various substances produced in association with certain mining industry operations which would result in environmental pollution. In recent years, there has been an increase in the stringency and enforcement of legislative directives and regulatory requirements applying to mining safety and environmental protection globally, and the cost of compliance has risen significantly. Additionally, legislative changes throughout the world may prohibit or restrict use of the Company's products, due to environmental protection, health or safety considerations. See Risk Factor 29 ("*Government policies can adversely affect the market for the Company's products.*") of this Part 2. Standards that will be adopted in the future are likely to affect the Company and may increase its costs or require it to change its methods of operation.

Any accidents, unaddressed risks or violations of planning conditions, permits licences, regulations or requirements in Project design or operation could cause temporary or longer term mine closure, could cause the Company to expend significant amounts to remediate safety issues or repair damaged facilities, could subject the Company to costly administrative and legal proceedings and the potential imposition of civil or criminal penalties, could result in the temporary or permanent closure of the Project and could expose the Company to costly reputational harm, all of which could have a material adverse effect on the Company's business, revenues, financial condition or results of operations.

**15. *Insurance may not adequately cover the risks and hazards of the development of the Project and its commercial operation.***

As described above, the Company's operations will be subject to hazards and risks associated with the exploration, development and mining of natural resources and related fertilizer materials and products, such as flooding and groundwater problems, cave-ins and ground falls, subsidence, accidents resulting from drilling, blasting and removing and processing material from an underground mine, explosions, fires, mechanical failures, remediation complications, chemical spills and discharges or releases of toxic or hazardous substances. Any of these risks can cause substantial losses resulting from injury or loss of life, damage to and destruction of property or natural resources, pollution and other environmental damage, regulatory investigations and penalties, revocation or denial of permits or approvals, suspension of operations or repair and remediation costs. See Risk Factor 14 ("*As a mining enterprise, the Company is subject to various environmental risks and must comply with legislative, regulatory and licensing restrictions in the areas of environmental protection and safety.*") of this Part 2.

The Company does not currently maintain insurance against all of the risks described above. The Company intends to procure relevant insurance coverage as the Project progresses. However, appropriate coverage may not be available at commercially viable premium levels, if at all. Insurance against certain environmental risks is not generally available to the Company or other companies within the mining industry. The Company may also experience losses in amounts in excess of any insurance coverage carried. If the Company incurs losses related to any significant events not covered by its insurance policies or incurs losses in excess of its carried coverage, such losses may have a material adverse effect on the Company's business, revenues, financial condition, results of operations or prospects or the market price of the Shares.

**16. *The Company's ability to engage qualified and reliable contractors and sub-contractors is critical to the successful development of the Project.***

The development and commercial operation of a mine, transportation system and production and harbour facilities of the size the Company has planned for the Project are expected to require hundreds of workers during the planning and construction phases as well as once the mine is in production. Much of the construction and a certain proportion of the operating activities of the Company upon the commencement of commercial production will require the Company to engage contractors, sub-contractors and consultants. The Company will require many of the same skillsets sought by other natural resource companies and it will be competing with these other natural resource companies in finding qualified contractors, sub-contractors and consultants. Furthermore, contractors will need the skills to execute the Project development plan on time and on budget, against its particular challenges (including negotiating multiple work streams in confined areas of the minehead and MTS). Since many of these skillsets are highly specialised and the pool of available suppliers is limited, the market for and availability of individuals possessing these skills will be

impacted by the overall health of the natural resource sector. If mining activity were to increase locally or globally, the Company may have increased difficulty in attracting the talent necessary to develop and operate the Project on the current timetable and at the current expected cost. Moreover, if contractors with the required skills are not available, the Company may incur significantly higher costs and experience delays in the Project.

Beyond the skills needed for natural resource extraction generally, for the construction stage of the Project the Company will establish a compliance framework and auditing procedures, but principally rely on its contractors for management of their own activities, including obtaining necessary secondary permitting and complying with the terms of the approvals, permits and licences granted in connection with the Project. This will require contractors with specific knowledge related to the North Yorkshire landscape and authorities as well as a deep understanding of the overall Project plan. Failure of a contractor to perform as expected, failure of a contractor to comply with the terms of any permit or approval that the Company or a contractor has obtained or failure of a contractor to obtain a necessary permit, may delay the completion of the Project or may interfere with the Company's planned development of the Project, which could have a material adverse effect on the Company's business, financial condition or results of operations.

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***18. The loss of key management personnel or employees could adversely affect the Company's business and financial condition.***

Due to the relatively small size of the Company and the innovation represented by the POLY4 product, the loss of key management personnel or employees or the inability to attract and retain additional highly-skilled employees required for the conduct of its operations may have a material adverse effect on the Company's business. As with the engagement of qualified contractors, the Company will require qualified employees with many of the same skillsets sought by other natural resource companies. It will be competing with these other natural resource companies in finding qualified employees, and the market for talented employees with the necessary specialised skills will be impacted by the overall health of the natural resource sector. In particular, the Company is dependent on the services of its senior management team, who have significant relevant industry and

company-specific experience that will be largely responsible for the success of the development of the Project and the marketing of polyhalite. If the Company is unable to retain sufficient experience in its senior management team, its operations could be disrupted and it may be unable to achieve its business strategies or to grow effectively.

***19. The Company's intellectual property may be misappropriated or subject to claims of infringement.***

The Company protects its intellectual property rights primarily through a combination of patent, trade mark, and trade secret protection. The Company has obtained three UK patents, one in relation to the pelletised form of the POLY4 product and one in relation to the pelletising process, and another patent related to pelletising, seed coating and other nutrient coating in the UK and internationally. The Company's patents and pending patents, which vary in duration, may not preclude others from selling competing products or using similar production processes.

The Company's important brand names, such as Sirius Minerals and POLY4, are registered as trade marks in the United Kingdom, with applications for registration likely in other jurisdictions. These registrations can be renewed if the trade marks remain in use. However, these registrations may not prevent the Company's competitors from using similar brand names or potentially confusing trade dress and the Company must remain vigilant to safeguard its registrations. Also, there can be no assurance that any pending applications for protection of the Company's intellectual property rights will be approved.

The Company also relies on trade secret protection to guard confidential unpatented technology and when appropriate, the Company requires that employees and third-party consultants or advisers enter into confidentiality agreements. These agreements may not provide meaningful protection for the Company's trade secrets, know-how or other proprietary information in the event of any unauthorised use, misappropriation or disclosure. It is possible that the Company's competitors could independently develop the same or similar technology or otherwise obtain access to the Company's unpatented technology. If the Company is unable to maintain the proprietary nature of its technologies, it may lose any competitive advantage provided by its intellectual property. As a result, the Company's results of operations may be adversely affected and it may lead to the impairment of the amounts recorded for goodwill and other intangible assets. Additionally, third parties may claim that the Company's products infringe their patents or other proprietary rights and seek corresponding damages or injunctive relief.

***20. The Company is exposed to foreign currency risk.***

The Company's Stage 1 Capital Funding Requirements will be denominated primarily in pounds sterling and U.S. dollars and the Company currently anticipates that its Stage 2 Capital Funding Requirements will be denominated in U.S. dollars. During construction and in particular upon commencement of commercial production, foreign currency exchange rate risk is expected to have an impact on the Company's results. Although the Company has attempted to mitigate its medium to long term foreign exchange risk by planning a capital structure where capital is raised in currencies broadly matching the expected currency mix of its capital expenditure needs, as well as its anticipated operating expenses, there can be no assurance that the Company will be successful in foreseeing the mix of currencies or the quantum of funding or level of expenses that will be necessary for its business in future periods. In particular, if the Company has not accurately estimated the mix of its U.S. dollar and pound sterling needs in future periods, and if the pound sterling were to depreciate significantly as compared to the U.S. dollar during the Initial Construction Phase, the Company's anticipated funding requirements, when denominated in pounds sterling, could be significantly higher than expected. Any material adverse currency movements may result in the Company needing to amend its funding plans to raise more capital, resulting in a corresponding increase in interest costs or an increase in equity dilution.

As a result of the Stage 1 Financing, the Company recognised significant assets and liabilities in its financial statements as at 31 December 2016, in U.S. dollars as well as pounds sterling. These included assets of £358.4 million in pounds sterling and £306.9 million equivalent in U.S. dollars, in a combination of cash or cash equivalents or other instant access deposits, and liabilities of £321.4 million equivalent in U.S. dollars relating to the notes offered by 2016 Convertible Bond Offering. Together the amounts of U.S. dollar and pound sterling assets and liabilities account for over 80 per cent. of the Company's total assets and over 98 per cent. of the Company's total liabilities.

The Company's holdings in U.S. dollars will expose the Company to foreign exchange translation effects (as amounts it holds in U.S. dollars will need to be translated to pounds sterling for purposes of preparing its financial statements), and their associated tax impact, as the relevant exchange rates fluctuate over time. In particular, if the value of the U.S. dollar in relation to the value of the pound sterling were to significantly deteriorate during the period when the Company is holding significant cash or cash equivalent instruments in U.S. dollars, the Company could be required to recognise significant non-cash changes on its income statement and the value of its balance sheet assets could significantly decline. In addition, to the extent the Company enters into hedging arrangements in the future, it may also be exposed to a negative impact on its reported profit before tax in any given period, based on movements of the U.S. dollar as compared to the pound sterling.

Once first commercial production has commenced, substantially all of the Company's revenues from sales of POLY4 are expected to be denominated in U.S. dollars, while a substantial majority of the Company's operating expenses, such as labour and consumables such as electricity, will be denominated in pounds sterling. Accordingly, it is anticipated that fluctuations in the value of the pound sterling compared to the U.S. dollar will impact the results of operations of the Company. Specifically, over the long term, appreciation of the pound sterling versus the U.S. dollar, without offsetting improvement in POLY4 prices, would adversely affect the Company's profitability.

Although the Company has not historically had any formal hedging arrangements in place to manage its exposure to fluctuations in the value of foreign currencies, the Company periodically reviews the need for more formal hedging arrangements to manage its foreign exchange risk. The Company expects to consider formal hedging arrangements only once it is committed to obligations that provide significant foreign exchange exposures, for example, via signed construction contracts which commit the Company to incurring capital expenditures in certain currencies. Any such formal hedging arrangements, even if entered into, may fail to successfully protect the Company from adverse exchange rate movements, potentially resulting in a material adverse effect on the Company's results of operations in future periods.

***21. Changes in the prices of energy and other important materials and equipment used in the Company's business, or disruptions to their supply, could adversely impact the Company's results of operations or financial condition.***

Cement, electricity, steel, water, chemicals, diesel and petrol are key materials that the Company and its contractors will purchase and use during the construction phase of the Project. Upon commencement of production, electricity prices are expected to be the most significant component of the Company's operating costs. Therefore, the Company's sales and profitability are impacted by volatility in the price and availability of these materials. For example, electricity pricing in the UK is particularly complex to estimate and petroleum costs are very sensitive to geopolitics and therefore budgeted values must be viewed as tentative and may be significantly lower than the eventual price paid. Any significant increase in the price of these materials that is not recovered through an increase in prices for the Company's products, or an extended interruption in the supply of these materials to the Company's production facilities, could adversely affect the Company's results of operations or financial condition.

***22. A shortage of transport for the Company's polyhalite, increased transit times, or interruptions in transportation services could result in customer dissatisfaction, loss of sales or higher transportation costs or disruptions.***

Once the Project commences commercial production, the Company expects to rely heavily upon shipping services to deliver its products to customers in overseas locations, in particular to China and North and South America. Consequently, the cost of shipping is an important consideration for what a customer will pay for the Company's products. The Company currently anticipates selling on both a free on board basis and a shipped basis, both of which are impacted by shipping costs. For sales on a shipped basis, the price for the product will have to directly incorporate shipping costs incurred by the Company, while for sales on a free on board basis, the cost of shipping incurred by customers may impact the price the Company is able to negotiate with its customers. A shortage of shipping capacity for carrying product or increased transit times due to accidents, disruptions, congestion, high demand, labour disputes, adverse weather, natural disasters, piracy, changes to transportation systems or other events affecting the global commercial transportation of goods could prevent timely delivery of the Company's product or lead to higher transportation costs for the Company or its customers. As a result, the Company could experience customer dissatisfaction or a loss of sales to producers of substitute products in closer proximity to its customers.



**23. *Failure to engage or manage relationships with local communities and stakeholders may affect the ability of the Company to develop and operate the Project.***

The Company must maintain the support of local, regional and national stakeholders in order to successfully develop and operate the Project. Extractive businesses generally, and especially those which operate, as the Project will, within the boundaries of a natural park, may face local opposition or concerns, particularly during construction. Although the Company currently believes it has been successful in its outreach to the local communities and stakeholders in Scarborough and Redcar, and has established a Community and Stakeholder Engagement Framework (CSEF) for itself and for the contractors working on the Project, there can be no assurance that this success will continue. The Company may fail to appropriately monitor and respond to stakeholder concerns and to proactively manage impacts of the Project. Were the Project to face opposition because of breaches to planning conditions, risks to human health or the environment, failure of contractors to comply with the CSEF, or otherwise, the ensuing uncertainty and reputational risk could halt the Project or hurt the Company's ability to engage with new and existing customers, thereby adversely impacting the Company's business, revenues, financial condition and results of operations.

**RISKS RELATING TO THE COMPANY'S INDUSTRY**

**24. *The Company is subject to the risks associated with conducting business internationally.***

The Company's business operations are primarily conducted in the United Kingdom, but it anticipates exporting products to customers located throughout the world. The laws, regulations and policies in the countries of the Company's customers may be different from those in the United Kingdom and may change unexpectedly, particularly with respect to the rules for obtaining import/export registrations and/or approvals. The Company may be required to engage agents in its dealings with foreign governments or other foreign customers, who may not perform their responsibilities on behalf of the Company satisfactorily or as promised and may expose the Company to liability as a result of their actions. In addition, international trade is often subject to potential hostilities and changes in diplomatic relationships and local economic and political conditions or instability in the importing nation. If not managed properly, the risks inherent in international sales may result in increased cost of sales or delays in consummation of sales and could therefore have a material adverse effect on the Company's business, revenues, financial condition, results of operations or prospects.

**25. *Demand for polyhalite may be volatile in response to macroeconomic factors.***

A number of macroeconomic factors, including changes in world population and income growth, drive demand for fertilizers. The relationship between population and demand for fertilizer is closely linked. Rising population numbers increase demand for food, including crops and meat. To the extent that the higher demand for food is not met by an increase in arable landmass per capita through forest clearances or the cultivation of undeveloped land, such demand will generally result in increased sales of fertilizers since it can help increase yield from available arable land. Population levels in certain markets that are important to the Company, such as China, India, Brazil and Southeast Asia, have been growing. In addition, rising income levels also drive fertilizer demand by enabling people to afford better diets, which are more likely to include meat. Increased demand for meat generally drives demand for grain and therefore fertilizers. Conversely, an economic downturn may lead to reduced demand for fertilizers. For example, the global demand for NPK fertilizer nutrients declined substantially in 2008 and 2009 to a large extent as a result of financial and economic uncertainties created by the global financial crisis which began in 2008. Over the past several years, global fertilizer demand has declined and potash prices have fallen in line with most crop prices, in light of increasing economic uncertainty, falling fuel prices, and concerns about over-supply due to certain fertilizer market dynamics. Although global cereal prices are expected to benefit in the medium term from modest nominal price increases (according to joint OECD and FAO research), global prices for fertilizer, including potash-based fertilizers such as polyhalite, may fail to benefit from any such increases and remain low.

Because polyhalite is primarily used as a fertilizer, any future decline in population or prolonged global economic downturn could adversely affect the demand for polyhalite or the availability and price of credit to the Company's customers, which may result in a material adverse effect on the Company's business, revenues, financial condition, results of operations or prospects or the market price of the Shares.

**26. *The market for potassium-based fertilizers is competitive.***

The Company's polyhalite is expected to primarily compete for market share with mainstream potash fertilizers, such as muriate of potash (**MOP**), sulphate of potash (**SOP**) and other NPK blends, which will expose it to a number of powerful competitors in its key markets. Since potash is a commodity which may be perceived to have minimal product differentiation, producers compete largely on price, quality and their ability to offer fast delivery times and supply high quality product. The Company's competitors, some of which are large multinational corporations, may have substantial strategic advantages over the Company, including existing infrastructure, greater financial resources, strategic relationships with customers and logistical advantages in certain markets and could enhance their competitive position through acquiring, or consolidating interests in, other potash producers or could even begin marketing polyhalite themselves. In addition, new competitors could obtain access to reserves of potash or polyhalite through new discoveries or to the extent existing deposits or greenfield projects become more economically viable. Any of the foregoing advantages and potential advantages of the Company's competitors over the Company could materially impact its ability to successfully market polyhalite as a commercially viable substitute for mainstream potash fertilizers, which could ultimately have a material adverse effect on the Company's business, results of operations and financial condition.

**27. *Changes in commodities prices or agricultural practices may adversely affect the demand for polyhalite and the economic viability of the Project.***

The Company's business depends significantly on the business of its agricultural customers, who in turn depend on favourable commodities prices for crops that depend on the fertilizer nutrients supplied by polyhalite. In addition to the macroeconomic factors noted in Risk Factor 25 ("*Demand for polyhalite may be volatile in response to macroeconomic factors.*") of this Part 2, abnormal weather conditions, natural disasters, or other unexpected natural conditions can impose significant costs and losses on farmers and other participants in the agricultural industry by creating uncertainty or volatility in commodities prices, which would ultimately impact agricultural demand for fertilizers, such as polyhalite. Changes in agricultural practices may also impact the demand for polyhalite and the price the Company can demand for its polyhalite, which could fall to levels which make it not economically viable to further develop the Project. Such conditions would materially and adversely affect production, earnings and the financial position of the Company, and could result in the cessation of mining activities. There can be no assurance that even if commercially viable quantities of polyhalite are produced, a profitable market will exist for it.

**28. *Market upheavals due to global pandemics, military actions and terrorist attacks, or economic repercussions from those events could reduce the Company's sales or increase its costs.***

Global pandemics, actual or threatened armed conflicts, terrorist attacks or military or trade disruptions affecting the areas where the Company or its competitors do business could disrupt the global market for fertilizers. Such market upheavals may result in reduced demand for fertilizers like POLY4 in impacted regions where agriculture may be neglected. This may result in an industry-wide realignment of sales efforts as the Company and its competitors seek new markets to replace disrupted ones. As a result, the Company's competitors may increase their sales efforts in geographic markets the Company plans to sell into or may lower the prices of their fertilizers. If this occurs, the Company could lose sales to its competitors or be forced to lower its prices, which could result in a material adverse effect on the Company's business, revenues, financial condition, results of operations or prospects or the market price of the Shares.

**29. *Government policies can adversely affect the market for the Company's products.***

Government policies, including subsidies and commodity support programmes, influence fertilizer demand by, for example, restricting the number of acres planted, requiring a particular mix of crops to be planted and limiting the use of fertilizers for particular agricultural applications. For example, potash demand in China, where the government has been involved in the purchase of potash by local customers, has historically been heavily dependent on government policy, and the Company expects this trend to continue. Conversely, decisions by governments to reduce or eliminate fertilizer or agricultural subsidies may adversely affect fertilizer demand. Government policies can also influence market conditions in markets with indirect government subsidies, such as the United States and, by virtue of the Common Agricultural Policy, the European Union.

Government policies in the countries important to the Company's business, for example, China and the United States, could change in other ways that are adverse to its business for a number of reasons, including:

- a change in government;
- a move towards more protectionist policies to help local fertilizer producers;
- closer political or economic ties with countries other than the United Kingdom;
- a rotation of suppliers from period to period to maintain bargaining position; or
- the maintenance of greater inventories to strengthen bargaining position.

In addition, governmental actions and policy more generally may have an impact on the Company's financial condition or the market price of the Shares. For example, the United Kingdom's June 2016 referendum vote to leave the European Union (**Brexit**) has resulted in local and global economic volatility, particularly with respect to the share price of UK-based enterprises and depreciation of the pound sterling, including against the United States dollar. Potential long-term uncertainties with respect to the process, timeline and terms of Brexit and its effects on existing and future contractual arrangements and economic relationships may result in a slowdown in foreign and domestic investment in the UK economy, which may impact the Company's ability to raise financing for the Project or engage appropriate contractors for the work to be completed. The Company cannot guarantee that its current plans for development and progression of the Project will not be directly or indirectly adversely impacted by Brexit.

## **RISKS RELATING TO THE SHARES**

### **30. *The Company is expected to be treated as a passive foreign investment company for U.S. federal income tax purposes.***

Generally, a corporation organised or incorporated outside the United States is a passive foreign investment company (**PFIC**) in any taxable year in which, after taking into account the income and assets of certain subsidiaries, either (i) at least 75 per cent. of its gross income is classified as "passive income" or (ii) at least 50 per cent. of the average quarterly value of its assets is attributable to assets that produce or are held for the production of passive income. Passive income for this purpose generally includes dividends, interest, royalties, rents and gains from commodities and securities transactions. Based on the present nature of its activities, including the 2016 Firm Placing and Placing and Open Offer, the present composition of its assets and sources of income and the expected use of proceeds from the 2016 Firm Placing and Placing and Open Offer, the Company believes that it was a PFIC for the 12-month period ending 31 December 2015 and expects to be a PFIC for the current year. However, PFIC status is factual in nature, generally cannot be determined until the close of the taxable year in question, and is determined annually. If the Company is classified as a PFIC in any year that a U.S. Holder (as defined in paragraph 14 ("*U.S. Federal Income Taxation*") of Part 12 ("*Additional Information*") of this Prospectus) owns Shares, the Company generally will continue to be treated as a PFIC for that U.S. Holder with respect to such Shares in all succeeding years, regardless of whether the Company continues to meet the income or asset test described above. If the Company is a PFIC in any taxable year during which a U.S. Holder owns Shares, such U.S. Holder may suffer adverse tax consequences. For more information, see paragraph 14 ("*U.S. Federal Income Taxation*") of Part 12 ("*Additional Information*") of this Prospectus.

### **31. *The Shares that may be issued in respect of the Royalty Financing and under the Convertible Bonds may give rise to dilution for Shareholders.***

Shareholders will experience dilution on drawdown of the Royalty Financing under which the Company has agreed to issue Hancock with 200,076,829 Shares for US\$50 million, and in the event of any conversion of the Convertible Bonds. Sirius Minerals Finance Limited, a wholly owned subsidiary of the Company incorporated in Jersey, has outstanding senior, unsecured US\$400 million convertible bonds due 2023 (the Convertible Bonds) that are guaranteed by the Company and will be convertible into redeemable preference shares of Sirius Minerals Finance Limited which will be automatically transferred to the Company (without any further action being required to be taken by the relevant bondholder) on and as at the relevant conversion date and in consideration therefor exchanged into fully paid Shares of the Company. On the issue of 200,076,829 Shares to Hancock, each existing Share will be diluted by approximately 4.8 per cent as a result of the issuance. The initial conversion price for the Convertible Bonds is US\$0.31 (based on a reference share price of £0.20, converted into U.S. dollars at the prevailing U.S. dollar to pound sterling spot rate at the time

of pricing, and an initial conversion premium of 25.0 per cent. above the reference share price) which implies that there were approximately 1,300,390,117 Shares underlying the Convertible Bonds as at the issue date of the Convertible Bonds, although the number of Shares underlying the Convertible Bonds may change from time to time as the conversion price will be subject to adjustment pursuant to customary anti-dilution provisions dealing with, among other things, share consolidations, share splits, capital distributions, rights issues and bonus issues. Assuming that all 1,300,390,117 Shares underlying the Convertible Bonds as at the issue date of the Convertible Bonds were issued, each existing Share will be diluted by approximately 31.2 per cent.

**32. *The issuance of additional Shares in the Company in connection with future fundraising activities or otherwise may dilute all other shareholdings and may impact the price of the Shares.***

In addition to the Stage 1 and Stage 2 Financing necessary to complete development of the Project, the Company may also seek to raise financing to fund other growth opportunities, invest in its business, or for general corporate purposes. Issuing additional equity securities or debt securities convertible into equity securities may be a more attractive option for the Company than additional debt financings. Any additional equity financings, depending on structure, would likely result in dilution in the percentage ownership of existing shareholders and may involve the use of securities that have rights, preferences, or privileges senior to the Shares which may adversely affect the price of the Shares.

**33. *Not all rights available to shareholders under U.S. law will be available to holders of the Shares.***

Rights afforded to shareholders under English law differ in certain respects from the rights of shareholders in typical U.S. companies. The rights of Shareholders are governed by English law and the Articles. In particular, English law currently limits significantly the circumstances under which the shareholders of English companies may bring derivative actions. Under English law, in most cases, only the Company may be the proper plaintiff for the purposes of maintaining proceedings in respect of wrongful acts committed against it and, generally, neither an individual shareholder, nor any group of shareholders, has any right of action in such circumstances. In addition, English law does not afford appraisal rights to dissenting shareholders in the form typically available to shareholders in a U.S. company.

**34. *The Company may not be able or may decide not to pay dividends at a level anticipated by Shareholders, which could reduce investors' return on shares.***

The Company's results of operations and financial condition are entirely dependent on its ability to implement the Project and commence and maintain production of POLY4. The Company's ability to pay future dividends will depend, among other things, on its financial performance, any restrictions relating to regulatory capital in subsidiaries and the availability of distributable profits and reserves and cash available for this purpose. Furthermore, the Company has never declared or paid dividends on its Shares, and there can be no guarantee that it will change its dividend policy to pay dividends in the future, or that the Company's revenue, profit and cash flow would be able to support the payment of such dividends. The payment of dividends is at the discretion of the Board of Directors of the Company and will be subject to, among other things, applicable law, regulations, restrictions, the Company's financial position, regulatory capital requirements, working capital requirements, finance costs, general economic conditions and other factors the Directors deem significant from time to time.

**35. *Shareholders may have difficulty in effecting service of process on the Company or the Directors in the United States, in enforcing U.S. judgments in the United Kingdom or in enforcing U.S. federal securities laws in UK courts.***

All of the Directors of the Company are residents of countries other than the United States and most of their assets are outside the United States. The Company is incorporated outside the United States and most of its assets are located outside the United States. As a result, it may not be possible for shareholders to effect service of process within the United States upon all of the Directors and officers or on the Company, or to obtain discovery of relevant documents and/or the testimony of witnesses. U.S. shareholders may have difficulties enforcing in courts outside the United States judgments obtained in U.S. courts against all of the Directors or the Company (including actions under the civil liability provisions of the U.S. federal securities laws). Shareholders may also have difficulty enforcing liabilities under the U.S. federal securities laws in legal actions originally brought in jurisdictions located outside the United States.

**36. *Overseas shareholders may be subject to exchange rate risk.***

The Shares are, and any dividends to be paid in respect of them will be, denominated in pounds sterling. An investment in Shares by an investor whose principal currency is not pounds sterling exposes the investor to foreign currency exchange rate risk. Any depreciation of pounds sterling in relation to such foreign currency will reduce the value of the investment in the Shares or any dividends in foreign currency terms.

**37. *Substantial future sales of Shares could impact their market price***

The Company cannot predict what effect, if any, future sales of Shares, or the availability of Shares for future sale, will have on the market price of Shares. Sales of substantial amounts of Shares after Admission, or the perception or any announcement that such sales could occur could adversely affect the market price of the Shares and may make it more difficult for investors to sell their Shares at a time and price which they deem appropriate, or at all.

**38. *There is no guarantee that an active trading market for the Shares will develop or that the Main Market will provide an increased liquidity in the Shares***

The liquidity of the Shares on the Main Market will be influenced by a large number of factors, some specific to the Group and its operations and others outside its control and unrelated to the Group's operating performance, such as the operating and share price performance of other companies that investors may consider comparable to the Company, speculation about the Company in the press or the investment community, strategic actions by competitors, changes in market conditions and regulatory changes in any number of countries. There can be no guarantee that, following Admission, an active trading market for the Shares will develop or, if developed, that it will be maintained or that Admission will result in an increase in the liquidity of the Shares. If an active trading market is not maintained, the trading price of the Shares could be adversely affected. The market price for the Shares may fall, perhaps substantially. As a result of fluctuations in the market price of the Shares, investors may not be able to sell their Shares.

**39. *The market price of the Shares may fluctuate significantly in response to a number of factors, many of which will be out of the Group's control***

Publicly traded securities from time to time experience significant price and volume fluctuations that may be unrelated to the operating performance of the company that has issued them. In addition, the market price of the Shares may prove to be highly volatile, which may prevent Shareholders from being able to sell their Shares at or above the price they paid for them. The market price of the Shares may fluctuate significantly in response to a number of factors, many of which are and will be beyond the Group's control, including variations in operating results in the Group's reporting periods, changes in financial estimates by securities analysts, changes in market valuation of similar companies, announcements by the Company of significant contracts, acquisitions, planned investments or other capital commitments, strategic alliances, joint ventures, additions or departures of key personnel, any changes in legal and regulatory requirements, any shortfall in turnover or net profit or any increase in losses from levels expected by securities analysts, and future issues or sales of Shares. Any or all of these events could result in a material decline in the price of the Shares.

**40. *Future issues of Shares may dilute the holdings of Shareholders***

The Company has no current plans for an offering of Shares. It is possible, however, that the Company may decide to offer additional Shares in the future, either to raise capital or for other purposes. Subject to any applicable pre-emption rights, any future issues of Shares may have a dilutive effect on the holdings of Shareholders and could have a material adverse effect on the market price of Shares as a whole.

**41. *Securities or industry analysts may not publish research or reports about the Group's business or may publish unfavourable or inaccurate research about the Group's business***

The market for the Shares will depend in part on the research and reports that securities or industry analysts publish about the Group or its business. The Directors may be unable to sustain coverage by well-regarded securities and industry analysts. If either none or only a limited number of securities or industry analysts maintain coverage of the Company, or if these securities or industry analysts are not well-regarded within the general investment community, the trading price for the Shares could be negatively impacted. In the event one or more of the analysts who cover the Company's downgrade the Shares or publish inaccurate or unfavourable research about the Group's business, the Company's

share price could decline. If one or more analysts ceases coverage of the Company or fails to publish reports regularly, demand for the Shares could decrease and this may cause the Company's share price and trading volumes to decline.

## **PART 3**

### **DIRECTORS, SECRETARY, REGISTERED OFFICE AND ADVISERS**

<b>Directors</b>	Russell Scrimshaw (Non-Executive Chairman) Chris Fraser (Managing Director and Chief Executive Officer) Thomas Staley (Finance Director and Chief Financial Officer) Noel Harwerth (Senior Independent Director) Keith Clarke CBE (Independent Non-Executive Director) Louise Hardy (Independent Non-Executive Director) Lord Hutton (Independent Non-Executive Director) Jane Lodge (Independent Non-Executive Director)
<b>Company Secretary</b>	Nicholas King
<b>Registered Office of the Company</b>	3rd Floor Greener House 68 Haymarket London SW1Y 4RF United Kingdom
<b>Sole Sponsor</b>	J.P. Morgan Securities plc 25 Bank Street London E14 5JP United Kingdom
<b>English legal advisers to the Company</b>	Allen & Overy LLP One Bishops Square London E1 6AD United Kingdom
<b>English legal advisers to the Sole Sponsor</b>	Ashurst LLP Broadwalk House 5 Appold Street London EC2A 2HA United Kingdom
<b>Auditors</b>	PricewaterhouseCoopers LLP Central Square 29 Wellington Street Leeds LS1 4DL United Kingdom
<b>Registrar</b>	Capita Asset Services The Registry 34 Beckenham Road Beckenham Kent BR3 4TU United Kingdom

## **PART 4**

### **EXPECTED TIMETABLE OF PRINCIPAL EVENTS FOR ADMISSION**

<b>Event</b>	<b>Time and date</b>
Publication of this Prospectus	25 April 2017
Last day of trading of the Shares on AIM	27 April 2017
Expected delisting of the Shares from AIM	8.00 a.m. on 28 April 2017
Admission of the Shares to the Official List	8.00 a.m. on 28 April 2017
Admission and commencement of dealings in Shares on the Main Market	8.00 a.m. on 28 April 2017

All references to times in this Prospectus are to London time unless otherwise stated. Dates are indicative and may be subject to change.



## PART 5

### PRESENTATION OF INFORMATION

#### 1. GENERAL

The contents of this Prospectus are not to be construed as legal, business or tax advice. Each prospective investor should consult his or her own lawyer, financial adviser or tax adviser for legal, financial or tax advice.

Investors should rely solely on the information contained in this Prospectus (and any supplementary prospectus produced to supplement the information contained in this Prospectus) when making a decision as to whether to acquire Shares. No person has been authorised to give any information or make any representations other than those contained in this Prospectus and, if given or made, such information or representation must not be relied upon as having been so authorised by the Company, the Directors or J.P. Morgan Cazenove. In particular, the content of the Company's website does not form part of this Prospectus and prospective investors should not rely on such content. Without prejudice to any obligation of the Company to publish a supplementary prospectus pursuant to section 87G of FSMA and Rule 3.4 of the Prospectus Rules, the publication shall not, under any circumstances, create any implication that there has been no change in the business or affairs of the Company or of the Company and its subsidiaries taken as a whole since the date of this Prospectus or that the information contained herein is correct as at any time subsequent to its date.

No statement in this Prospectus or incorporated by reference into this Prospectus is intended as a profit forecast or profit estimate for any period and no statement in this Prospectus or incorporated by reference into this Prospectus should be interpreted to mean that the earnings or earnings per share will necessarily be greater or lesser than those for the relevant preceding financial statements of the Company.

Apart from the responsibilities and liabilities, if any, which may be imposed on J.P. Morgan Cazenove by the FSMA or the regulatory regime established thereunder, the London Stock Exchange or the Listing Rules, or under the regulatory regime of any jurisdiction where exclusion of liability under the relevant regulatory regime would be illegal, void or unenforceable, neither J.P. Morgan Cazenove nor any of its affiliates, directors, officers, employees or advisers accept any responsibility whatsoever for, or makes any representation or warranty, express or implied, as to the contents of this Prospectus, including its accuracy or completeness or for any other statement made or purported to be made by it or on behalf of it, the Company, the Directors or any other person, in connection with the Company, the Shares or Admission, and nothing in this Prospectus should be relied upon as a promise of representation in this respect, whether as to the past or the future. J.P. Morgan Cazenove, and its respective affiliates, directors, officers, employees and advisers accordingly disclaims to the fullest extent permitted by law all and any responsibility or liability whatsoever, whether arising in tort, contract or otherwise (save as referred to above), which it might otherwise have in respect of this Prospectus or any such statement.

#### 2. PRESENTATION OF FINANCIAL INFORMATION WITH RESPECT TO THE GROUP

##### *2.1 Presentation of financial information with respect to the Group*

Unless otherwise indicated, the consolidated financial information with respect to the Group presented in this Prospectus is based on IFRS as adopted by the European Union and International Financial Reporting Standards Interpretations Committee interpretations as adopted by the European Union, and those parts of the UK Companies Act applicable to the companies reporting under IFRS. IFRS as adopted by the European Union differs in certain aspects from International Financial Reporting Standards as issued by the International Accounting Standards Board.

Until 31 March 2015, the Company's financial year ran from 1 April to 31 March. Beginning on 1 April 2015, the Company has adopted a financial year ending 31 December. Therefore, this Prospectus includes Historical Financial Information comprising the Group's audited consolidated financial statements as at and for year ended 31 December 2016 and incorporates by reference to the Historical Financial Information presented in the Company's prospectus in relation to the 2016 Firm Placing and Placing and Open Offer approved by the FCA and published on 3 November 2016 (the **Existing Prospectus**) comprising the Group's audited consolidated financial statements as at and for the nine months ended 31 December 2015 and as at and for the years ended 31 March 2015 and 31 March 2014.

The unqualified opinion for the financial statements as at and for the nine months ended 31 December 2015 includes an emphasis of matter paragraph, in which the Company's auditors noted the existence of uncertainty which may cast significant doubt about the Company's ability to continue as a going concern. This paragraph does not appear for the financial statements as at and for the year ended 31 December 2016.

The consolidated financial information relating to the Group presented in this Prospectus or incorporated by reference to the Existing Prospectus is not intended to comply with the applicable accounting requirements of the Securities Act and the related rules and regulations that would apply if the Shares were to be registered in the United States. Compliance with such requirements would require the modification or exclusion of certain information included in this Prospectus and the presentation of certain information which is not included in this Prospectus.

The financial information presented in this Prospectus or incorporated by reference to the Existing Prospectus was not prepared in accordance with U.S. Generally Accepted Accounting Principles (**U.S. GAAP**) or audited in accordance with U.S. Generally Accepted Auditing Standards (**U.S. GAAS**) or the standards of the Public Company Accounting Oversight Board (**PCAOB Standards**). No opinion or any other assurance with regard to any financial information is expressed under U.S. GAAP, U.S. GAAS or PCAOB Standards and the financial information is not intended to comply with SEC reporting requirements. Compliance with such requirements would require the modification, reformulation or exclusion of certain financial measures. In addition, changes would be required in the presentation of certain other information. In particular, no reconciliation to U.S. GAAP is provided.

## **2.2 Rounding**

Percentages and certain amounts included in this Prospectus have been rounded for ease of presentation. Accordingly, figures shown as totals in certain tables may not be the precise sum of the figures that precede them.

## **2.3 Currencies**

Unless otherwise indicated, in this Prospectus, all references to:

**pounds sterling** or **£** are to the lawful currency of the United Kingdom, and

**U.S. dollars** or **US\$** are to the lawful currency of the United States.

Unless otherwise indicated, the historic and financial information contained in this Prospectus has been expressed in pounds sterling. The Group's functional currency is pounds sterling and the Group presents its financial statements in pounds sterling.

For more information on exchange rates used in this Prospectus, please see paragraph 4.2.3 ("*Basis of Valuation*") of this Part 5.

# **3. USE OF ESTIMATES AND FORWARD-LOOKING INFORMATION**

## **3.1 Forward-Looking Statements**

This Prospectus includes statements that are, or may be deemed to be, "forward-looking statements". These forward-looking statements can be identified by the use of forward-looking terminology, including the terms "believes", "estimates", "anticipates", "expects", "intends", "plans", "may", "will" or "should" or, in each case, their negative or other variations or comparable terminology. All statements other than statements of historical fact included in this Prospectus are forward-looking statements. They appear in a number of places throughout this Prospectus and include statements regarding the Directors' or the Group's intentions, beliefs or current expectations concerning, among other things, its operating results, financial condition, prospects, growth, expansion plans, strategies, the industry in which the Group operates and the general economic outlook.

Forward-looking statements include, but are not limited to, statements about:

- the costs of, and the Company's ability to successfully construct, commission and execute, the Project;
- the estimated net present value of the Project at various production levels;
- the capital amounts expected to be spent on the Project over the course of the anticipated life of the mine from first production;

- the associated rate of inflation, level of financing costs and other variables which underlie the economic analysis of the Project;
- Mineral Resource and Ore Reserve estimates;
- changes in the price, demand, or supply of polyhalite, and the Company's resulting estimates of future Project EBITDA;
- circumstances that may disrupt or limit commencement or expansion of production, including operational difficulties or operational variances due to geological or geotechnical concerns;
- the Company's ability to raise the capital funding necessary to complete construction and ramp-up production on the Project; and
- competition in the fertilizer industry.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future and therefore are based on current beliefs and expectations about future events. Forward-looking statements are not guarantees of future performance and the Group's actual operating results and financial condition, and the development of the industry in which it operates may differ materially from those made in or suggested by the forward-looking statements contained in this Prospectus. In addition, even if the Group's operating results, financial condition and liquidity, and the development of the industry in which the Group operates are consistent with the forward-looking statements contained in this Prospectus, those results or developments may not be indicative of results or developments in subsequent periods. Accordingly, prospective investors should not rely on these forward-looking statements.

In particular, this Prospectus includes figures representing anticipated capital requirements and capital funding for the Project. The actual capital requirements of, and capital funding achieved for, the Project are subject to multiple variables as discussed throughout this Prospectus, including foreign exchange rates at the time of obtaining funding or capital expenditure and the structure the Company has planned for both obtaining funding and capital expenditures. Accordingly, the figures presented herein may differ from the actual funding received and capital expenditure incurred.

These forward-looking statements are further qualified by risk factors disclosed in this Prospectus that could cause actual results to differ materially from those in the forward-looking statements. Please see Part 2 ("*Risk Factors*") of this Prospectus.

Any forward-looking statements that the Company makes in this Prospectus speak only as at the date of the Prospectus, and none of the Company, the Directors or the Sponsor undertakes any obligation to update such statements unless required to do so by applicable law, the Prospectus Rules, the Disclosure Guidance and Transparency Rules, the Listing Rules or the Market Abuse Regulation. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless expressed as such, and should only be viewed as historical data.

Such forward-looking statements are based upon assumptions the Company believes are reasonable, but this information has not been independently verified. The Company cannot assure prospective investors that these assumptions will be correct and undue reliance should not be placed on such information.

These forward-looking statements do not seek to qualify the working capital statement.

### **3.2 *Estimates and Certain Non-Financial Metrics***

The Company has included in this Prospectus information related to anticipated and estimated capital requirements, as well as estimated future operating costs, POLY4 sales prices, Project EBITDA, production volume, mine life, inflation rates, available financing and other factors at various stages of the Project's development including initial ramp-up at the beginning of production through the gradual escalation of production to the eventual volume target of 20 mtpa. See paragraph 8.3 ("*Project Economics*") of Part 7 ("*Business Description*") of this Prospectus. The likelihood of achieving the Company's anticipated capital requirements, operating costs, POLY4 sales prices, Project EBITDA, production volume, mine life, inflation rates, available financing and estimated capital requirements or other factors in future periods cannot be ascertained with certainty and no reliance should be placed on estimates as being indicative of future results. These estimates are moreover, based on the Company's assumptions in respect of future events as specified in paragraph

8.3.4 (“*Project Financial Analysis Assumptions*”) of Part 7 (“*Business Description*”) of this Prospectus which assumptions may prove incorrect in significant respects. In particular:

- The Company has based its estimate of capital requirements and production volumes on expert assessments made during the course of compiling the DFS. However, meeting these estimates will depend on many factors which are largely outside of the Company’s control.
- For purposes of this Prospectus, the Company has based its timing estimates on the assumption that construction would commence on 1 October 2016, as an approximation of the expected receipt of proceeds from the Stage 1 Financing in the fourth quarter of 2016. This is different to the DFS reference point assumption of the commencement of construction activities on 1 April 2016, which had approximated receipt of proceeds from the Stage 1 Financing in the second quarter of 2016. The actual Construction Commencement Date was 1 January 2017.
- Project economics data presented in this Prospectus is calculated according to certain variance levels which will generate a range of results for each such estimate; as a result, the estimates presented should not be interpreted as precise or as representative of the actual future outcome of the Project.

The Company presents certain measures of assessing the economic value of the Project in the form of an estimated net present value (NPV) at various production levels. NPV is calculated as the net present value of the Project measured at the expected commencement of construction, according to the assumptions specified in paragraph 8.3.4 (“*Project Financial Analysis Assumptions*”) of Part 7 (“*Business Description*”) of this Prospectus, including in respect of the assumed rate of inflation and discount rate to be applied, and excluding finance costs, and certain other costs that the Company may or may not incur. NPVs are also presented as the estimated net present value of the Project as an asset of the Company, rather than as an indicator of the value of the Company itself. As a result, the NPV is calculated without regard to the capital structure of the Company, including any particular breakdown of debt, equity, or hybrid capital instruments, the Company’s present or future capital structure or the present value impact of all future finance costs or other costs which will be incurred independent of the Project. NPV should therefore not be relied upon as a direct or indirect indicator of the future equity value of the Company or of the Shares. In addition, NPV estimates are sensitive to, among other variables, changes in the assumed discount rate applied, the sales price of POLY4 that the Company is able to achieve from customers, the duration of the Initial Construction Phase and the capital costs incurred during the Initial Construction Phase. Any significant deviation from the Company’s assumptions in respect of any of these or other relevant inputs could result in the estimated NPVs presented in this Prospectus varying from those actually achieved. Therefore, again, no reliance should be placed on these NPV figures in assessing the total equity value of the Company or the value of the Shares.

As a function of its estimated NPV figures, the Company also presents figures in respect of its estimated internal rate of return (IRR) on the capital amounts expected to be spent on the Project over the course of the anticipated life of the mine from first production. IRR is the effective compound annual rate of return that makes the NPV of the Project equal to zero (or alternatively, the Project break-even discount rate). IRR is calculated according to the assumptions specified in paragraph 8.3.4 (“*Project Financial Analysis Assumptions*”) of Part 7 (“*Business Description*”) of this Prospectus, including the assumed rate of inflation, but excluding finance costs, and certain other costs that the Company may or may not incur. IRR values are presented as the estimated return to the Company itself on its investment in the Project, rather than as an indicator of the returns of the Company overall or of investors in the Company. IRR is calculated on the same basis as NPV, which is itself calculated without regard to the capital structure of the Company, including any particular breakdown of debt, equity, or hybrid capital instruments. As a result, IRR does not take into account the Company’s present or future capital structure or the impact on returns of all future finance costs or other costs which will be incurred independently of the Project, and IRR should therefore not be relied upon as a direct or indirect indicator of the returns which may accrue to investors in the Shares. In addition, IRR estimates are sensitive to, among other variables, changes in the estimated NPV of the Project, which is itself sensitive to the variables described above. Any significant deviation from the Company’s assumptions in respect of any of these or other relevant inputs could result in the estimated IRRs presented in this Prospectus varying from those actually achieved. Therefore, again, no reliance should be placed on these IRR figures in respect of assessing any expected return to investors on the Shares or in calculating any particular value to the total equity value of the Company or of the Shares.

The Company's presentation of NPV and IRR figures may not be comparable to similarly titled measures of performance presented by other companies, and they should not be considered as substitutes for the information presented in the financial statements included in this Prospectus.

Unless otherwise stated as values in real (actual) 2016 currency, which does not include inflation, figures presented by the Company in respect of the economics of the Project in paragraph 8 ("*Mineral Extraction and Mining Operations*") of Part 7 ("*Business Description*") of this Prospectus and elsewhere in this Prospectus are presented in terms of "nominal" figures that are adjusted for the impact of assumed levels of future inflation. Figures presented by SRK in the CPR are in real (actual) 2016 terms and do not include any inflationary adjustments. The further into the future any real values speak, the less likely they are to indicate the actual results of the Project in those future periods. In addition to the adjustment to reflect the impact of inflation in the calculation of estimated NPV and IRR figures and other Project economics figures, in paragraph 8.3 ("*Project Economics*") of Part 7 ("*Business Description*") of this Prospectus and elsewhere in this Prospectus, the Company also includes an adjustment within its estimates of "contingency" capital costs, where it has included certain cost price escalation assumptions. In both instances the Company applies an annual inflation rate of 2 per cent. on prices and costs, with initial construction capital cost escalation as per the definitive feasibility study estimates. Actual rates of inflation may be more or less than those expected in the calculation of nominal figures, and thus the nominal figures are intended to be indicative only, and actual outcomes will likely be significantly different from the nominal figures presented herein.

#### 4. RESERVES AND RESOURCES REPORTING

##### 4.1 *Cautionary Note to Investors Regarding Mineral Disclosures; Basis of Preparation; Key Terms*

The estimates of Mineral Resources and Ore Reserves discussed in this Prospectus and the CPR were prepared by SRK based on exploration and other data furnished by the Company. The Company's estimates of Mineral Resources and Ore Reserves are reported in accordance with the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves as published by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (**JORC Code** or **JORC**).

The JORC standards are different from the standards generally permitted in reports filed with the SEC. The Company reports Mineral Resources and Ore Reserves in the following recognised terms under the JORC Code:

- **Inferred Mineral Resource.** An Inferred Mineral Resource is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which may be limited or of uncertain quality and reliability. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to an Ore Reserve. The Inferred category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data are insufficient to allow the geological and/or grade continuity to be confidently interpreted. Commonly, it would be reasonable to expect that the majority of Inferred Mineral Resources would upgrade to Indicated Mineral Resources with continued exploration. However, due to the uncertainty of Inferred Mineral Resources, it should not be assumed that such upgrading will always occur.
- **Indicated Mineral Resource.** An Indicated Mineral Resource is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes. The locations are sufficient between points of observation where data and samples are gathered. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource, but has a higher level of confidence than that applying to an Inferred Mineral Resource. An Indicated Mineral Resource may only be converted to a Probable Ore Reserve. Mineralisation may be classified as an Indicated Mineral Resource when the nature, quality, amount and distribution of data are such as to allow

confident interpretation of the geological framework and to assume continuity of mineralisation. Confidence in the estimate is sufficient to allow the application of technical and economic parameters, and to enable an evaluation of economic viability.

- **Measured Mineral Resource.** A Measured Mineral Resource is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity between the points of observation where data and samples are gathered. Mineralisation may be classified as a Measured Mineral Resource when the nature, quality, amount and distribution of data are such as to leave no reasonable doubt, in the opinion of the Competent Person determining the Mineral Resource, that the tonnage and grade of the mineralisation can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit. Confidence in the estimate is sufficient to allow the application of technical and economic parameters and to enable an evaluation of economic viability that has a greater degree of certainty than an evaluation based on an Indicated Mineral Resource. A Measured Mineral Resource may be converted to a Proved Ore Reserve or under certain circumstances to a Probable Ore Reserve.
- **Ore Reserves.** An Ore Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at the pre-feasibility or feasibility level as appropriate that include application of modifying factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. Further, the JORC Code only allows the reporting of “Probable Ore Reserves” from Mineral Resources classed as Indicated Mineral Resources regardless of whether or not the completed work is at a pre-feasibility study or feasibility study level. The confidence in the modifying factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve. In the case of the Project, the entire Ore Reserve has been classed as “Probable” given that no Measured Mineral Resources have been reported.

This Prospectus contains estimates based on the Company’s Ore Reserves and Indicated and Inferred Mineral Resources. These measurements are not recognised by the SEC and are generally not permitted in filings made with the SEC.

Under U.S. standards, mineralisation may not be classified as a “reserve” unless the determination has been made that the mineralisation could be economically and legally produced or extracted. Although the Company has “resources” as defined under the JORC Code, it has no “reserves” as defined by SEC Industry Guide 7. The Ore Reserves presented in this Prospectus are based on the terms and guidelines set out in the JORC Code and there is therefore no guarantee that these would meet SEC guidelines for “reserves”. Investors are cautioned not to assume that any part or all of the estimated mineral resources will ever be confirmed or converted into economically mineable “reserves” in compliance with SEC Industry Guide 7.

Furthermore, the estimation of inferred resources involves far greater uncertainty as to their existence and economic viability than the estimation of other categories of resources and thus, under U.S. standards, estimates of inferred mineral resources cannot form the basis of a feasibility study, such as the DFS. The SEC’s disclosure standards normally do not permit the inclusion of information concerning “inferred resources” or other descriptions of the amount of mineralisation in mineral deposits that do not constitute “reserves” in compliance with SEC Industry Guide 7.

Investors are cautioned to not compare the measurements presented in this Prospectus with SEC Industry Guide 7 compliant measurements as presented in documents filed with the SEC.

## **4.2 The Competent Person’s Report**

### **4.2.1 The Competent Person**

The information appearing in this Prospectus concerning the Company’s Ore Reserves is extracted or derived from the Competent Person’s Report (CPR) of SRK dated as of April 2017 and set out in Part 14 (“Competent Person’s Report”) of this Prospectus. SRK is a mining consultancy that provides professional technical services to the mining and minerals sector, encompassing multi-disciplinary

technical studies and due diligence for mineral assets. This information has been included herein under the authority of SRK, as experts with respect to the matters covered by the CPR and in giving the CPR.

Its address is 5th Floor, Churchill House, 17 Churchill Way, Cardiff, CF10 2HH, Wales, United Kingdom.

Neither SRK nor its directors, officers or employees have any interest in any assets or share capital of the Company or in the promotion of the Company. Except for the provision of professional services on a fee basis, SRK does not have any commercial arrangement with any other person or company involved in the interests of the Company. Furthermore, SRK is independent of the Company, its Directors, members of senior management and the Company's other advisers, has no economic or beneficial interest (present or contingent) in the Company or in any of the assets being evaluated, and is not remunerated by way of a fee that is linked to the admission or value of the Company.

SRK (in its capacity as Competent Person) has given and has not withdrawn its written consent to the inclusion in this Prospectus of its name, the CPR and references to its name and the CPR in the form and context in which they appear. SRK accepts responsibility for the information provided in the CPR. Having taken all reasonable care to ensure that such is the case, SRK declares that the information contained in the CPR contained in this Prospectus is, to the best of the knowledge of SRK, in accordance with the facts and contains no omission likely to affect its import.

#### *4.2.2 Relationship to the Definitive Feasibility Study; Contemporary Information*

This Prospectus makes reference to the DFS with respect to the Project commissioned by the Company and completed in March 2016. The DFS was compiled based on the collaboration of relevant consultants and contractors. The CPR was produced at the request of the Company as a digest of the work underlying the DFS. While SRK authored certain parts of the DFS, in certain technical areas the CPR reflects SRK's review of information generated or work completed by others as part of the DFS and after completion of the DFS. Furthermore, since the completion of the DFS, the Company updated its implementation strategy, capital requirements, cost estimates and construction schedule. This more recent work has been incorporated into the CPR. Nevertheless, the projections and forecasts presented in the CPR may not directly reflect public announcements made by the Company since the CPR was completed; such announcements may reflect assessments conducted by SRK post-dating the CPR or assessments made by the Company which do not incorporate judgments made by SRK. As a result, certain of the figures presented in the CPR, may not align with the value of those same measures as presented in the Prospectus.

#### *4.2.3 Basis of Valuation*

In the CPR and in this Prospectus, projected revenues have been calculated in U.S. dollars, while all operating costs have been calculated in pounds sterling and then converted to U.S. dollars. The native currency of underlying capital costs is expected to be split between predominantly pounds sterling, euro and U.S. dollars; however the relative proportions will be defined through on-going procurement processes. Unless otherwise noted, this Prospectus, the CPR and underlying financial models with respect to the Project use the exchange rates presented in the table below.

<b>Currency</b>	<b>Exchange Rate Assumption</b>
	<b>(to US\$)</b>
U.S. dollar .....	1.0000
Pound sterling.....	1.4245
Euro .....	1.0831
South African rand.....	0.0629
Australian dollar.....	0.7084

The exception to the use of the above exchange rates is the pound sterling to U.S. dollar exchange rate used to calculate Stage 1 Financing proceeds and related financing costs, fees and expenses where noted, which is US\$1.36 to £1.00.

See also paragraph 8.3 (“*Project Economics*”) of Part 7 (“*Business Description*”) of this Prospectus for more information on the Project’s financial models, including an assessment of the impact of the marked change in foreign exchange rates between pounds sterling and the U.S. dollar since Brexit.

## **5. THIRD PARTY SOURCES**

All sources referenced in this Prospectus are publicly available or historically commissioned reports and, other than the CPR, are not expert reports for the purposes of the Prospectus Rules. Industry publications and surveys, consultant surveys and forecasts generally state that the information contained therein has been obtained from sources believed to be reliable, but there can be no assurance as to the accuracy and completeness of such information. The Company has not independently verified any of the data from third-party sources, particularly those sources utilised in Part 6 (“*Industry Overview*”) of this Prospectus, nor has it ascertained the underlying economic assumptions relied upon therein. Those statements or estimates as to market position which are not attributed to independent sources are based on market data or internal information currently available to the Company. The Company confirms that information sourced from third parties has been accurately reproduced and, as far as the Company is aware and is able to ascertain from information published by those third parties, no facts have been omitted which would render the reproduced information inaccurate or misleading. Estimates extrapolated from these data involve risks and uncertainties and are subject to change based on various factors, including those discussed in Part 2 (“*Risk Factors*”) of this Prospectus.

There is only a limited amount of independent data available about certain aspects of the industry in which the Company operates and the position of the Company relative to its competitors. As a result, certain data and information about its market contained in this Prospectus are based on good faith estimates reflecting the Company’s reasonable review of internal data and information obtained from customers and other third party sources, such as trade and business organisations and associations and other contacts within the fertilizer industry. The Company believes these internal surveys and management estimates are reliable; however, no independent sources have verified such surveys and estimates.

## **6. U.S. SECURITIES LAW CONSIDERATIONS**

This document is not an offer of securities for sale in the United States. The Shares have not been, and will not be, registered under the Securities Act, or with any securities regulatory authority of any state or any other jurisdiction of the United States or under the applicable securities laws of any jurisdiction outside the United Kingdom. Accordingly, the Shares may not be offered, sold or otherwise transferred, directly or indirectly, in or into any such jurisdiction or for the account or benefit of citizens or residents of any such jurisdiction except under circumstances that will result in compliance with any applicable rules and regulations of such jurisdiction. Investors outside the United Kingdom are required by the Company to inform themselves about and observe any restrictions on the offer, sale or transfer of Shares.

## **7. NO INCORPORATION OF INFORMATION BY REFERENCE**

The contents of the websites of the Company (including any materials which are hyper-linked to such websites) do not form part of this Prospectus and prospective investors should not rely on them.

## **8. REFERENCES TO DEFINED TERMS**

Certain terms used but not otherwise defined in this Prospectus are defined, and certain technical and other terms used in this Prospectus are explained in Part 13 (“*Definitions and Glossary*”) of this Prospectus.



## PART 6

### INDUSTRY OVERVIEW

*Unless otherwise stated, the financial information relating to the Company and the Group set out in this part of the document has been extracted without material adjustment from the historical financial information in Part 11 (“Historical Financial Information”) of this Prospectus.*

Unless otherwise stated, the industry information set out in this part of the document has been obtained from several independent external sources, including the Food and Agriculture Organization of the United Nations and the International Fertilizer Industry Association.

#### 1. OVERVIEW OF THE FERTILIZER INDUSTRY

Fertilizers are most commonly used to improve soil fertility by enhancing nutrient content in the soil and, accordingly, to increase crop production, quality and disease resistance. Fertilizers can be categorised into macro-nutrients (which are needed in large quantities) and micro-nutrients. The macro-nutrients, described below, are essential elements required for optimal plant growth. Each of the key nutrients serves a different vital role in plant function, structure and development. A balance of nutrients is necessary to maximise a given nutrient’s efficiency of use, as a shortage of a single nutrient may compromise a plant’s overall health. Although nutrients are naturally found in soil, they are depleted over time by the frequency of typical crop harvesting, which leads to declines in crop yields and quality as soil quality declines. As most nutrients have specific biochemical functions, there is little opportunity for substitution and thus fertilizers supplying a range of nutrients can be an essential requirement in supporting crop production. According to the International Fertilizer Industry Association, fertilizers are used in approximately half of the world’s crop production, supplying food, feed, fibre, and fuel for a global population.

The macro-nutrients are nitrogen, phosphorus, potassium, sulphur, magnesium and calcium.

- Nitrogen increases plant yield by promoting protein formation which is essential for growth and development in plants. Supply of nitrogen determines the size, vigour, colour and yield of the plant. The primary input for producing nitrogen fertilizers is natural gas.
- Phosphorus is vital for root development and plays a key role in the photosynthesis process (i.e., the production, transportation and accumulation of sugars in plants). Phosphorus is also involved in seed germination. The principal mineral used in the production of phosphorus-based fertilizers (phosphates) is phosphate rock, which is mined and then processed using sulphuric acid and ammonia.
- Potassium (often referred to as potash when contained in mineral compounds) helps regulate the physiological functions of plants. It helps the efficient use of water and improves durability, providing crops with protection from drought, disease, parasites and cold weather. The term potash is a generic term for a range of potassium salts. The most common potassium-bearing mineral found naturally is sylvinite, which is the most common feedstock to produce potassium chloride (also known as **MOP**). Other potassium-bearing minerals such as alunite, kainite and langbeinite can be used to produce multi-nutrient low-chloride potash fertilizers, for example sulphate of potassium, sulphate of potassium magnesium (also known as **SOP** and **SOPM**, respectively) and polyhalite fertilizer products. Potassium-bearing minerals are mined either from underground mines or extracted from naturally occurring surface potassium salt or sub-surface brines and are geographically concentrated. Certain types of potash can also be generated chemically.
- Sulphur is a key component of enzymes and vitamins in plants, and it is necessary for the formation of flowers, seeds and chlorophyll. Sulphur is also essential for the efficient fixation of nitrogen in plants. Fertilizers that contain sulphur such as ammonium sulphate and single super phosphate are produced using a chemical process of which sulphuric acid is the primary input.
- Magnesium plays a vital role in the photosynthesis process of the plant. It is involved in many enzyme reactions and participates in nutrient uptake and transportation. The fertilizer products containing magnesium include SOPM and kieserite (also known as magnesium sulphate). Kieserite can be mined as a naturally occurring hydrate (known as natural kieserite) or by neutralising sulphuric acid with magnesium carbonate or oxide (known as synthetic kieserite). Natural kieserite is preferred by farmers as this product is much more soluble in water.

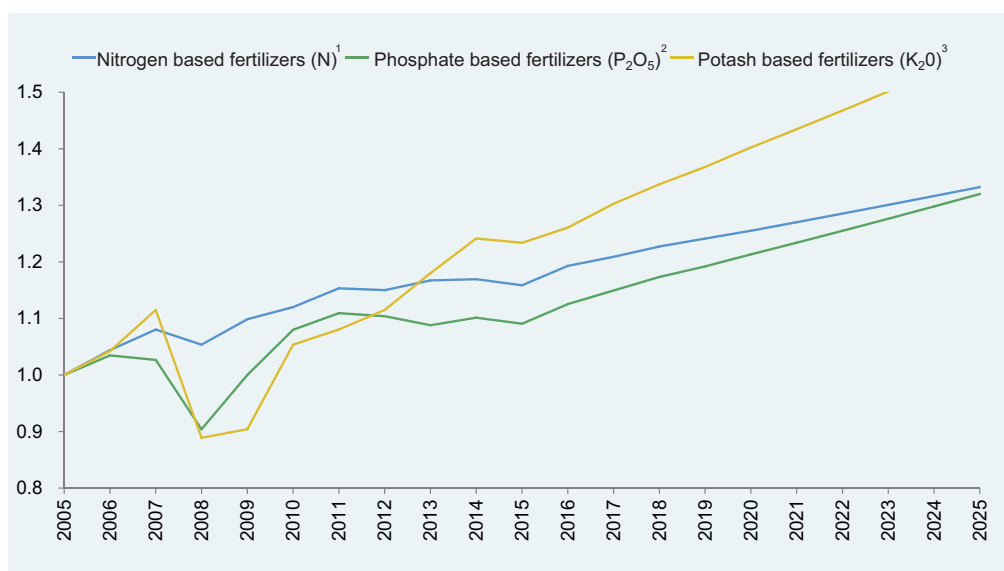
- Calcium is an essential part of plant cell wall formation and helps in the protection against diseases and against numerous fungi and bacteria which secrete enzymes that impair plant cell wall production. Calcium participates in the metabolic uptake processes of other nutrients, promotes a proper plant cell elongation and strengthens the cell wall structure.

There are also a variety of micro-nutrients which support plant growth but which are not as essential in large quantities as macro-nutrients. These include boron, chloride, manganese, iron, zinc, copper, molybdenum, selenium, strontium and sodium, among others. However, chloride can prove toxic to certain plants at high concentrations. For these plants, including high value commodities like tea and coffee, a low chloride fertilizer, like polyhalite, is particularly useful.

### 1.1 Global demand drivers for fertilizers

Global fertilizer demand is driven primarily by food, feed and fuel demand (which in turn are driven by, among other factors, population growth, reduction in arable land per capita, dietary changes, especially in the developing world, and increased biofuel consumption). Fertilizers are one of the fundamental means of improving agricultural yields and addressing the forecasted future imbalance between food demand and supply. The graph presented below shows global fertilizer consumption against 2005 levels and reflects the increased global consumption of fertilizers, in particular potash-based fertilizers, from 2005 to 2025. The graph also includes projections to 2025, through which this trend is expected to continue.

**Index of world fertilizer consumption 2005-2025 (forecast)**



**Source:** IFA Medium-Term Fertilizer Outlook 2016; FCC; Company estimates

**Notes:** As an index plot, the y-axis above is measured in units of total consumption as at 2005. Thus total consumption in 2005 functions as a baseline and equals 1.0, and each subsequent grid mark represents a multiple of that amount (1.2x baseline, 1.4x baseline, etc.).

- (1) Average annual change of +1.2% from 2021 to 2025 assumed by the Company based on IFA's forecast for 2020 to 2021
- (2) Average annual change of +1.7% from 2021 to 2025 assumed by the Company based on IFA's forecast for 2020 to 2021
- (3) Average annual change of +2.3% from 2021 to 2025 assumed by the Company based on IFA's forecast for 2020 to 2021

#### 1.1.1 Population growth and arable land per capita

Population growth is a key driver of fertilizer demand. As the world's population grows, urbanises and industrialises, farm land per capita has tended to decrease and more food production is required from each acre of farm land, which in turn requires more plant nutrients.

According to the United Nations (UN) Population Division, the world population is estimated to grow by 33 per cent. between 2015 and 2050, with the middle class population growing by 53 per cent. between 2020 and 2030. At the same time, according to the Organisation for Economic Co-operation and Development (OECD), agricultural production needs to increase by approximately 60 per cent. between 2010 and 2050 to meet rising food demand. Such rapid growth in demand would exacerbate existing issues such as soil nutrient deficiencies and lack of arable land, leading to an increased demand for soil nutrients. According to the Food and Agriculture Organization (FAO), arable land in 2010 was estimated to be approximately 2,100 square metres per person, and this is

expected to decrease to approximately 1,800 square metres per person by 2050. As a result of the limited ability to expand the existing stock of arable land, it is expected that it will be necessary to improve crop yields and meet future anticipated demand for food. This is expected to increase demand for fertilizers over the next several decades, according to the FAO.

#### *1.1.2 Dietary changes in the developing world*

Developed nations currently use fertilizers more commonly than developing nations, but sustained economic growth in emerging markets is increasing food and feed demand and fertilizer demand. According to the FAO, due to the growth in GDP and income, populations in emerging markets are shifting to more protein-rich diets, leading to increasing grain consumption as animal feed. The production of meat requires a significant amount of grain to be fed to farm animals. For example, according to the United Nations Convention to Combat Desertification, it takes up to ten kilogrammes of cereals to produce one kilogramme of meat.

According to the OECD, world meat consumption is projected to grow by an average of 0.4 per cent. annually from 2012 to 2021, while meat consumption in BRICS countries (Brazil, Russia, India, China and South Africa) is projected to grow by an average of 0.7 per cent. annually during the same period.

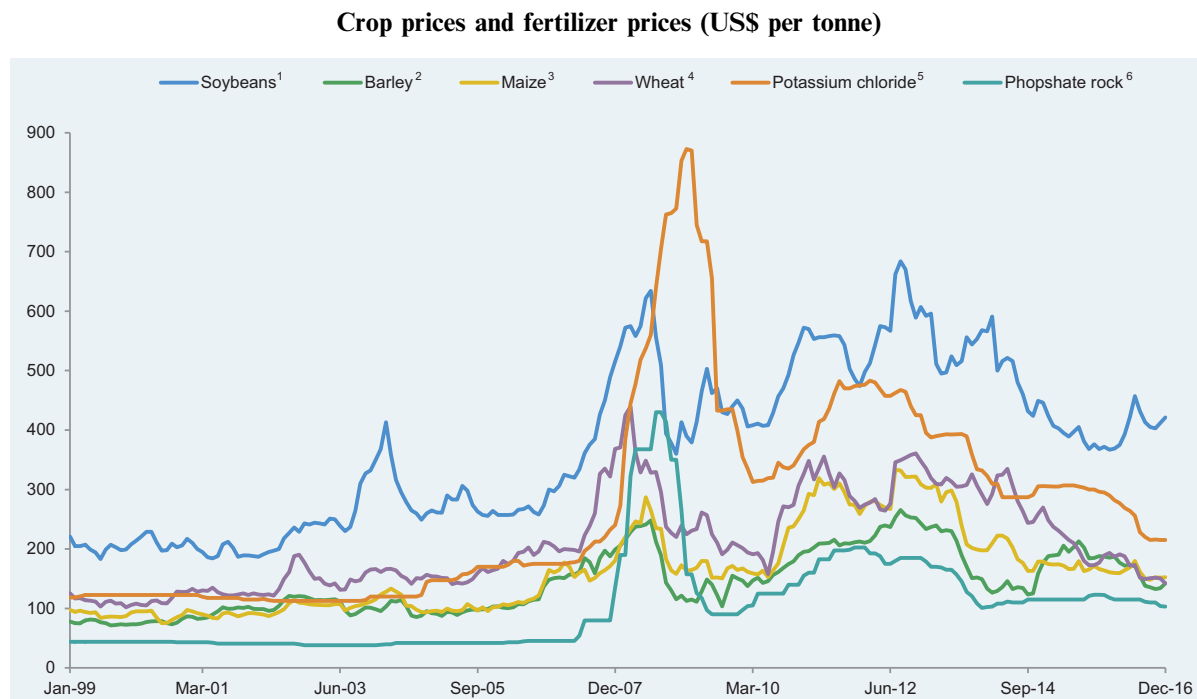
#### *1.1.3 Biofuel production*

With increasing legislation on alternatives to fossil fuels, according to the U.S. Energy Information Administration, biofuel production has increased substantially in recent years. For example, according to the U.S. Environmental Protection Agency, in 2014 18.2 billion gallons of biofuel were legally required to be consumed to meet the renewable fuel standard as amended by the Energy Independence and Security Act, which was more than twice the amount in 2008. This trend is significantly affecting the agricultural industry with an increase in demand for grain crops and a resulting increase in demand for fertilizers.

### ***1.2 Agricultural markets and crop and fertilizer pricing trends***

International reference prices for agricultural commodities provide guidance to global markets. They influence the market decisions of producers and consumers around the world and have an impact on the ability of farmers to purchase fertilizers.

Crop prices and fertilizer prices tend to be correlated. Increases in crop prices generally correlate with increased fertilizer prices and vice versa. The graph below demonstrates this by presenting changes in certain crop prices, potassium chloride fertilizer prices and phosphate rock fertilizer prices from 1999 to 2016.



**Source:** World Bank data

**Notes:**

- (1) Soybeans (US), Rotterdam US\$/tonne
- (2) Barley (US), Minneapolis from May 2012 onwards; Canada from 1980 to 2012 US\$/tonne
- (3) Maize (US), Free on Board US Gulf ports US\$/tonne
- (4) Wheat (US), US Gulf ports US\$/tonne
- (5) Potassium chloride (MOP), standard grade, spot, Free on Board Vancouver US\$/tonne
- (6) Phosphate rock 68-72 BPL, Morocco US\$/tonne

Over the past several years prices for potassium chloride have been weak due to a decline in crop prices as well as an increase in the supply of potassium chloride driven, beginning in 2013, by the end of marketing cooperation by two major potassium chloride producers in the former Soviet Union. In particular, in recent months, the demand for fertilizer has fallen and potash prices have fallen as a result of increasing economic uncertainty and falling fuel prices.

According to joint research between the OECD and the FAO, a combination of robust global supply and sluggish demand is expected to keep prices for rice, wheat and other coarse grains relatively low. According to the same research, over the medium-term, prices for all cereals are projected to follow a trend of modest nominal increases, with more significant increases in coarse grains, mostly as a result of the high demand for animal feed in China and limited production expansion possibilities in the main production regions.

Even during periods of weak crop prices, the Company believes that a decline in fertilizer prices provides an economic incentive for farmers to increase planting to make up shortfalls in profitability, promoting use of additional fertilizer. If crop prices do recover this may also support stronger fertilizer demand and provide an opportunity for fertilizer price recovery.

### 1.3 Overview of multi-nutrient low-chloride potassium-based fertilizers

The key competitors for polyhalite are other multi-nutrient, low-chloride potassium fertilizers. These competitor multi-nutrient low-chloride potassium-based fertilizers may be directly extracted from naturally occurring potassium sulphate-bearing minerals (langbeinite, schoenite and polyhalite) or by the chemical conversion of potassium chloride-bearing minerals (sylvinite, silvite, carnalite and kainite).

### 1.3.1 SOP and SOPM

SOP is a multi-nutrient, potassium-based fertilizer containing two nutrients, potassium (50 per cent.) and sulphur (17 per cent.), and has a low chloride content. SOP is generally used on high-value crops such as many fruits and vegetables, nuts, tea and coffee, since these plants are sensitive to chloride which can prove toxic in high concentration. SOPM is a special type of SOP applied to soils with magnesium deficiencies and/or on crops that require a large amount of magnesium for growth. Magnesium deficient soils are common in Brazil, North America, China, Europe and Southeast Asia.

#### (a) SOP and SOPM Market

There is a global supply shortage of naturally occurring SOP due to the lack of economically exploitable resources. As a result, according to CRU Strategies, a fertilizer industry consultancy (CRU), between 50 and 60 per cent. of the world's SOP is generated from high-cost chemical production, which requires converting MOP into SOP via a chemical process that is energy-intensive and produces hydrochloric acid as a by-product.

#### (b) SOP and SOPM Production

SOP is produced from kainite or other rare ores in surface brines or underground mineral deposits. Some of the well-established production processes include the following:

- Natural, or “primary” SOP production involves extracting potassium and sulphate ions from the salt mixes harvested from natural brines in natural salt lakes such as Salt Lake in Utah, Salar De Atacama in Chile and Qinghai in China, which are currently being used for SOP production. The inputs are the lake brines and energy and the outputs are SOP, magnesium chloride and sodium chloride. This is the only method of producing SOP which does not require MOP as an input and is also the cheapest. Naturally occurring brines account for approximately 34 per cent. of global supply, according to CRU.
- Chemical SOP production is another “primary” means of SOP production, which requires the chemical conversion of MOP to SOP by reacting MOP with various sulphate salts. The method is employed primarily by a single German company, which produces its own MOP. Because it produces its own MOP, the cost of this production method is kept relatively low when compared to the similarly chemical-based Mannheim method discussed below. MOP to SOP production accounts for approximately 15 per cent. of the global supply of SOP, according to CRU.
- The Mannheim method is an alternative chemical process for producing SOP, often referred to as a “secondary” SOP production process. It is the most common method of producing SOP, accounting for approximately 51 per cent. of global SOP supply, according to CRU. The method uses MOP, sulphuric acid and energy to produce SOP and hydrochloric acid. Due to the high input costs associated with the necessary energy and purchasing MOP from a third party, this is the most expensive of the three methods. It is important to note that the economics of the Mannheim method significantly rely on the value and ability to sell the by-product, hydrochloric acid. As a result, classic supply and demand dynamics do not necessarily apply in respect of the Mannheim method, which means that Mannheim producers are not always economically incentivised to simply increase production when demand for SOP is high.

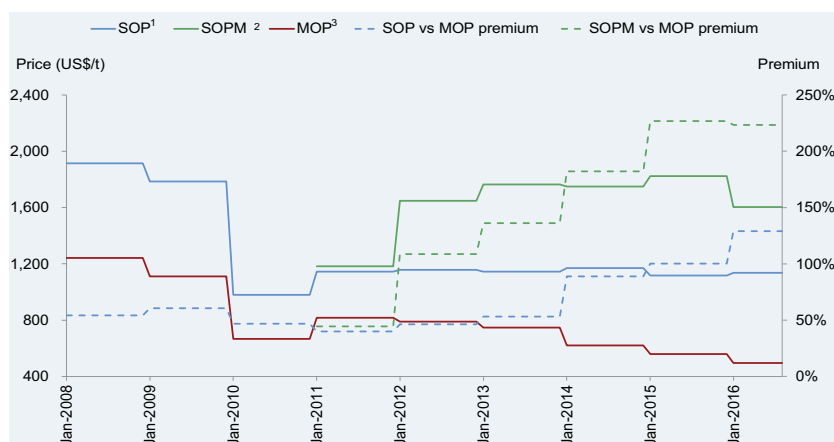
SOPM is produced by extracting potassium and magnesium mineral salts from langbeinite ore. Langbeinite ore is first mined using conventional mining methods. The ore is then processed into a slurry, separated with a flotation of magnetite iron oxide to enhance the product quality and washed to remove residual impurities. The production of SOPM from langbeinite ore currently takes place on a significant scale only in mines in the southwestern United States.

#### (c) SOP and SOPM Pricing

SOP and SOPM prices depend on demand and supply and tend to correlate with crop prices and MOP prices. However, SOP and SOPM producers are able to demand a premium over MOP prices as SOP and SOPM offer a combination of low chloride content and additional macro-nutrients (sulphur and magnesium). The chart below illustrates the product prices in 100 per cent. K<sub>2</sub>O equivalent basis and the premiums obtained by SOP and SOPM in comparison to MOP on this basis. According to CRU, the premium of the price for SOP over that for MOP has averaged 69 per cent. from January 2008 to January 2016, with a high of 129 per cent. and low of 40 per cent. The premium for the SOPM price over the MOP price averaged 154 per cent. from January 2011 to January 2016, with a high of 227 per cent. and low of 45 per cent. This may be a result of farmers increasingly acknowledging the value of magnesium in fertilizers. Furthermore, the value generally

increases when magnesium can be combined with low chloride products for use on high value chloride-sensitive and magnesium-responsive crops. The practical and agronomic efficiency that farmers can gain is yet another benefit of the use of multi-nutrient fertilizers as compared to single nutrient fertilizers.

#### SOP and SOPM vs MOP price comparison on a 100 per cent. K<sub>2</sub>O equivalent basis



Source: CRU; Argus FMB; Intrepid Potash; graph produced by Sirius Minerals

#### Notes:

- (1) SOP price based on North West Europe
- (2) SOPM price based on Utah, US (Trio product by Intrepid Potash company fillings)
- (3) MOP price based on North West Europe

#### 1.3.2 Polyhalite

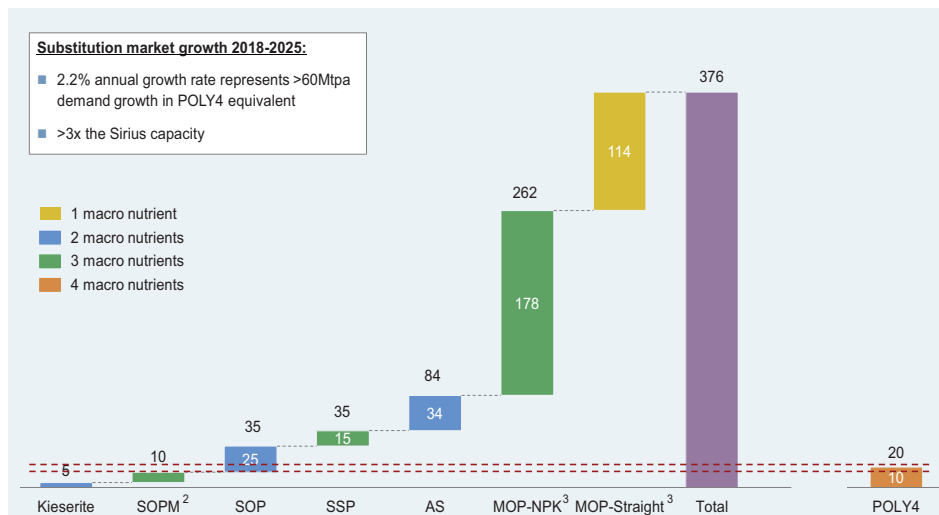
Polyhalite is a multi-nutrient hydrated sulphate of potassium. For example, the nutrient content of 90 per cent. pure polyhalite ore includes: 14 per cent. potassium oxide, 19 per cent. sulphur, 6 per cent. magnesium oxide, and 17 per cent. calcium oxide. Generally, polyhalite deposits may also contain trace micro-nutrients such as boron, manganese, iron, zinc, copper, molybdenum and selenium, which are also important for plant development. Deposits within the Project area that is under development by the Company have been found to include such elements. Polyhalite is expected to be increasingly used as a source of potassium in fertilizer (both as a straight fertilizer as well as a feedstock into fertilizer blends) as it also provides other important nutrients and has low chloride content, which makes it comparable to SOP and SOPM. Polyhalite also contains calcium, which offers an additional value.

##### (a) Polyhalite Market

According to CRU, polyhalite's characteristics as a multi-nutrient, low-chloride potassium fertilizer suggest that it has the potential to be used as a substitute for other existing fertilizers which include some of the same primary nutrients contained in polyhalite, such as potassium-based fertilizers (SOP, SOPM and MOP), sulphur-based fertilizers (ammonium sulphate and single superphosphate) and magnesium-based fertilizers (kieserite), thereby offering a large potential contestable market. According to CRU, the total market for these potentially contestable fertilizers is expected to increase from 376 mtpa in 2018 to 440 mtpa in 2025 in polyhalite equivalent terms (representing the amount of polyhalite which would be necessary to fulfil the potassium, sulphur and magnesium nutrient demand currently sourced from the existing potential substitution fertilizer products discussed above), although polyhalite's multi-nutrient composition means it may not always serve as a direct substitute for each of the other products.

The below graph shows a breakdown of the potential substitution opportunities, expressed in polyhalite-equivalent tonnes of the product and based on the primary nutrient substitution and the estimated demand of end product in 2018.

### Estimated potential substitute demand in 2018<sup>(1)</sup> (mtpa of polyhalite equivalent)



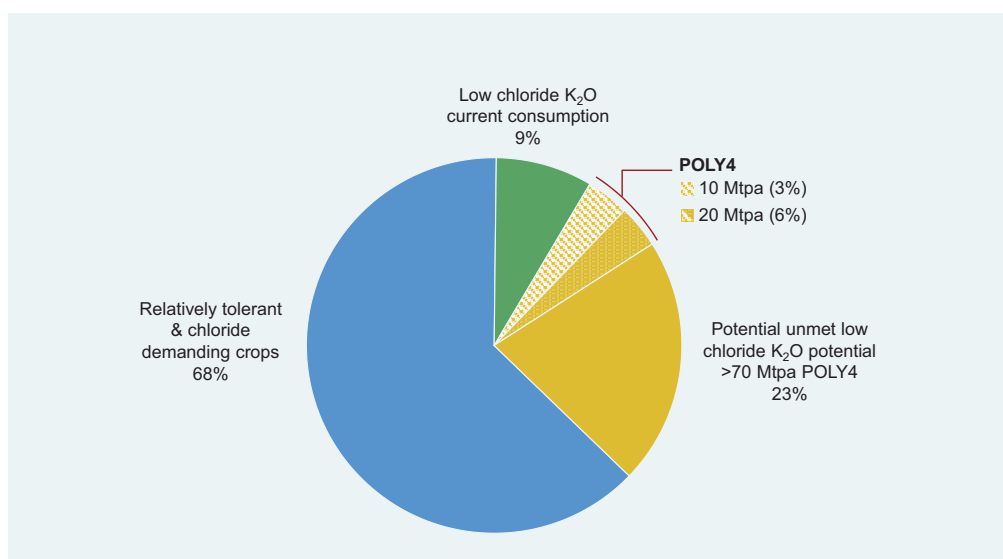
**Sources:** CRU data; graph produced by Sirius Minerals

**Notes:**

- (1) Global demand forecast of primary substitute fertilizer products in 2018 by CRU expressed in polyhalite equivalent.
- (2) SOPM demand calculated on MgO equivalent basis which represents 2.8 mtpa of low-chloride K<sub>2</sub>O on a polyhalite equivalent basis.
- (3) Fertecon estimates that 61 per cent. of the K<sub>2</sub>O sold in the market ends up as part of a multi-nutrient fertilizer blends.

In addition, the Company believes there is significant potential for growth in the low chloride potassium fertilizer market for chloride sensitive crops. Chloride sensitive crops include high-value crops such as tea, coffee and many fruits and vegetables, including potatoes. The chart below illustrates that low chloride potassium fertilizer is estimated to only account for 9 per cent. of total potassium fertilizer consumption in 2018. Based on the estimated potassium fertilizer usage per crop type, approximately 32 per cent. of potassium fertilizer usage in 2018, which represents the equivalent of 101 mtpa polyhalite, is expected to be on crops that have chloride sensitivity and could therefore benefit from the application of low chloride fertilizers. The remaining 23 per cent. therefore represents the Company's estimates of the currently unmet demand, which is equivalent to approximately 70 mtpa of polyhalite.

### Estimated low chloride potassium fertilizer market growth potential (2018)<sup>(1)</sup>



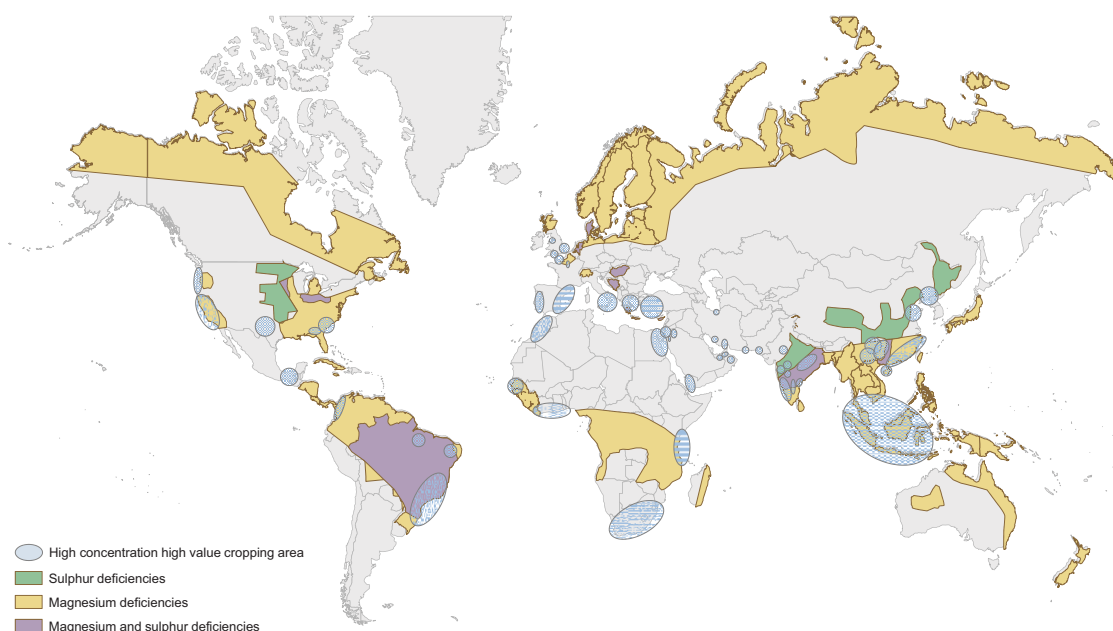
**Source:** FAO, CRU data; graph produced by Sirius Minerals

**Note:**

- (1) Sirius Minerals agronomy programme assessment of crop chloride tolerance levels based on the CRU forecasted potash (expressed in K<sub>2</sub>O) consumption in 2018 and the K<sub>2</sub>O consumption by crop type based on FAO data.

Sulphur and magnesium soil deficiencies in key agriculture regions are expected to further grow the potential market for polyhalite, as illustrated in the below map. According to the Sulphur Institute, the amelioration of sulphur deficiency alone could accommodate an incremental annual application of approximately 60 mtpa of polyhalite-equivalent fertilizer. This sulphur imbalance is the result of improved control of sulphur dioxide and other greenhouse gas emissions from coal power stations, as global emissions of sulphur dioxide have fallen at an average rate of 2.7 per cent. per year since 1990. This environmental improvement has reduced the occurrence of acid rain, a source of sulphur for many agricultural areas, which has led to sulphur deficient soils, and this trend is expected to continue due to the maintenance of strict pollution legislation.

**Estimated sulphur and magnesium soil deficiencies in 2015**



**Source:** TSI; CRU; Roland Berger; image produced by Sirius Minerals

**Note:** Sulphur deficiency in 2015 is estimated to be 11.4 mtpa, or 60 mtpa in polyhalite-equivalent.

#### (b) Polyhalite Production

There is a limited supply of primary (naturally occurring) resources for polyhalite. The largest and highest-grade known deposit of polyhalite is located in North Yorkshire, United Kingdom and forms part of the Zechstein Sea evaporite basin, which extends from the UK to Lithuania. The Project is concerned with the development of this deposit.

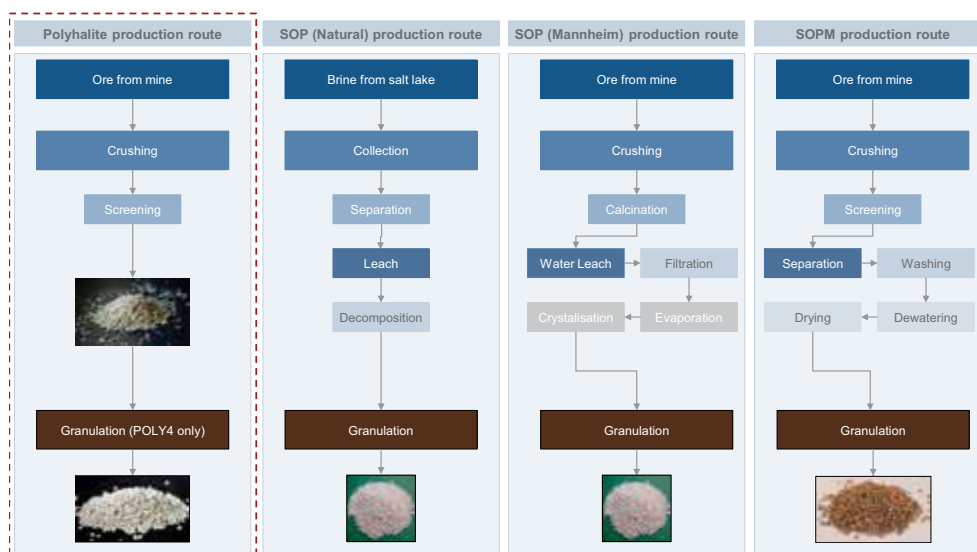
Polyhalite can be treated as an organic product as it is a naturally occurring mineral that does not require any chemical processing to be used as fertilizer. It is simply mined, crushed, screened and bagged. The Company also plans to granulate its polyhalite in a proprietary process to produce its granulated POLY4 product. According to CRU, only Israel Chemicals UK currently produces polyhalite from the nearby Boulby Mine and IC Potash and the Company have projects to commercialise resources. IC Potash, however, has indicated that it is planning to use its mined polyhalite to produce SOP, due to the lower grade of its polyhalite resource.

Polyhalite is simpler and less expensive to produce than both naturally occurring and chemically produced SOP as well as SOPM. Their simple, non-chemical processing, combined with the high grade ore from the Company's deposit means that, for the Project, one tonne of mined ore can generally become one tonne of saleable product. The patented POLY4 granulation (or pelletisation) process enables the Company to offer a higher quality product than the coarse, unprocessed polyhalite currently on the market. Due to the simplified production process, the production costs of polyhalite may be the lowest among multi-nutrient fertilizer producers globally.

The following diagram provides an overview of the differences in production methods between polyhalite, naturally occurring SOP, chemically produced SOP and SOPM.



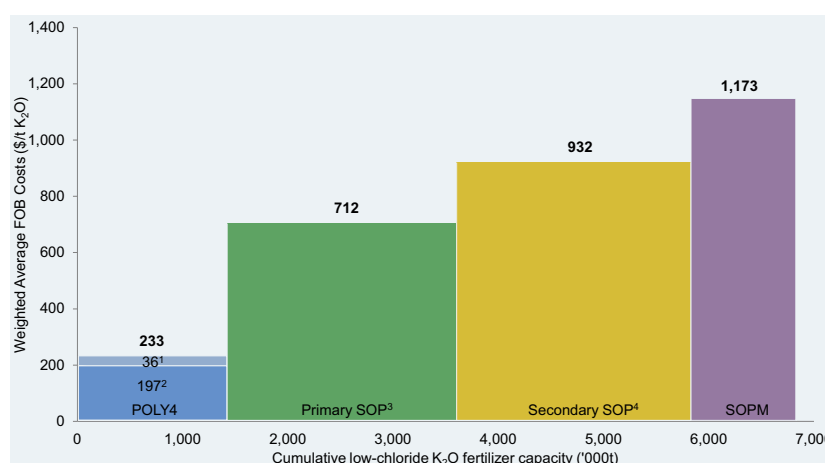
## Production methods



**Note:** The Company expects to market coarse as well as granular/pelletised POLY4 product. SOP and SOPM are also available as a coarse product.

The Company's anticipation of comparatively lower production costs for polyhalite is illustrated by the following chart, which shows that estimated operating costs vary greatly depending on the fertilizer type and the methods used to refine it.

**Estimated Low-chloride Potassium Fertilizer Cost (2025) – (Real 2016 US\$/t K<sub>2</sub>O)**



**Source:** CRU data, with polyhalite costs based on Sirius Minerals estimates only as no data exists for existing producers of polyhalite.

**Notes:**

- (1) Sirius Minerals estimate at a production level of 10 mtpa.
- (2) Sirius Minerals estimate at a production level of 20 mtpa.
- (3) Primary SOP refers to SOP produced using natural or chemical methods, as described above.
- (4) Secondary SOP refers to SOP produced using the Mannheim method, as described above.

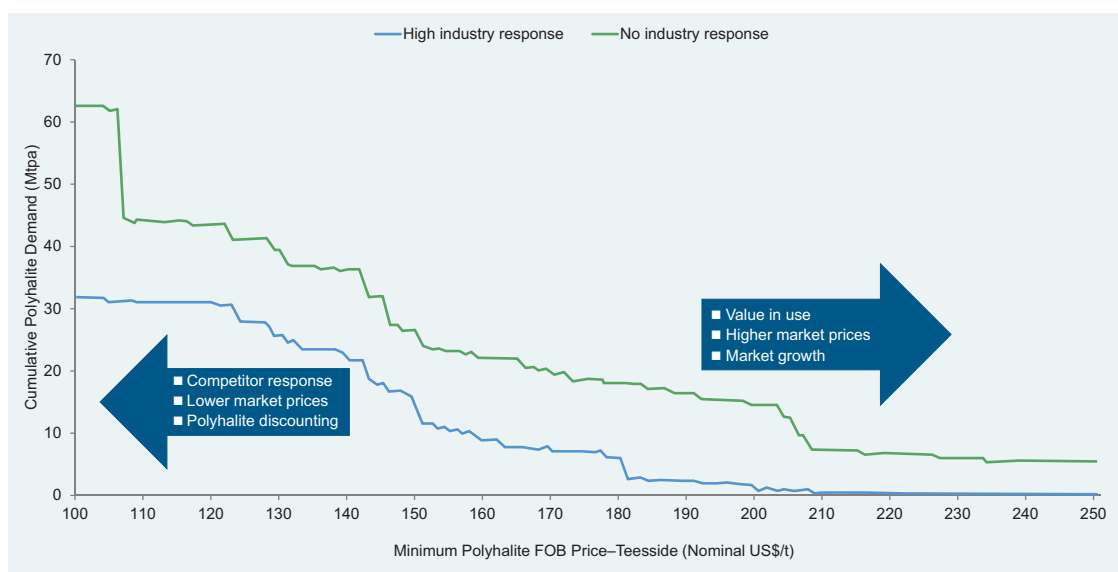
### (c) Polyhalite Pricing

#### (i) Pricing based on substitution

According to CRU, a substitution market for polyhalite can be expected to develop based on its price competitiveness. CRU assessed the demand for polyhalite over a range of prices to determine a polyhalite demand window. The graph below represents CRU's assessment of the likely demand for polyhalite at various price points depending upon the potential response of existing producers of substitute multi-nutrient fertilizer products. The "No Industry Response" scenario assumes producers of substitute products do not respond to the additional fertilizer volumes supplied by Company. The "High Industry Response" scenario assumes producers of substitute multi-nutrient fertilizer products reduce product prices to as low as their own production costs. The exact position of sales volume

and price within the demand window will depend on the strategy implemented by the Company. CRU has not attempted to identify a specific price point.

### Estimated Polyhalite Demand Window 2025<sup>(1)(2)(3)</sup>



**Source:** CRU; annotations by Sirius Minerals

**Notes:**

- (1) Assumes zero per cent. crop yield gain from polyhalite relative to substitute products.
- (2) The substitute products analysed are, MOP, SOP, SOPM as well as SSP (single super phosphate), AS (ammonium sulphate) and kieserite.
- (3) US\$ values expressed in nominal terms.

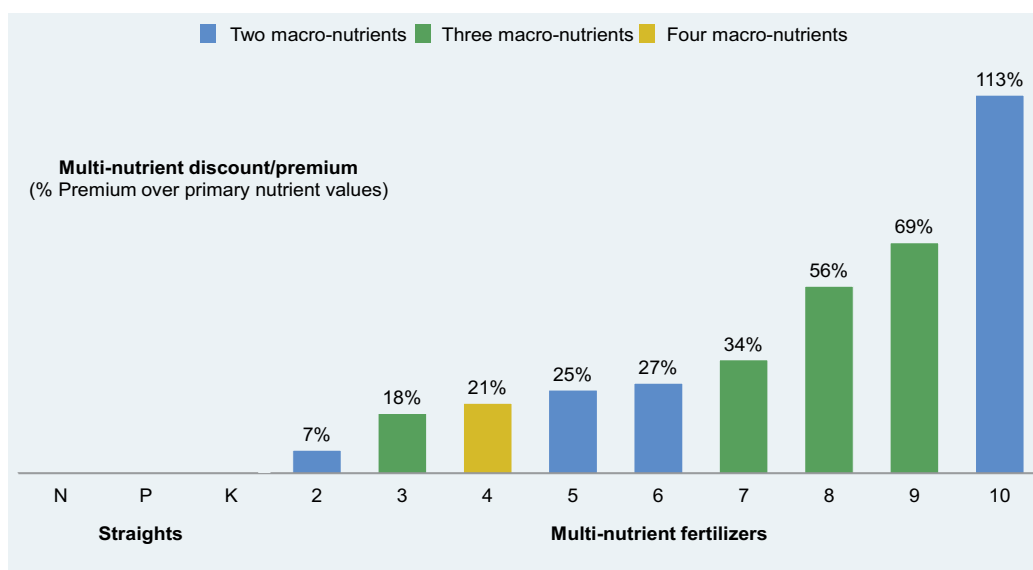
The graph above suggests 10 mtpa polyhalite demand is supported by a price range on a free on board basis between US\$156 per tonne and US\$205 per tonne, and 20 mtpa polyhalite demand between US\$142 per tonne and US\$169 per tonne, depending on the pricing response of competitors in the fertilizer industry. This does not take into consideration any potential increase in demand for multi-nutrient and low-chloride products or price appreciation as a result of improved product performance (for example, improved crop yield and quality) and therefore increasing value in use or the potential adverse impact of a reduction of fertilizer prices, demand and production costs on polyhalite pricing levels.

(ii) Multi-nutrient premiums

In the fertilizer market prices are primarily driven by market supply and demand dynamics, in which the nutrient content of the product determines the price the market is willing to pay.

The graph below shows the premium obtained by multi-nutrient fertilizers in 2015 over the sum-of-the-parts nutrient value. In this graph, each bar represents a multi-nutrient product in which the bar illustrates different premiums over the sum of the nutrient value of a sample of products available in the market. The x-axis represents the baseline value of the fertilizer (the sum of the component nutrients), and each premium bar represents the percentage difference between the sum of the parts of the given fertilizer and the quoted price in that particular market. The graph shows that multi-nutrient fertilizers typically command a premium over the sum-of-the-parts nutrient value, which is generally attributed to efficiency gains and synergies due to multiple nutrients being provided in a single product. The weighted average premium of the multi-nutrient substitution market is +63 per cent., which represents bars 2 through to 10 on the graph below and is equivalent to a market size of approximately 80 mtpa polyhalite-equivalent in 2018, according to CRU.

**Premiums on multi-nutrient products over sum of the component parts<sup>(1)</sup>**



**Source:** Source data indicated in Notes below. Graph produced by Sirius Minerals

**Notes:** The note numbers below correspond to the bar numbers in the graph above. The notes provide information on the product and the specific price reference points used to calculate the sum of the part nutrient values.

- (1) Multi-nutrient premium based upon the difference between quoted prices by CRU (Annual 2015), IPI (Average Q1-Q3), K+S (Quote provided by trader Sep 2015) and regional single nutrient value (excl. Ca), N (Urea), P (phosphoric acid 100 per cent. P<sub>2</sub>O<sub>5</sub>), K<sub>2</sub>O (MOP), S (sulphur), MgO (kieserite, GR, CH).
- (2) Triple Super Phosphate premium based upon regional prices (BR) over implied nutrient value P.
- (3) NPK T: 15 premium based upon regional prices (Baltic, EU, CH) over implied nutrient value N, P and K<sub>2</sub>O.
- (4) NPK-S T: 15 premium based upon regional price (CH) over nutrient content implied value N, P, K and S.
- (5) Calcium Ammonium Nitrate premium based upon (EU) prices over nutrient content implied value N.
- (6) AS based upon regional prices (US, BR) over nutrient content N and S value.
- (7) SOPM US premium (US IPI TRIO) over nutrient content implied value K<sub>2</sub>O, S, MgO (No Cl-free value).
- (8) SOPM EU premium (K+S Patentkali CPT quote) over nutrient content implied value K<sub>2</sub>O, S, MgO (No Cl-free Value).
- (9) SSP regional price (BR) over nutrient content implied value P and S.
- (10) SOP granular regional price (US, EU) premium over K<sub>2</sub>O + S value (No Cl-free value).

## 2. OVERVIEW OF THE SALT INDUSTRY

Although it is not part of its core strategy, the Company believes it is possible to mine de-icing salt (rock salt) via the planned Project infrastructure. Selling rock salt may create incremental value for the Project.

Salt has more than 10,000 commercial applications but the vast majority of salt is consumed in four main markets: chloralkali production, synthetic soda ash production, road de-icing and food or food processing.

There are three general methods of salt production.

- Rock salt is mined from underground deposits by drilling and blasting.
- Solar salt is produced by natural evaporation of seawater or brine in salt lakes.
- Evaporated salt (usually used for table salt as it has the highest purity) is evaporated in large “pans” which boil away the water from salt brine.

Salt is a highly commoditised product and its production is relatively concentrated among a few leading producers. According to Roskill Consulting Group, salt consumption for de-icing purposes varies between 30 and 45 million tonnes per annum in the North American and European markets combined, depending on the weather conditions. These two markets would be the Company's two main target markets for de-icing salt sales. Rock salt is the main form of salt used in de-icing, accounting for over 95 per cent. of U.S. and approximately 70 per cent. of EU annual consumption, according to Roskill Consulting Group.

Trade flows in de-icing salt are largely inter-regional. The relatively low value of commodity grades of de-icing salt means that transportation costs add significantly to prices, and in some cases, shipping costs can exceed the value of the product being transported.

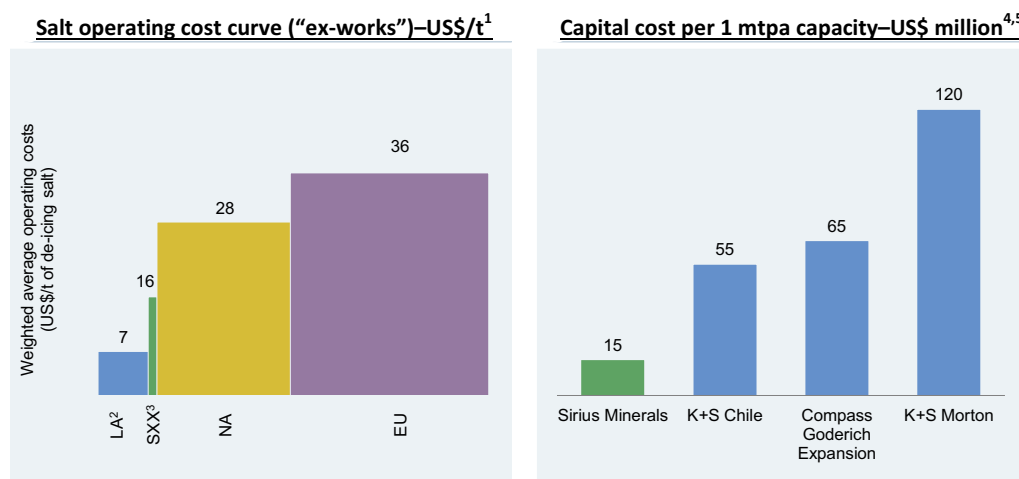
The de-icing salt market is highly commoditised and it is relatively easy for a new producer to access the market due to the fact that the purchase considerations are based primarily on lowest-cost basis tender processes, with considerable volatility in demand and price elasticity due to weather conditions. The tendency for large-scale salt purchases to be subject to tender processes would align with the Company's planned approach of potentially being a swing producer of de-icing salt as it assesses the business opportunity.

The Company expects to be able to access a significant resource of high-grade rock salt to gain an opportunistic entry into this commoditised global market. The high-grade rock salt Inferred Mineral Resource of 550 million tonnes above 93 per cent. pure sodium chloride, of which 210 million tonnes is above 95 per cent. pure sodium chloride, is within the immediate area of the polyhalite mine and potentially accessible using the infrastructure, ventilation and equipment planned for the mine. It is situated approximately 115 metres above the polyhalite seam, according to FWS Consultants. The Company believes that its salt resource is strategically located, with high proximity to its planned harbour facilities.

A scoping study conducted by the Company estimated the capital cost for 2 mtpa of de-icing salt capacity to be US\$28.9 million, involving construction of an access ramp to the rock salt deposit over 12 months, with an estimated operating cost of US\$22.2 per tonne on a free on board basis. SRK has independently confirmed the reasonableness of the cost estimates and the potential feasibility of this opportunity. The resource and the market assessment have been independently verified by FWS Consultants and Roskill Consulting Group, respectively.

Operating costs of producing de-icing salt vary by region with average rates in Latin America being approximately US\$7 per tonne and in North America and Europe being between US\$28 and US\$36 per tonne, according to Roskill Consulting Group. By contrast, the Company's operating cost is estimated to be US\$16 per tonne on an "ex-works" basis (which represents the free on board costs excluding loading costs) as shown in the graph below. In order to compare the capital cost estimate of the de-icing salt opportunity (US\$28.9 million capital costs for 2 mtpa of capacity) with other salt assets around the world a simplified capital costs comparison has been provided in the graph below. This graph shows that the cost of the Company's de-icing salt opportunity is significantly lower on a 1 mtpa capital intensity basis in comparison to other salt operations around the world.

### Industry benchmarks

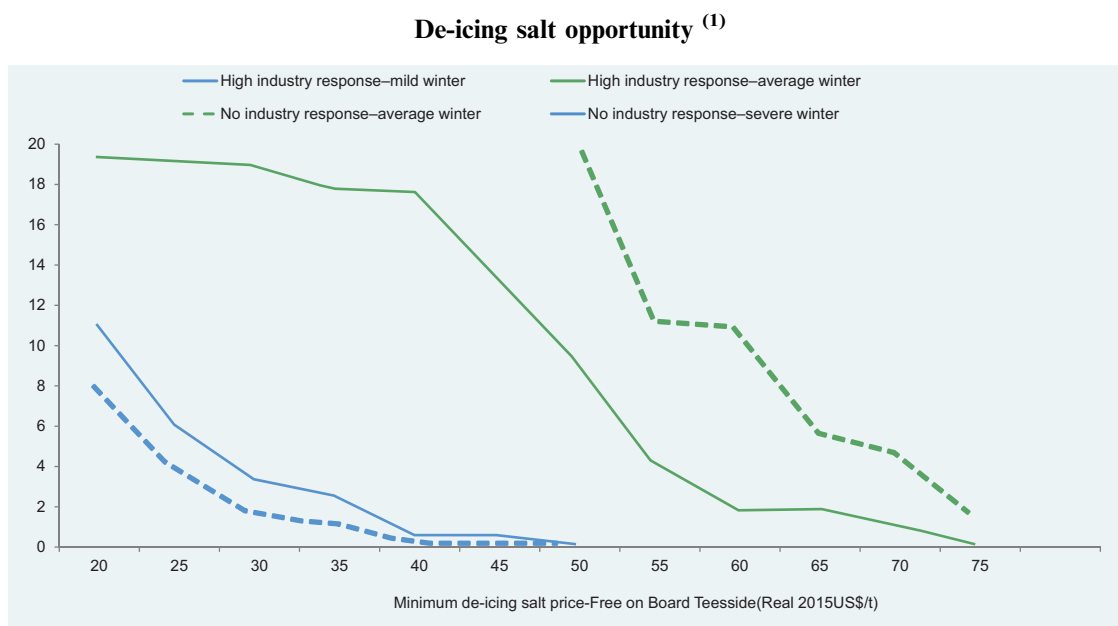


**Source:** Roskill Consulting Group; public company filings; graphs produced by Sirius Minerals

#### Notes:

- (1) Operating cost estimate by Roskill Consulting Group by geography in 2025 expressed in real 2016 terms.
- (2) LA market represents weighted average cost structure of de-icing salt producers in the Caribbean and South America; majority of salt is consumed in North America which would mean that a weighted average shipping cost of US\$10 per tonne should be added.
- (3) SSX denotes Sirius Minerals. The Company's estimated life of mine operating costs represents free on board costs with a deduction of the loading charges in port.
- (4) Simplified capital cost per 1 mtpa of salt capacity; no distinction made between salt type and/or other (in) tangible value of the assets.
- (5) K+S Chile acquisition 2006 (US\$477 million for 8.6 mtpa); Compass Minerals Goderich expansion between 2010 and 2012 (US\$70 million for 1.1 mtpa); K+S Morton Salt acquisition in 2009 (US\$1.7 billion for 14 mtpa).

A market assessment by the Roskill Consulting Group has indicated that the Company could compete successfully against the major salt producers at certain price levels. The report estimates that if the Project were to produce 2 million tonnes in 2025, it could achieve an estimated minimum selling price of US\$29 per tonne under a scenario of high industry response and a mild winter and an estimated minimum selling price of US\$74 per tonne under a scenario of no industry response and a severe winter. The graph below shows this estimated opportunity window.



**Source:** Roskill Consulting Group

**Note:**

- (1) Roskill Consulting Group independently assessed the market opportunity for a Company salt business, taking into consideration a) seasonal demand (mild, average and severe winters); b) operating costs of 25 existing de-icing salt assets (primarily rock salt); c) transportation cost to end market; d) a range of industry price responses to the Company's market entry; and e) Road salt price forecast for 2025 in real 2015 US\$ per tonne.

## PART 7

### BUSINESS DESCRIPTION

*Unless otherwise stated, the financial information relating to the Company and the Group set out in this part of the document has been extracted without material adjustment from the historical financial information in Part 11 (“Historical Financial Information”) of this Prospectus.*

#### 1. OVERVIEW

The Company is focused on the development of what the Company believes to be the world’s largest high-grade known polyhalite deposit, located in North Yorkshire, United Kingdom – the North Yorkshire polyhalite project (the **Project**). If successful, the Project will be of significant national importance, creating thousands of jobs in North Yorkshire and Teesside and with the potential to make the United Kingdom a leading global participant in the multi-nutrient fertilizer industry. The Company’s polyhalite product, which it markets under the trademarked name POLY4, is a multi-nutrient fertilizer that can be used to achieve balanced fertilization, which is critical to obtain optimal crop yields and quality. The Company has developed a multi-channel, global sales strategy to meet what it believes will be a high level of market opportunity for multi-nutrient fertilizer products like POLY4, which have numerous advantages over traditional potash fertilizers. In support of this strategy, the Company intends to continue its global agronomy programme to further validate the performance of POLY4 in key geographical markets and for a large variety of crops. This programme is aimed at enhancing the market adoption of POLY4 by more widely demonstrating its nutrient value and benefit to customers. The Company also plans to implement an extensive product development programme in order to further explore other value-enhancing uses of POLY4, such as its incorporation into high-value NPK fertilizers and new application techniques such as seed coating.

As of the date of this Prospectus, the Company has entered into binding large-volume, take-or-pay offtake agreements for POLY4 upon first production, for the total purchase of 3.6 mtpa at their respective full volumes with terms ranging between five and ten years in length starting from initial production. The offtake counterparties are customers in China, North America, Central America and South America. Certain of these customers have options to purchase an additional 0.9 mtpa in aggregate. The agreements may be terminated in certain circumstances including the occurrence of a force majeure event, an insolvency event or persistent material breach of the agreement by either party and, for two of the agreements, if Project milestones are more than six months behind schedule.

Bringing the Project to an initial production capacity of 10 mtpa will involve the construction of an underground mine to enable the extraction of polyhalite, along with the necessary infrastructure both above and below ground that will be required for transportation, processing and distribution. Construction comprises the sinking of two vertical mine shafts to access the polyhalite deposit and building a 37 kilometre-long underground conveyor (Mineral Transport System, or **MTS**), a processing facility for granulating or chipping the mined material into the final physical form (Material Handling Facility, or **MHF**) and harbour facilities comprising an approximately 3.5-kilometre long overland conveyor, a ship berth and a ship loader located adjacent to the harbour on the River Tees.

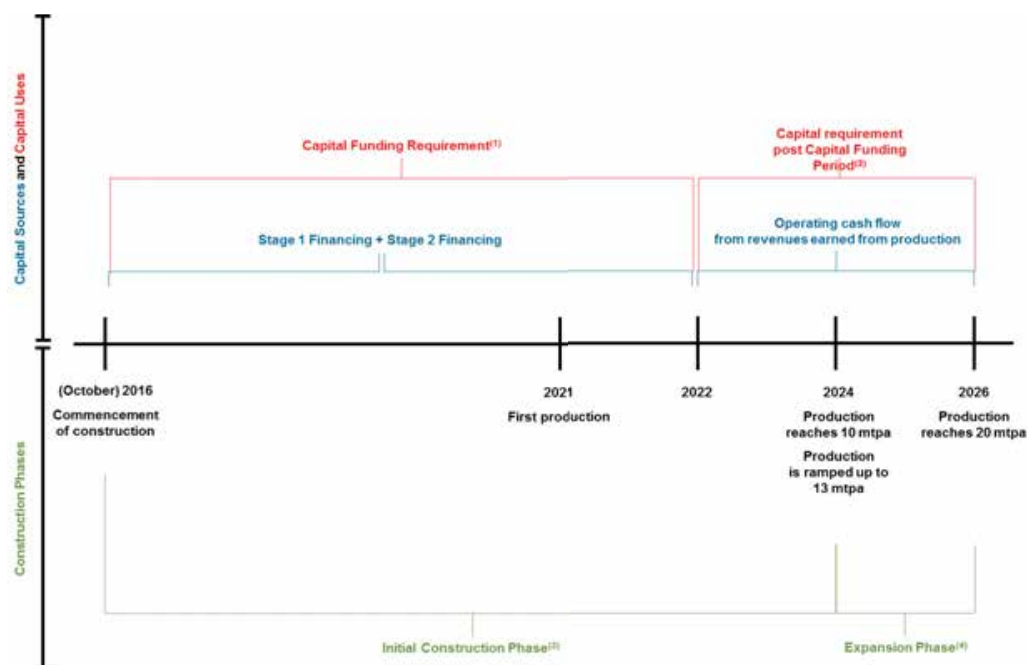
The Woodsmith mine and MTS are the subject of planning permissions granted by the North York Moors National Park Authority (**NYMNP**) on 19 October 2015 and Redcar and Cleveland Borough Council (**RCBC**) on 19 August 2015. Together, these grant planning permission for the construction and operation of the mine, mine head and the MTS. Planning permission for the MHF was granted by RCBC on 14 August 2015. Planning permission was granted for the Construction Park and Ride by Scarborough Borough Council on 20 August 2015 and for the Operations Park and Ride by NYMNP on 12 August 2015. On 25 July 2016, the Secretary of State for Transport approved a development consent order, the York Potash Harbour Facilities Order 2016 (the **DCO**), authorising the construction and operation of the harbour facilities. Secondary permitting has commenced as necessary in line with the Project’s construction schedule with certain applications having been lodged and with a land drainage consent environmental permit having been granted.

The Company expects to progress the Project in two primary phases: the initial construction phase (the **Initial Construction Phase**) and the expansion phase (the **Expansion Phase**). The Initial Construction Phase is intended to achieve first production from the mine by the end of 2021, and production capacity of 10 mtpa by mid-2024. Capital requirements of the Initial Construction Phase are expected to be externally financed in two stages during the Capital Funding Period (expected to

fund the Project to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after the Construction Commencement Date). With the infrastructure existing at that point in time, there is the potential for production capacity to reach 13 mtpa (under existing planning permissions) in mid-2024 by incremental addition of mining, granulation and harbour capacities. The Expansion Phase is intended to eventually increase production capacity to 20 mtpa, subject to receipt of additional planning permissions and the completion of additional infrastructure. The Stage 1 Financing, which is intended to fund the direct costs of all site preparation, mine shaft excavations, tunnel caverns and a proportion of the indirect costs, project management and owner costs as well as provide contingency funds for the Project, consisted of three elements: the 2016 Firm Placing and Placing and Open Offer, the 2016 Convertible Bond Offer and the Royalty Financing, each as described in paragraph 8.3.5 (“*Financing Plans*”) of this Part 7. Drawdown of the Royalty Financing is conditional upon, *inter alia*, satisfaction of the conditions more fully described in paragraph 11.6.3 (“*Royalty Financing Agreement*”) of Part 12 (“*Additional Information*”) of this Prospectus. Drawdown of the Royalty Financing will take place only once the Group has taken forward its development plans through capital expenditure of US\$630 million of the other Stage 1 Financing. The Stage 2 Financing, which is intended to fully fund the remainder of the Capital Funding Requirement (as defined in paragraph 8.3.1 (“*Capital Requirements*”) of this Part 7, is currently expected to consist of senior debt facilities. See paragraph 8.3.5 (“*Financing Plans*”) of this Part 7. Capital costs of the Initial Construction Phase after the Capital Funding Period and capital costs during the Expansion Phase are expected to be financed by operating cash flow from revenues earned from production.

The Board believes that the Company’s intention, stated in the Existing Prospectus in November 2016, to seek a premium listing was a significant factor in the ability of the Company to attract institutional investors as part of the Company’s successful 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering. The Board therefore believes that a premium listing will allow the Company to continue to benefit from a strong and growing interest in the Company from a wider pool of potential investors and that the Main Market is an appropriate listing venue given the scale of the Project and its national significance.

The following timeline illustrates the various expected stages of financing and phases of construction and production.



**Notes:**

- (1) This is the Company’s estimate of total expected capital funding requirement during the Capital Funding Period, i.e. to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after the Construction Commencement Date. It should be noted that this amount differs from the capital cost estimate as presented in the CPR, which reflects the Company’s estimated capital costs during the Initial Construction Phase but is presented on a different basis and excludes certain items and also assumes commencement of construction in April 2016, in line with the DFS, rather than in October 2016. The actual Construction Commencement Date was 1 January 2017.



- (2) Represents capital costs which are expected to be funded out of cash flow from operating activities, including capital investment associated with the ramp-up to production of 10 mtpa, incremental capital investment associated with additional mining, granulation and harbour capacities needed to increase production capacity to the current maximum permitted amount of 13 mtpa by 2024 as well as the incremental costs needed to further increase the Project's production capacity to 20 mtpa.
- (3) The Initial Construction Phase runs broadly from the Construction Commencement Date until production capacity reaches 10 mtpa, currently intended to be in mid-2024, although infrastructure works necessary for expansion will begin during this period.
- (4) The Expansion Phase runs broadly from mid-2024, until production capacity reaches 20 mtpa, assuming planning permissions are received, although infrastructure works necessary for expansion will begin during the period defined as the Initial Construction Phase.

## 2. COMPETITIVE STRENGTHS

The Company believes that it possesses a number of competitive strengths, as follows, that together are expected to enable the successful implementation of its strategy.

### *There is a large and growing market opportunity for the Company's products*

The Company's focus is on developing the market for its POLY4 product. POLY4 is a multi-nutrient fertilizer that can be used to achieve balanced fertilization, which is critical to obtain optimal crop yields and quality. The Company estimates the multi-nutrient substitution market opportunity (excluding MOP) to be more than ten times the potential production capacity of the Project, providing the opportunity for significant market demand to be met upon commencement of commercial production. Trends including a growing global middle-class population (and therefore increased consumption of agricultural products), increasing soil nutrient deficiencies (for example, sulphur and magnesium deficiencies) and diminishing arable land per person are further increasing the need for large-scale production and use of sustainable multi-nutrient fertilizers.

Global demand for POLY4 is evidenced by the fact that the Company has long-term Offtake Agreements in place for the total purchase of up to 3.6 mtpa, in an industry in which long-term contracts are not the norm. Furthermore, the Company has entered into other commitments for POLY4, bringing the total binding and non-binding commitment volume up to 8.1 mtpa at fully contracted volumes and assuming non-binding commitments and options to acquire further POLY4 are exercised.

The Company expects its POLY4 product to attract demand in the global fertilizer market as a result of numerous advantages not typically found in standard fertilizers and which taken together make POLY4 distinctive, including: (i) its low-chloride (essential for chloride-sensitive high value crops, like potatoes), multi-nutrient content (four of the six macro-nutrients essential for plant growth, namely, potassium, sulphur, magnesium and calcium); (ii) a relatively low salt index, which allows plants to absorb more water and more nutrients; (iii) its compatibility with several blending sources, which increases its shelf life; (iv) comparatively low carbon dioxide emissions; and (v) its viability for use with organic-certified crops. The Company believes POLY4 will prove to be an attractive alternative to traditional potash fertilizers which can contain too much chloride and are thus detrimental to the growth of most crops. See paragraph 5.1 ("POLY4") of this Part 7.

### *High grade asset with no dilution and long expected life*

The Company is focused on the development of what the Company believes to be the world's largest high-grade known polyhalite deposit, of which the Mineral Resources and Ore Reserves are reported using the internationally accepted JORC Code. The Probable Ore Reserves have a mean grade of 88.4 per cent. polyhalite and a mean thickness of 25 metres, and there are areas within the deposit that are up to 70 metres thick. The Company believes that such levels of quality, thickness and consistency will allow high efficiency bulk mining methods to be adopted.

The polyhalite deposit is estimated to have a life of greater than 50 years. While the thickness and quality of the polyhalite is unknown outside of the currently drilled area, the Mineral Resource delineated to date occurs within only 7 per cent. of the Project's area of interest. While the Company has concentrated its exploration to date in an area it considered had most potential for containing mineable polyhalite, and while some of the area of interest has been explored historically and shown to be less promising, there are significant portions of the area of interest that have not yet been explored and which have potential to add to the Mineral Resources and Ore Reserves reported in this Prospectus.

The quality of the polyhalite ore in the Project area is a key feature of the Project. In the potash industry, mines such as those for traditional MOP potash typically extract multiple tonnes of low grade ore to produce a single tonne of product. By contrast, the Company expects to sell nearly every

tonne of ore that is extracted from its mine, as the ore expected to be retrieved is, on average, sufficiently high grade that it plans for every tonne of mined ore to become a tonne of POLY4 product.

In September 2016, the Company's independent consultants, SRK, reported that the Project has Probable Ore Reserves of 280.2 million tonnes with a mean polyhalite grade of 88.4 per cent. Total Indicated and Inferred Mineral Resources of 2.66 billion tonnes of polyhalite with a mean polyhalite grade of 85.7 per cent. have been reported (Indicated Mineral Resource of 820 million tonnes with a mean polyhalite grade of 87.3 per cent. and a total Inferred Mineral Resource of 1.84 billion tonnes with a mean polyhalite grade of 85.2 per cent.). The reported Ore Reserve is a sub-set of the Indicated Mineral Resource and not additive. It should be noted that the Company is targeting retrieval of material with a polyhalite grade of 88 per cent. or above and will therefore have to be selective in its mining strategies.

***Efficient operations and a relatively low operating cost base, resulting in compelling economics***

The Company believes that once commercial production is achieved, it will be among the lowest-cost multi-nutrient fertilizer producers globally, as a result of (i) the simple, non-chemical production process for POLY4 which means that virtually every tonne of the high grade polyhalite that is mined can become a tonne of POLY4 to be sold; (ii) the Company's ability to adopt high efficiency bulk mining methods, fostering relatively efficient mining operations; and (iii) the proximity of the planned harbour facilities to the mine. The planned mine site is less than 40 kilometres from the harbour facilities where the Company's products will be shipped to customers. In addition, the planned MTS utilises a wholly-owned underground conveyor system which provides a low-cost, efficient and dependable means of transportation when compared to other alternatives, such as rail. Moreover, it is to be constructed to permit transportation of up to 20 mtpa, permitting a potential scale of production which will facilitate further operating cost efficiency.

As a result of the expected efficiency of the mining operations once commercial production is achieved, and the resulting relatively low projected operating costs per tonne, the Company expects gross margins from the Project to be between 70 and 85 per cent., depending on production volumes, POLY4 prices, and other key assumptions (see paragraph 8.3.4 (*"Project Financial Analysis Assumptions"*) of this Part 7), which would result in some of the highest margins in the industry. The Company believes there may be further opportunities to enhance profitability and value in the long-term by exploring downstream opportunities (such as NPK blending and seed coating) and diversification opportunities (such as de-icing road salt, MOP and SOP).

As a result of the projected level of operating costs and margins, the Company expects that the Project's net present value (NPV) is approximately US\$15.4 billion, with an internal rate of return (IRR) of 28 per cent., both assuming, among other things, that production of 20 mtpa is eventually achieved. See paragraphs 8.3 (*"Project Economics"*) and 8.3.4 (*"Project Financial Analysis Assumptions"*) of this Part 7 for the Company's key assumptions underlying the Project's financial analysis.

***The Project has commenced construction***

All of the key planning approvals necessary for the Project have been granted by the relevant regulatory authorities, and the judicial review periods have expired without any objections being tabled. Moreover, the Company has selected preferred and highly experienced contractors for its mine site and MTS construction, and the Company has an experienced management team in place to manage implementation of the Project and take operations forward once construction is complete.

### **3. STRATEGY**

#### ***3.1 Short-term strategy***

Since the successful completion of the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering, the work of the Company has been largely focussed on: the discharge of planning conditions; mine site preparation; negotiations with land owners and the main contractors; and the development of the work schedule and budget for 2017.

The Company has set a number of short-term objectives which it intends to execute over the next 12-24 month period following Admission as part of its short term strategy, as further detailed below. The specific work planned by the Company in the short term is as follows:

### ***Implementation of the Initial Construction Phase of the Project***

The first key stage of the Initial Construction Phase comprises a number of site preparation and pre-sink activities and, in the short term, the Company will be focussed on the successful execution of these activities which ultimately feed into the critical path for the Project. These activities include:

- recruiting additional personnel who will support the Company's existing experienced management team to manage the implementation of the Project and in particular the Initial Construction Phase. The Company intends to recruit locally, where possible, targeting people with relevant industry experience to ensure high levels of competency through implementation and ultimately into operations;
- completing site preparation and earthworks on key locations including the mine site, Lockwood Beck, where an intermediate mine shaft will be located, and at Wilton, the location of the MHF. In this regard:
  - ground water monitoring drilling and other investigation works are underway at the mine site;
  - the first stages of site preparation works at Woodsmith mine head site and Lockwood Beck are tendered and site preparation works will be completed in 2017; and
  - extensive design works associated with the main shaft sinking programme are being progressed under an incentivised engineering contract with Associated Mining Construction UK Limited (AMC). The permanent winding equipment required for the main shafts will be ordered in early 2017 to allow for them to be used during construction. The Company is currently targeting the mobilisation of the necessary equipment on site in preparation for the initial construction works associated with the shaft sinking programme to commence by mid-2017; and
- satisfaction of planning conditions and obtaining of secondary approvals as required to progress the scheduled construction activities.

These activities are being funded from the proceeds of the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering as set out under the heading "2017 budget summary" below.

### ***Completion of material procurement activities for the Project***

The Company has already appointed various preferred contractors for the Project and intends to complete the procurement of contractors for all key areas of the Project such that all appointments will be in place prior to executing the Stage 2 Financing in mid-late 2018. In order to achieve this milestone the Company is focussed in particular on the following:

- the design and build construction contract with the Company's preferred contractor, AMC, in respect of the mine site development scope which is currently under negotiation and is intended to be agreed by mid-2017 prior to commencement of the initial construction works associated with the shaft sinking programme;
- rollout of a detailed geotechnical investigation programme with the results of the investigation to be reflected in commercial negotiation of the full design and build construction contracts for the MTS; and
- commencement of a programme of early stage test work and design work in connection with the MHF and harbour to inform a tendering process for construction of the MHF which will be completed thereafter.

These activities will be funded from the proceeds of the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering as set out under the heading "2017 budget summary" below.

### ***Expansion of the Company's global sales strategy***

In the short term, the Company intends to continue expanding its global sales strategy by continuing to develop the depth and breadth of its research and development programme and by continuing to develop commercial partnerships by agreeing further offtake arrangements with more customers in the Company's target markets for POLY4. The Company's Stage 2 Financing will be conditional on the Company securing a certain level of offtake agreements, and the ability to secure or maintain this financing could be jeopardised if the Company were to lose a threshold of offtake agreements, because either it or a counterparty defaults on a given agreement. Accordingly, the Company has

identified the procurement of additional Offtake Agreements as a key part of the Company's strategy from Admission. The Company has also planned continued research and development work to support and complement the marketing strategy and to assess the potential to produce additional products for specific markets and the trade mark registration of POLY4 in the targeted jurisdictions.

### ***Completion of the Stage 2 Financing***

The Stage 2 Financing is currently expected to be fully funded by senior debt facilities which are expected to be committed approximately two years after the Construction Commencement Date, prior to commencement of tunnelling works, and drawn down after the Stage 1 Financing proceeds have been utilised, which is expected to be approximately three years after the Construction Commencement Date, in 2019. From the second quarter of 2017 the Company will commence the process of preparing materials that will be required by the Mandated Lead Arrangers' as part of their due diligence process for the Stage 2 Financing. Once these activities have been completed, definitive facility documentation and credit and other approvals for the Stage 2 Financing will be prepared for negotiation and agreement.

### ***Corporate governance and FTSE 250 indexation***

Both the high-profile nature of the Project, which has attracted national media coverage, and the successful completion of the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering have helped to generate strong and growing interest in the Company from a wide pool of potential investors. The Company believes that admission to the Main Market will give the Company the appropriate platform to raise its global profile, and to increase its trading volumes. On Admission, the Company intends to target eligibility for FTSE indexation, thereby increasing the number of investment funds that can invest in the Company. Consequently, the Board also intends to focus on ensuring that the Company continues to promote a high standard of corporate governance and is aligned with both the requirements for a premium listed company and the principles of the UK Corporate Governance Code, as further described in paragraph 2 of Part 8 ("*Directors, Senior Management and Corporate Governance*") of this Prospectus.

### ***2017 budget summary***

A detailed budget has been developed for the period to 31 December 2017 which envisages an expenditure of approximately £269 million in connection with the above short-term objectives of the Company. The key aspects of the budget can be summarised as follows:

<b>Category</b>	<b>Budget to 31 December 2017 (£m)</b>
Site preparation and early works	31
Mine site construction (including engineering and design, initial construction works)	136
Other development costs (including land access and geotechnical drilling, and engineering and design for MTS, MHF and harbour)	59
Corporate costs (including corporate and project overheads, marketing and agronomy)	43
<b>2017 budget total:</b>	<b>269</b>

### ***3.2 Long-term strategy***

The Company's long-term strategy is based on the following five pillars.

#### ***The Company intends to become a disruptive global fertilizer business***

The Company's POLY4 product is a low-chloride, multi-nutrient fertilizer, and the Company believes these characteristics will drive long-term price appreciation as customers become aware of its nutrient value and other value-in-use benefits. The Company is aiming to achieve first production from the mine by the end of 2021 and to achieve production capacity of 10 mtpa by mid-2024, with the ability for capacity to increase to 13 mtpa by mid-2024 under existing planning permissions and by incremental addition of mining, granulation and harbour capacities. Pending additional planning permissions, the rise to 13 mtpa would be followed by an additional increase in production capacity, culminating in 20 mtpa production capacity based on the infrastructure currently planned, including the construction of an additional shaft and additional MHF and port capacity. By using high-efficiency bulk mining methods, once commercial production is underway the Company expects to

become a disruptive global fertilizer business by being able to produce large volumes of POLY4 and making it widely available in the key markets of China, India, Southeast Asia, Africa, Europe, North America, Central America and South America. The Company believes that it will be among the most cost-competitive multi-nutrient fertilizer producers globally, with the ability to efficiently transport the product from the mine site to the processing and harbour facilities for delivery to customers. The Company believes that its financing plan (see paragraph 8.3.5 (“*Financing Plans*”) of this Part 7) will allow for an effective transition from the Project’s Initial Construction Phase to long-term cash flow generation.

***The Company intends to adopt a multi-channel, global sales strategy***

The Company intends to focus its sales strategy on the opportunities for various markets to adopt the use of POLY4 on a large scale. First, the Company expects that the multi-nutrient characteristics of POLY4 will allow it to become an economical substitute to existing sources of potassium, magnesium, calcium and sulphur for many customers. Second, the low-chloride nature of POLY4 may allow it to alleviate the global shortfall in supply of low-chloride fertilizers. Third, the growth in consumption of multi-nutrient fertilizers around the world is expected, in the longer term, to further increase the opportunity for POLY4 to enter the fertilizer market and in particular the NPK blending market.

The Company intends to continue its global agronomy programme to validate the performance of POLY4 in key geographical markets and for a large variety of crops. This programme is aimed at enhancing the market adoption of POLY4 as its nutrient value and benefit to customers are more widely demonstrated. The Company also plans to continue to implement an extensive product development programme in order to further explore other value-enhancing uses of POLY4, such as its incorporation into high-value NPK fertilizers and new application techniques, such as seed coating.

In addition, the Company intends to continue to enter into additional Offtake Agreements with customers, in advance of commencing commercial production, in order to establish long-term relationships with major customers and penetrate the downstream market. Such agreements are also expected to facilitate the development of the Project by permitting the Stage 2 Financing to proceed, as such Offtake Agreements are likely to be required by potential lenders as a pre-requisite to commitment of funds to the Project during the Capital Funding Period.

***The Company intends to optimise its commercial procurement outcome and delivery schedule by working with tier 1 partners to complete the Project***

The Company believes that the procurement process, which involves hiring contractors and sub-contractors to execute the construction of the various elements of Project infrastructure, is well advanced, with construction having commenced and key contractors ready to finalise procurement for the relevant scopes of work. The Company has selected its preferred contractors for the construction of the mine site and MTS. For the mine site, Associated Mining Construction (UK), a joint venture company formed among Thyssen Schachtbau GmbH and Thyssen Mining Construction of Canada Ltd, among others, has been selected as the preferred contractor. Associated Mining Construction (UK) is a globally recognised leader in shaft sinking and has experience sinking shafts for many of the leading potash producers as well as other types of mines. For the MTS, Hochtief Murphy Joint Venture, a joint venture between Hochtief (UK) Construction Limited and J. Murphy & Sons Limited, has been selected as the preferred contractor. Hochtief Murphy Joint Venture has been constructing major projects and infrastructure (including tunnelling works) in the UK since 2001. Mining equipment will be supplied by Joy Global. See paragraph 8.2.6 (“*Construction Management*”) of this Part 7 for more information on the procurement process.

The residual procurement requirements (primarily for the MHF and harbour facilities) are expected to be completed approximately two years after the Construction Commencement Date.

***The Company intends to adopt a two-stage approach to external financing in order to optimise its cost of capital over the Initial Construction Phase***

The Initial Construction Phase, which is intended to achieve first production from the mine by the end of 2021, and to achieve production capacity of 10 mtpa by mid-2024, is expected to be externally financed in two stages.

The Stage 1 Financing is currently intended to fund the direct costs of all site preparation, mine shaft excavations, tunnel caverns and a proportion of the indirect costs, project management and owner costs as well as provide contingency funds for the Project. According to the DFS as updated by the

Company's further estimates, the portion of the Capital Funding Requirement to be funded by the Stage 1 Financing is currently expected to amount to approximately US\$1.1 billion, plus an additional US\$0.1 billion in financing costs, for a total of approximately US\$1.2 billion. The funds from the Stage 1 Financing are expected to be spent within approximately the first three years after the Construction Commencement Date.

The Stage 2 Financing is intended to fully fund the remainder of the Capital Funding Requirement to achieve first production by the end of 2021. The Stage 2 Financing, supplemented by the expected operating cash flows from initial production, is expected to fund capital costs which are anticipated to largely include costs relating to tunnelling, MTS, mine fit out, the MHF and outsourcing charges relating to the harbour facilities. According to the DFS as updated by the Company's further estimates, the Capital Funding Requirement to be funded by the Stage 2 Financing is currently expected to amount to approximately US\$1.8 billion. The Stage 2 Financing is currently expected to be funded by senior debt facilities which are currently expected to be committed approximately two years after the Construction Commencement Date, prior to commencement of tunnelling works, and drawn down after the Stage 1 Financing has been utilised.

This two-stage external financing strategy is intended to fully fund the Project during the Capital Funding Period, after which the Company expects to fund further capital expenditure needs from operating cash flow. In order to align appropriate sources of financing to the Project risks as anticipated during the development, the Company has sought the Stage 1 Financing from sources of financing with higher costs in order to facilitate funding of initial construction activities during approximately the first three years after the Construction Commencement Date. Once the initial work has been completed on site preparation, mine shaft excavations and tunnel caverns, lower-cost Stage 2 Financing is expected to see the Project through to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after the Construction Commencement Date. See also paragraph 8.3.5 ("*Financing Plans*") of this Part 7.

***The Company intends to explore additional opportunities to derive incremental value from the development of the Project***

The two main areas in which the Company plans to seek opportunities in addition to sales of POLY4 are diversification opportunities and downstream opportunities. First, the Company may be able to use the Project infrastructure to additionally mine de-icing salt (rock salt) and/or sylvinite (assuming the receipt of additional planning permissions).

The Company has identified rock salt as a potential bolt-on addition to the Project infrastructure to create incremental value for the Project. A scoping study conducted by the Company, and verified by SRK, confirmed the potential feasibility of this opportunity. According to SRK and FWS Consultants, an Inferred Mineral Resource of 550 million tonnes of high grade (above 93 per cent.) sodium chloride has been delineated at the Project site. The Company believes that its rock salt resource is strategically located, with high proximity to its planned harbour facilities. According to Roskill Consulting Group, the Company's two main potential target markets of North America and Europe have combined annual consumption of de-icing rock salt of between 30 mtpa and 45 mtpa, depending on weather conditions.

Sylvinite can be mined and processed to produce MOP. It should be noted that the potential quantity and grade of any potential sylvinite deposit is conceptual in nature, as there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource. FWS Consultants and SRK believe, however, that there is sufficient data to report an Exploration Target, as defined by the JORC Code, of 180 to 300 million tonnes of sylvinite with an estimated mean grade of between 23 and 39 per cent. potassium chloride, which could be accessed without significant additional lateral development to the planned polyhalite mine. Such exploration is planned to be completed underground once production of POLY4 has commenced.

Second, the Company may seek opportunities to generate incremental profitability and value by exploring downstream business opportunities. For example, the Company may attempt to enhance its capability to produce mineral fertilizer blends by processing polyhalite into SOP. The Company may also seek to establish joint venture companies with strategic partners and create high-value NPK blending operations, which would enable the Company to participate further down in the value chain.

## 4. HISTORY

The Company was listed on the AIM market of the London Stock Exchange in August 2005. Since then, the Company's principal activities have been to raise funds to invest in developing potential mining opportunities. Prior to the acquisition of York Potash Limited (**YPL**) and the Project in January 2011, such development opportunities included projects in North Dakota, Queensland and Western Australia. These projects and associated project companies are now dormant or wound up, and the Company's resources are being used solely for the development of the Project. The Company's principal activities since the acquisition of YPL and the Project have been:

- July 2011: Beginning of exploratory drilling.
- June 2012: Project Inferred Mineral Resources defined as 1.4 billion tonnes at a mean grade of 88.7 per cent. polyhalite.
- January 2013: Off-shore mining licence obtained from the Marine Management Organisation.
- May 2013: Project Inferred Mineral Resources increased and upgraded to 2.66 billion tonnes at an average grade of 85.7 per cent. polyhalite (shelf and basin seams).
- June 2013: First polyhalite take-or-pay offtake agreement signed; 1 mtpa for 10 years with Yunnan TCT Yong-Zhe Company Limited (**Yunnan TCT**).
- September 2013: Ore reserves first defined as 250.0 million tonnes at an average grade of 85.7 per cent. polyhalite.
- January 2014: Take-or-pay offtake agreement signed; 0.5 mtpa with a U.S.-based Fortune 500 agribusiness.
- August 2015: Redcar and Cleveland Borough Council (**RCBC**) permission granted for mine, MTS and MHF; Scarborough Borough Council permission granted for a construction village and construction worker park and ride facility; National Park Authority permission granted for Whitby operational park and ride facility.
- August 2015: Commitment of take-or-pay offtake agreement with U.S.-based Fortune 500 agribusiness tripled to 1.5 mtpa.
- September 2015: Prequalification status received from the Infrastructure and Projects Authority (IPA, formerly Infrastructure UK) for consideration of a guarantee from Her Majesty's Treasury under the UK Guarantee Scheme (**UKGS**) in relation to the Project.
- October 2015: North York Moors National Park Authority (**NYMNPA**) permission granted for development of mine and MTS.
- March 2016: Material findings of the definitive feasibility study (the **DFS**) published.
- May 2016: Polyhalite Ore Reserves increased to a Probable Ore Reserve of 280.2 million tonnes at an average grade of 88.4 per cent. polyhalite.
- June 2016: Take-or-pay offtake agreement signed with Yunnan Dian Huang Peony Industrial Group Co., Ltd (**Dian Huang**), which replaces the agreement signed with Yunnan TCT in June 2013; selection of preferred contractors for development of mine site and construction of MTS.
- June 2016: Capital Funding Requirement reduced to US\$2.9 billion following engagement of contractors.
- July 2016: Development Consent Order granted by the Secretary of State for Transport for the harbour facilities.
- September 2016: Mandated Lead Arrangers announced for the Stage 2 Financing.
- October 2016: Royalty Financing Agreement signed with Hancock British Holdings Ltd, a subsidiary of Hancock Prospecting Pty Ltd.
- November 2016: 2016 Firm Placing and Placing and Open Offer and 2016 Convertible Bond Offering completed raising approximately US\$0.9 billion in respect of the Stage 1 Financing.

## 5. PRODUCTS

### 5.1 POLY4

The Company's current focus is on developing multi-nutrient polyhalite products. The majority of the production from the Project is expected to consist of granulated POLY4 for direct application as a fertilizer or for use in NPK blending. The Company has developed and patented a unique granulation process which enables polyhalite to be processed without the need for chemicals into a form which is

beneficial for plant nutrient uptake. A smaller proportion of polyhalite is expected to be sold in a coarse form, to be used by third parties in the formulation of their own fertilizer products or as a soil conditioner.

Polyhalite is an evaporite mineral comprising a natural combination of potassium (14 per cent.  $K_2O$ ) sulphur (19 per cent. S), magnesium (6 per cent.  $MgO$ ) and calcium (17 per cent.  $CaO$ ), with the chemical formula:  $K_2SO_4.MgSO_4.2CaSO_4.2H_2O$ . In the fertilizer industry, the Company believes polyhalite is an attractive low-chloride alternative to traditional potassium-bearing mineral products, including SOP and SOPM, because it incorporates not only potassium, but three of the other five key macro-nutrients necessary for plant growth (sulphur, calcium and magnesium).

A low chloride content is a key feature of polyhalite. Although all crops require chloride to some degree, many plants are sensitive to it and it can be toxic in high concentrations to many fruits and vegetables. Traditional potash fertilizers including MOP can contain too much chloride to be effective fertilizers for such common chloride-sensitive foodstuffs as tea, onions, strawberries and oranges, whilst the chloride containing fertilizers can only be used sparingly for moderately sensitive staples like potatoes, lettuce, corn and carrots.

Furthermore, the sulphur content in polyhalite makes it an attractive fertilizer as sulphur levels in soils are depleting globally. Sulphur dioxide is a primary industrial emission, contributing to both air pollution and acid rain. The deposition of sulphur from these emissions has in the past maintained the fertility of agricultural soils, but as government regulation, particularly in the developed world, increasingly tightens sulphur dioxide emissions to improve global health, the sulphur will need to be replaced via fertilizers if food production is to remain stable or grow. Polyhalite is a particularly good substitute for sulphur-based fertilizer as it is pH neutral and hence does not affect soil pH. In addition to having no effect on soil pH, polyhalite has no negative effect on soil conductivity.

The sustained simultaneous delivery of magnesium and potassium is another key advantage of polyhalite as a nutrient source. Conventional potash sources exaggerate the natural antagonism between potassium and magnesium commonly resulting in an induced crop magnesium deficiency. Polyhalite avoids this problem as the dissolution rate of the material supports a nutrient delivery which more closely reflects crop demand, so that the essential nutrients are readily available to the plant when needed. This feature of polyhalite also makes it especially valuable for use in sandy, well-drained soils, eroded soils, or extensively cropped soils where the nutrients can be naturally leached away or where a soil has a low nutrient holding capacity.

Furthermore, soils may be deficient in calcium, particularly as a result of repeated cropping. The calcium content in polyhalite functions to help rebalance and reconstruct the soil structure, improving drainage, aeration and resilience to erosion, in addition to functioning as a plant nutrient. Finally, polyhalite also contains key micro-nutrients which plants also need, such as boron, manganese, iron, zinc, copper, molybdenum, strontium and selenium.

Once the Company mines polyhalite, the majority of the product produced will be sold as POLY4. The Company believes that POLY4, like other polyhalite-based fertilizers, has several advantages which together make polyhalite-based fertilizers distinctive and which are not usually found in other fertilizers all at the same time.

- First, POLY4 contains four out of the six macro nutrients essential for plant growth, namely potassium, sulphur, magnesium and calcium. Due to its low chloride content it can be used for highly valuable chloride sensitive crops. Unlike conventional fertilizers, multi-nutrient fertilizers and low chloride potassium products like POLY4 typically command a premium based on resulting high crop yields and high crop quality as well as efficiency gains and synergies due to multiple nutrients being provided in a single product. POLY4 has proven in studies to perform well on various performance indicators, with different crops and in varying soil and climate conditions. The product is also ideal as a NPK fertilizer feedstock.
- Second, POLY4 has a relatively low salt index, which is further attenuated by the unique nutrient release rate of the product. Most fertilizers are salts that contain macro and micro nutrients which, when added to soil, cause an increase in the osmotic pressure of the soil solution. This reduces the ability of a plant to absorb water and the nutrients contained within the solution. POLY4 contains essential nutrients with low levels of salt compounds, which allows plants to absorb more water and retain more nutrients.



- Third, POLY4 is compatible for blending and can improve shelf life. When blending fertilizers, the compatibility of all components needs to be considered so as to prevent caking and ensure safety. POLY4's compatibility with several blending sources increases its shelf life by more than five months when compared to other frequently used fertilizers.
- Fourth, POLY4's embedded CO<sub>2</sub> emissions are low compared with other fertilizers. Application of fertilizer is identified as a significant source of greenhouse gases. The estimated value of global warming potential of POLY4 is 0.051 kilogrammes of CO<sub>2</sub> emissions per kilogramme of product, which is low compared to other non-polyhalite-based fertilizers and considerably lower than other potassium-based fertilizers such as MOP and common sulphur-based fertilizers such as ammonium sulphate.
- Fifth, POLY4 fills an important niche in the organic food market. As POLY4 is derived without chemical processing from a naturally occurring mineral, it is certified for use in organic farming and is therefore a viable fertilizer option for organic farmers barred from using other low chloride products which may be chemically derived.

## 5.2 *Research and Development*

The Company's research, or global agronomy, programme is designed to provide scientific data on specific crop responses to POLY4 and POLY4-based NPK blends to support ongoing discussions with customers on the technical and commercial applications of POLY4. The programme is now in its fifth year and has involved independent agronomic research conducted by academic institutions and research providers worldwide. To date, the programme has involved over 150 trials on 24 crops in 13 different countries, including the U.S., China, the UK, India, Brazil, Canada, Tanzania, Ecuador, Poland, France, Colombia, Malaysia and Turkey. Whilst it should be recognised that trial results are always specific to a site, crop and the weather, statistical analyses and trial repetitions provide confidence in declaring consistent POLY4-driven increases in crop yield and quality.

The global agronomy programme can be categorised into four phases:

- Phase 1 – identifying key characteristics of POLY4 and its suitability for practical use (2012-2015);
- Phase 2 – greenhouse crop trials (2013-2014);
- Phase 3 – field crop trials (2014-present); and
- Phase 4 – commercial-scale field trials (2015-present).

Phase 1 successfully showed POLY4's macro- and micro-nutrient content, its nutrient release rates, its benign effect on soil pH and its electrical conductivity. The potential practical applications of POLY4 were proven from the results of spreader testing, critical relative humidity testing and compatibility testing. In particular, compatibility testing showed that POLY4 may be used in a range of blends to replace conventional nutrient sources such as ammonium sulphate and single super phosphate, resulting in enhanced shelf life and reduced caking propensity of the blends.

Phase 2 successfully showed through pot studies under controlled conditions that POLY4 supports yield improvements for wheat, cotton, oilseed rape, potatoes, soybeans, peanuts, chilli peppers and corn (maize).

Phase 3 applied POLY4 or blends utilising POLY4 to crops of commercial significance in replicated plot scale field trials in various countries. Some of the notable results from Phase 3 trials were:

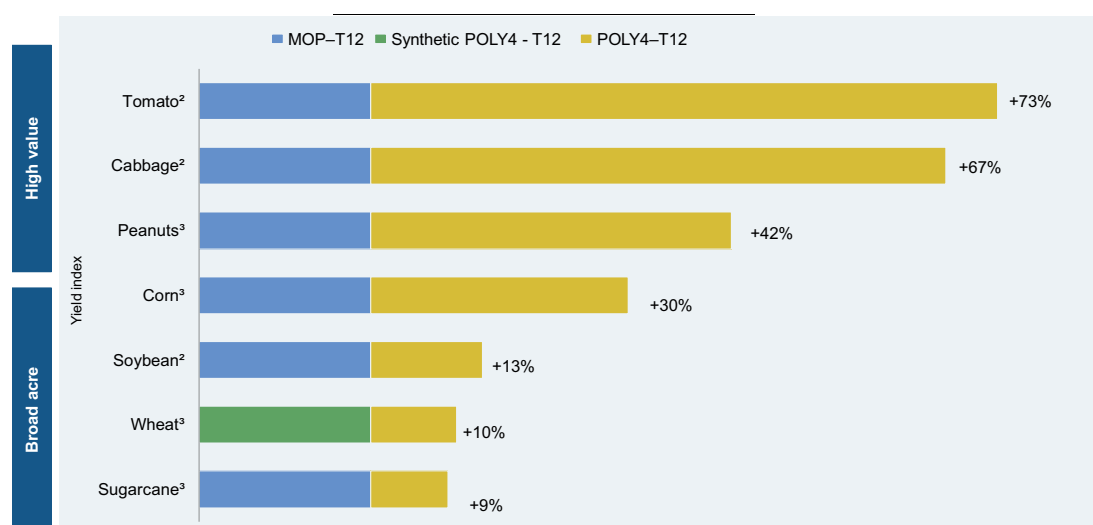
- In nutrient-balanced trials, POLY4 as a potassium source was shown to improve the yield of a large range of crops (including cabbage, oilseed rape, chilli peppers, corn (maize), cotton, potatoes, soybeans, sugarcane, wheat, rice, barley and tomatoes).
- POLY4 improved nutrient uptake for macro-nutrients by up to 257 per cent.
- There were improvements in micro-nutrient uptake from the addition of POLY4 to the crop fertilizer programme.
- The benefits of balanced nutrition manifested in improved crop health as crops showed more resilience to topical diseases such as corn sheath blight and tomato leaf spot.
- In studies on chloride sensitive species, POLY4 provided all of the potassium for a tea crop, resulting in spring tea yield improvements by approximately 6.9 per cent. as compared to SOP in trials in Yunnan and Sichuan in 2014 and 2015 at the recommended potassium oxide rate.

- When a POLY4 blend was used as a straight potassium source or a component of a blend, a given yield was achieved with a potassium dosage that was approximately 66 per cent. lower than that in a blend that did not have POLY4 as a component.
- Improvements in crop nutrient status have shown quality improvements in high-value crops such as tea, tomatoes, corn (maize), potatoes and chilli peppers as well as quality improvements for fruit vitamin C content, fruit Brix value, size and number, potato fry quality, soybean protein content, tea leaf quality and sugarcane sugar yield.
- In fully balanced chloride-free straight fertilizer trials, POLY4 as a multi-nutrient product has proven to be better than the sum of its parts from conventional sources, by up to 4.6 per cent.
- When a POLY4 blend was used, yields were up to 9.6 per cent. greater than when a fully balanced, chloride-free blend was used.

Phase 4 is currently underway, with commercial-scale trials being undertaken in conjunction with customers, which the Company hopes will further emphasise that POLY4 represents a reduction in time, money and resources necessary for economic crop production or reactive nutritional support. The Company has continued to work with agronomists and research scientists as part of Phase 4. POLY4 has already received favourable comment regarding its practical advantages and its fit into commercial fertilizer plans as a blend component as well as a straight product.

Application of low chloride potassium fertilizers has been shown to improve crop yield, quality and taste and also improves plant resistance to drought, frost, insects and diseases. Crops such as tea, coffee, beans, nuts, potatoes, horticulture plants and many fruits and vegetables are particularly sensitive to chloride. SOP and polyhalite have significantly lower chloride content (less than 3 per cent.) compared to MOP (approximately 45 per cent.) and are therefore more effective fertilizers for chloride-sensitive crops. According to the International Fertilizer Association, 47 per cent. of potash fertilizer consumption is for high-value crops where SOP would be of greater benefit than MOP. This is why low chloride fertilizers are typically priced at a premium over MOP. Once polyhalite-based products are well established in the market it is reasonable to assume they will also attract a price premium. Polyhalite has a multi-nutrient low chloride content, which offers two more macro-nutrients than SOP. Crop yields achieved with polyhalite have outperformed the yields obtained with MOP and SOP in various field tests around the world both when the fertilizers are used as conventional straights as well as when they are used as a feedstock into blends. These are expressed in the two graphs below. The theoretical polyhalite market opportunity based on broad-acre crops like corn (maize), soybean, wheat and sugarcane alone represents a 220 mtpa opportunity based on recommended application rates globally, although polyhalite's multi-nutrient composition means it may not always serve as a direct substitute for competing products.

**POLY4 performance against conventional blends<sup>(1)</sup>**



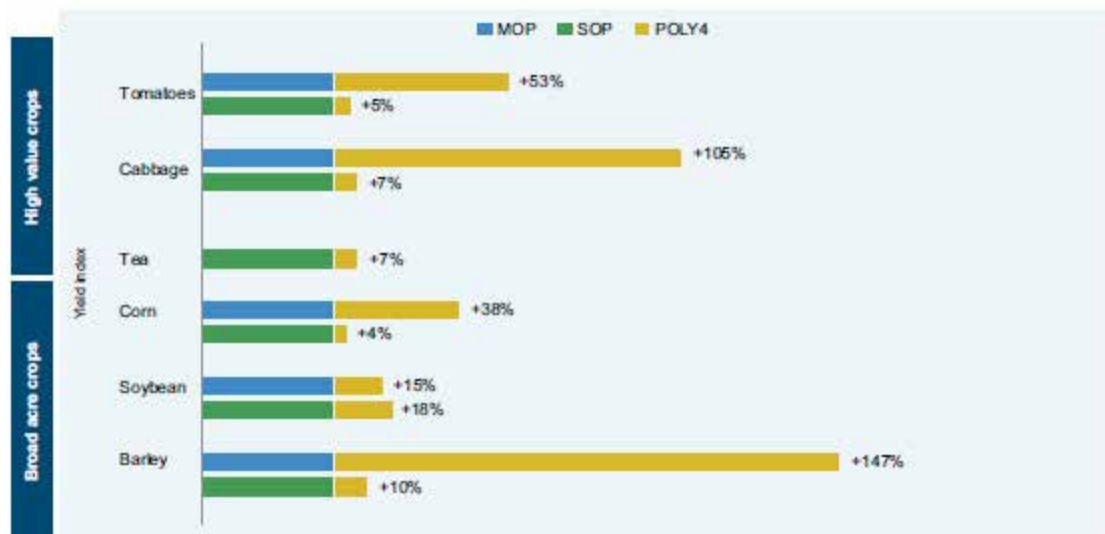
**Source:** Texas A&M; Durham University; University of Florida; Shandong Agricultural University; IFA; Sirius Minerals

**Notes:**

- (1) Yield parameters by crop: sugarcane yield, wheat dry weight, soybean fresh weight, corn aerial fresh weight (40 days), peanuts fresh weight, cabbage head weight, tomato yield. Yield gains of POLY4 over MOP T12 NPK blends and T12 NPK synthetic POLY4 made out of SOP, gypsum, and kieserite.

- (2) Field trial.
- (3) Greenhouse trial.

### POLY4 performance against conventional straights at recommended K<sub>2</sub>O applications<sup>(1)(2)(3)(4)</sup>



**Source:** Texas A&M; University of Florida; Warwick University; Sichuan Academy of Agricultural Science

**Notes:**

- (1) Yield parameters by crop; tomato yield, cabbage head weight, tea summer dry weight yield, silage corn dry matter, soybean yield, barley grain fresh weight.
- (2) Examples are field trial.
- (3) Per cent. improvement based on application of MOP/SOP and POLY4 equivalent of 1 kilogramme / hectare K<sub>2</sub>O.
- (4) All treatments given crop recommended N and P<sub>2</sub>O<sub>5</sub> application.

In parallel to the global agronomy programme, the Company runs a product development research programme. The aim of the product development research programme is to continually optimise current products and expand the Company's product portfolio through enhancing existing formulations of POLY4 or developing new ones.

As of the date of this Prospectus, the Company has invested approximately £9.5 million since January 2011 in market development, the global agronomy programme and the product development research programme.

## 6. CUSTOMERS AND SALES ARRANGEMENTS

### 6.1 Sales Strategy

The Company has developed a multi-channel, global sales strategy to meet what it believes will be a high level of market opportunity for multi-nutrient fertilizer products like POLY4. The Company has adopted a regional sales strategy that focuses on the eight largest fertilizer markets across the globe. This strategy is expected to allow for localised customer relationships to be established and maintained as production increases. It will also focus on continued customer support from a market and science perspective.

The Company's sales strategy is based on the opportunity for various markets to adopt the use of POLY4 on a large scale based on the following.

- Product substitution as a straight fertilizer: the multi-nutrient content of POLY4 allows customers the opportunity to incorporate POLY4 into their cropping systems as a source of potassium, magnesium, calcium and sulphur by substituting their existing straight fertilizers with POLY4.
- Unmet market demand: the fertilizer market currently lacks a cost-effective source of low-chloride potassium on a large scale and therefore there is an opportunity for POLY4 to fill this void.
- NPK blending market: NPK is an efficient carrier and delivery vehicle of a blend of nutrients. Customers are continually searching for ways to incorporate more nutrients into blends, making POLY4 and its four macro-nutrients a promising product to service this market.

The Company will focus on the opportunities it believes are presented in these areas as the basis for its sales strategy.

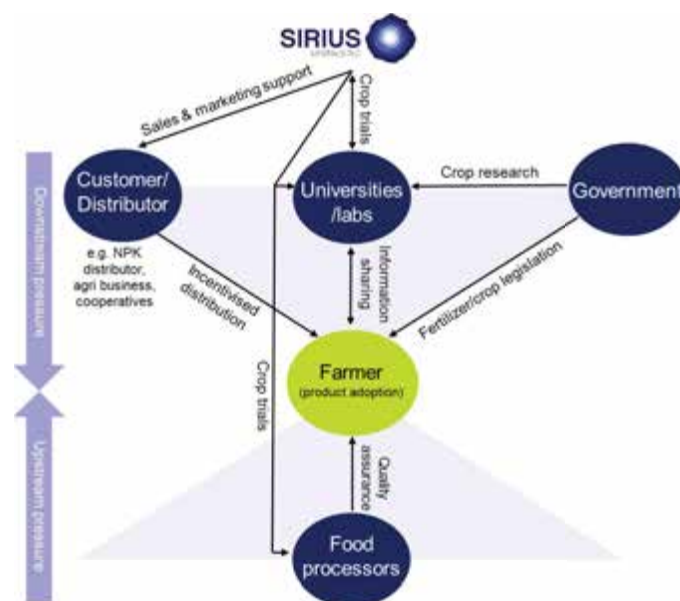
## 6.2 Market Considerations

### 6.2.1 Market Adoption

The Company has developed a multi-channel market adoption approach in order to achieve awareness and market penetration of POLY4 in the fertilizer industry. This multi-channel approach includes universities, customers, governments and food manufacturers.

- **Universities:** Since 2011, the Company has invested in its agronomy programme with over 16 universities in 13 countries, with a wide variety of crops (24 crops). It has established relationships with agronomic experts in key agricultural areas to demonstrate the agronomic value of POLY4 (including yield, quality and plant health) on a regional basis.
- **Customers:** The Company's global agronomy programme has been designed to produce scientific data to demonstrate agronomic value as it translates to commercial success. Moreover, the Company is working with current and potential customers to demonstrate the value of POLY4 in various applications through trials. The Company's existing Offtake Agreements include provisions obliging the Company to work together with the customer to establish a marketing plan to ensure the successful adoption of POLY4 in the relevant region.
- **Governments:** Food security is increasingly a key agenda item for governments in large agricultural markets such as India and China. The Company continuously seeks to assist such governments in developing sustainable fertilizer policies. The Company believes that the multi-nutrient characteristic of POLY4, together with the large outputs expected from the Project, could play a part in developing sustainable fertilizer policies.
- **Food processors:** The Company has worked with various multi-national food manufacturers to design and execute trials focused on the benefits that POLY4 can contribute to crop quality and certain specific requirements in food manufacturing processes.

The illustration below illustrates the dynamics with respect to market adoption and stakeholder management.



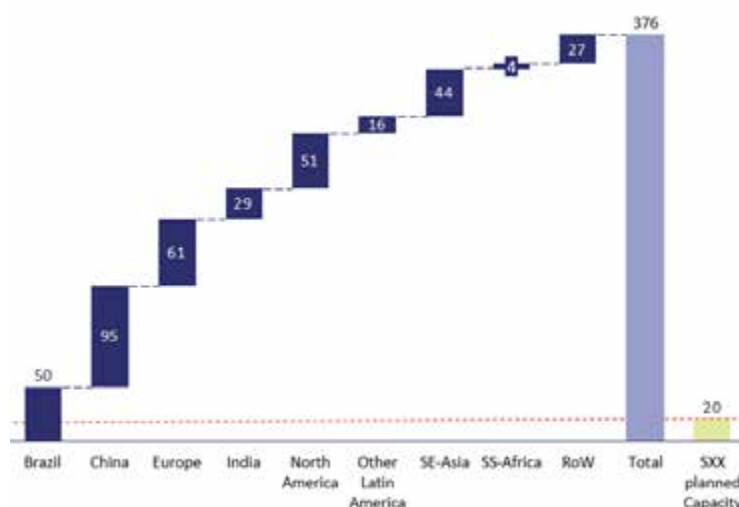
Source: Sirius Minerals

### 6.2.2 Market Development

The Company has developed and is deploying a multi-phase customer acquisition strategy around the globe to maximise its market share. This phased approach allows for the establishment and penetration of POLY4 in key agricultural markets.

The below graph shows a breakdown of the potential substitution opportunities per geographical region, expressed in polyhalite-equivalent tonnes of the product and based on the primary nutrient substitution and the estimated demand of end product in 2018, although polyhalite's multi-nutrient composition means it may not always serve as a direct substitute for competing products. For more

on the fertilizer industry, see Part 6 (“*Industry Overview*”) of this Prospectus. The Company intends to adopt a global sales strategy prioritising key agricultural regions, as detailed below, which have significant substitution opportunities and which have the potential opportunities for the Company indicated below. The Company’s intended strategy for adopting customers in those relevant markets is set out in paragraph 6.4 and its pricing strategy is set out in paragraph 6.3 below.



**Source:** CRU; graph produced by Sirius Minerals.

**Note:** Based upon competing products MOP, SOP, SOPM, ammonia sulphate, SSP and kieserite in POLY4 equivalent terms. “RoW” indicates all other jurisdictions; “SXX” indicates Sirius Minerals planned capacity of 20 mtpa.

In China, the key crops are rice, corn (maize) and several chloride-sensitive crops such as tea and many fruits and vegetables. The Company believes that the size of the Chinese agricultural market, soil nutrient deficiencies and the long-term effects of disproportionate fertilizer application provide an opportunity for long-term growth in multi-nutrient fertilizer use in China. The zero fertilizer growth policy currently being implemented across China is designed to encourage the use of fertilizer products that focus on efficiency, which is a characteristic of POLY4 as a multi-nutrient product.

In Europe, the Company expects to benefit from the proximity of its products to the large European agricultural market. Key agricultural crops such as wheat, corn (maize) and potatoes require significant amounts of the nutrients contained in POLY4. Furthermore, strict environmental legislation has resulted in widespread sulphur deficiencies in Western Europe, and this is likely to increase demand for sulphur-containing fertilizer products such as POLY4.

In North America, the key agricultural crops are corn (maize), soybeans, potatoes and wheat. The U.S. alone accounts for approximately 35 per cent. of the world’s corn (maize) production and approximately 32 per cent. of the world’s soybean production. The magnitude of the agricultural market, combined with the fact that North American farmers are often early adopters of new technology and products, make North America an attractive market for sales of POLY4.

In Brazil, the key crops are sugarcane, soybeans, corn (maize) and chloride-sensitive crops such as coffee and oranges. Such crops require significant amounts of the nutrients contained in POLY4. This region is the second largest agricultural market in the world in terms of volumes exported. The significant and widespread deficiencies of nutrients in Brazilian soils (in particular, potassium, sulphur and magnesium), combined with extensive cropping, has resulted in a need to sustain balanced fertilization. The Company’s crops trials have demonstrated that POLY4 outperforms conventional fertilizer products on major Brazilian crops such as tomatoes, sugarcane, corn (maize) and soybeans.

In Latin America, the key crops are tropical fruit, coffee and other high-value crops. The majority of these crops are chloride-sensitive and magnesium-responsive. This region is also severely magnesium-deficient. POLY4 is expected to meet the needs of this region for chloride-free, potassium- and magnesium-based fertilizers.

In Africa, fertilizer usage is currently very low compared to other agricultural regions. 60 per cent. of the world’s uncultivated arable land is in Africa. The Company believes that POLY4 will be valued by African farmers looking to increase their yield with an efficient, comparatively low-cost source of nutrients. The opportunity in Africa is likely to require a unique approach, with the engagement of

inter-linked agro-food stakeholders, including large-scale commercial farmers, governmental bodies and non-governmental organisations.

In India, major agricultural crops such as potatoes, onions, wheat, sugarcane and tomatoes lack in productivity as a result of severe soil nutrient deficiencies. Specifically, India’s extensive agricultural land use and national fertilizer policy have resulted in widespread potassium, magnesium and sulphur deficiencies. The Company believes that such soil deficiencies would benefit from the multi-nutrient characteristics of POLY4.

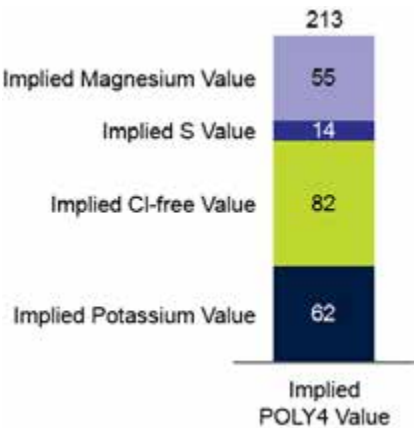
In Southeast Asia, the key crops are palm oil, sugarcane, rubber, tea and bananas. Soil fertility in most regions of Southeast Asia is very low due to the tropical, humid climate, with tropical rainforest being the main form of natural vegetation. Such circumstances require significant fertilizer application. Moreover, Malaysia and Indonesia are the world’s biggest consumers of soluble magnesium fertilizers, for palm oil production. The Company is currently studying the potential use of POLY4 as a source of key nutrients for palm oil.

6.3 Pricing Considerations

Low-chloride fertilizers such as SOP and polyhalite have significantly lower chloride content (less than 3 per cent.) than MOP (approximately 45 per cent.). Because low-chloride fertilizers such as SOP are more effective for chloride-sensitive crops, they are priced at a premium over MOP. The Company expects that once polyhalite-based products are well established in the market, they will also attract a price premium. For more on the fertilizer industry, see Part 6 (“Industry Overview”) of this Prospectus.

6.3.1 Implied Nutrient Value of POLY4

POLY4 not only has a low chloride content but is also a multi-nutrient fertilizer, offering two more macro-nutrients than other specialty potash fertilizers such as SOP. Four nutrients in POLY4 are widely recognised nutrients with multiple contestable markets. This enables the Company to determine the value of POLY4 on a regional basis. Independent experts monitor fertilizer prices on a weekly basis, and from this the Company can determine the derived nutrient value in each region. Implied nutrient value is derived from multiple price reference points such as those for MOP, SOP, ammonium sulphate and kieserite (a magnesium-bearing mineral). The below graph shows the implied nutrient value of POLY4 in northwest Europe in July 2016 as a sum of the underlying nutrient values. The values below are presented in U.S. dollars per tonne.



**Source:** CRU; graph produced by Sirius Minerals.  
**Note:** Implied potassium value based upon NW Europe (CIF) MOP granular price quoted by CRU (US\$266/tonne). Implied Cl-free value based upon NW Europe SOP (FCA) standard price quoted by CRU (US\$515/tonne). Implied sulphur value based upon ammonia sulphate (US\$103/tonne) with secondary price point urea granular black sea (US\$177/tonne). Implied magnesium value based upon German kieserite prices in NW Europe (US\$248/tonne).

6.3.2 Product Pricing Strategy

The Company believes that its POLY4 products will experience a similar long-term price appreciation as other multi-nutrient products that are in the market today. The Company believes this is because, among other things, polyhalite offers four macro-nutrients and trace micro-nutrients, has low levels of chloride and, as POLY4, will be available in an easily useable granulated form (for which the Company has sought and received patent protection). The Company’s pricing development model reflects historical buying and selling patterns in the global fertilizer sector and follows a long-term, three-phase approach, as follows.



- **Introduction Phase:** The product is offered at below nutrient value pricing for market entry and adoption.
- **Growth Phase:** With the benefit of mid- and long-term POLY4 performance results, the Company may be able to charge true nutrient value.
- **Mature Phase:** After several years of POLY4 adoption and performance and further development of value-added products, the Company may be able to implement above nutrient value pricing.

#### 6.4 Customers

The Company's sales and marketing strategy is based on a direct customer sales model in which POLY4 will be sold primarily directly to blenders and distributors, who then on-sell to both wholesale and retail distribution channels. The focus is to maximise the reach of POLY4, take advantage of the customers' distribution networks and benefit from the customers' logistics capabilities. In addition, sales teams will provide both commercial and agronomic support on a regional basis, which adds another level of interaction between the Company and its global customer base.

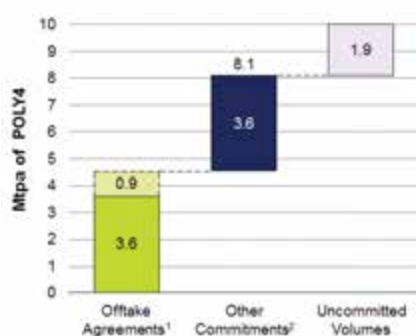
The Company or its subsidiary, YPL, have to date signed a number of binding large-volume, long-term Offtake Agreements under which customers have agreed to buy a minimum amount of POLY4 once production begins and pay a given price. Each Offtake Agreement is negotiated individually, with varying lengths, renewal periods and grounds for termination and are further described in paragraph 6.4.3 ("*Summary of Offtake Agreements*") below.

The Company, YPL, or in certain cases the Company's representatives and agents, have also signed certain MoUs, which are commitments to enter into future offtake or joint venture agreements, FSAs and LoIs with potential customers which provide a volume commitment and platform to discuss potential sales and pricing for POLY4 at a later date. Each of these is negotiated individually, generally on a non-legally binding basis, and provides differing volume commitments, with MoUs typically used for larger offtake or joint venture opportunities and FSAs and LoIs generally being a commitment to discuss future sales terms for a particular volume.

##### 6.4.1 Volumes

As of the date of this Prospectus, the Company has entered into Offtake Agreements totalling 3.6 mtpa at their respective full volumes. In addition, certain customers have options to take an additional 0.9 mtpa in aggregate.

There are other non-binding commitments in the form of MoUs, FSAs and LoIs between the Company and/or its agents and other potential customers in the amount of a further 3.6 mtpa (2.0 mtpa in MoUs, 0.5 mtpa in FSAs and 1.1 mtpa in LoIs). The following graph sets out the Company's current volume commitments based on the Company's initial planned production capacity of 10 mtpa.



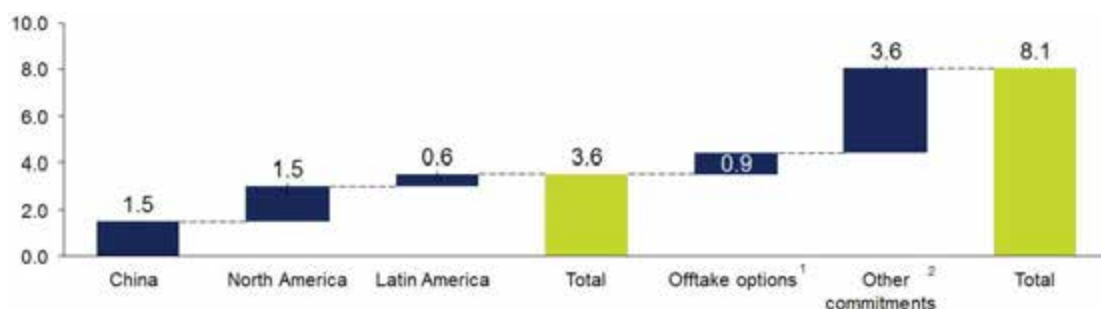
#### Notes:

- (1) 0.9 mtpa on top of the Offtake Agreements represents the options taken by certain offtake customers.
- (2) Other commitments represent non-binding MOUs, FSAs and LoIs.

##### 6.4.2 Geographic breakdown

The Company's Offtake Agreement customers are in China, North America, Central America and South America. The Offtake Agreement customers are significant businesses within the agricultural, fertilizer, or animal feed markets in these regions or in particular areas or provinces within these

regions. The following chart presents a breakdown of the Offtake Agreements executed by region over time.



**Notes:**

(1) 0.9 mtpa on top of the Offtake Agreements represents the options taken by certain offtake customers.

(2) Other commitments represent non-binding MOUs, FSAs and LoIs.

In addition to the Offtake Agreements, MoUs, FSAs and LoIs in an aggregate amount of 3.6 mtpa have been signed between the Company, YPL or the Company's agents and 28 counterparties spread across China, Southeast Asia, Europe, the Americas and Africa.

#### 6.4.3 Summary of Offtake Agreements

Offtake Agreements are being executed at this stage in the Company's development to secure long-term binding commitments for a certain amount of the Project's capacity. The primary reasons for this are to demonstrate the value in POLY4 through the acceptance and early adoption of the product by industry participants and to provide future cash flow for the Company to assist in securing financing for the Project, particularly the Stage 2 Financing.

Set out below is a summary of the Offtake Agreements which comprise agreements by customers to purchase 3.6 mtpa at the contractual maximum volumes. The Company considers those contracts summarised in paragraphs (a) to (e) below to be material. The Offtake Agreements, and their provisions, are based on what the Company considers to be the standard principles used in the industry when preparing such offtake agreements.

- (a) In January 2014, the Company signed an Offtake Agreement with a U.S.-based Fortune 500 agribusiness for 0.5 mtpa of POLY4. In August 2015, this Offtake Agreement was amended and restated and the customer's volume commitment was tripled to 1.5 mtpa. The volume profile progressively builds up to reach the 1.5 mtpa level in the fifth year of production. The customer has an option to increase the volume commitment to 2 mtpa. The initial tenure of the agreement is for seven years, with the potential to extend the agreement for two further five year periods. The customer has the exclusive right to resell and distribute POLY4 through its North American distribution network. The delivery method under the agreement is free on board. Pricing is based on benchmark prices of certain underlying nutrients which POLY4 contains, calculated using a mutually agreed formula which includes as variables quoted prices for competing fertilizer products and half of the volumes under this agreement are subject to a floor price mechanism which guarantees a minimum sales price for YPL for that portion in the event the price calculation drops below the floor price. If the customer can reasonably demonstrate that YPL supplies a third party with the same quality of polyhalite in quantities over 500,000 tonnes per annum (over a full year period under a similar arm's length agreement) at a lower price than the base price agreed, YPL will reimburse the customer the price differential for that 12 month period. The agreement provides that a sales and marketing programme be created between the parties to establish an appropriate marketing plan for the customer's sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. Termination rights are available for a force majeure event of more than 30 business days' duration (or 60 aggregate business days in a calendar year). Termination is also available on insolvency of either party and a material breach of more than 30 business days' duration. The customer can terminate if certain Project milestones are more than six months behind schedule, on written notice to YPL, however this right is subject to an initial review process, involving mutual discussion between the parties and good faith negotiations to resolve any concerns regarding the review event. Neither party is liable for indirect, consequential, punitive or other special damages.



- (b) In August 2014, YPL entered into an Offtake Agreement with a leading Central American fertilizer distribution business, whereby the customer has committed to purchase POLY4 for a five year term after first commercial production commences. The volumes step up from 0.15 mtpa in the first year to 0.25 mtpa in the fifth year. The customer has an option to increase the volume commitment by an additional 0.25 mtpa. The customer has the exclusive right to resell and distribute the Company's product in Central American markets and the non-exclusive right in certain South American markets for the duration of the agreement. The delivery method under the agreement is free on board. Pricing is based on a bespoke formula, including benchmark prices of certain underlying nutrients which POLY4 contains as well as other variables, and the volumes under this agreement are subject to a floor price mechanism which guarantees a minimum sales price for YPL in the event the price calculation drops below the floor price. The agreement provides for a steering committee to be established for both parties to work together to implement a marketing plan for sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. Furthermore, the agreement includes an event review mechanism by which any failed Project milestones may be addressed via good faith negotiation between the parties. The parties also agreed to consult and agree upon appropriate measures if a force majeure event of more than 15 days' duration (or 20 aggregate days in a 30 day period). Termination is available on insolvency of either party, a material breach of more than sixty business days' duration, or mutual agreement. Each party remains responsible for their respective payment or delivery obligations with regard to obligations incurred before termination. Neither party is liable for indirect, consequential, punitive or other special damages not based on direct economic losses.
- (c) In December 2014, YPL entered into an Offtake Agreement with a South American fertilizer distribution business for a period of seven years from first production with an option to extend the term by a further three years. The customer has committed to purchase 0.3 mtpa of POLY4 from a point in time when the mine is consistently producing 6.5 mtpa, with volumes of product to be purchased from first production until such time on a prorated basis. The customer has the option to increase the volume commitment to 0.45 mtpa. The customer has the non-exclusive right to resell and distribute the Company's product only in certain South American markets for the duration of the agreement. The delivery method under the agreement is free on board. Pricing is based on benchmark prices of certain underlying nutrients which POLY4 contains, calculated using a mutually agreed formula which includes as variables quoted prices for competing fertilizer products and certain mutually agreed assumptions regarding the respective percentages of relevant chemical elements in those products and the volumes under this agreement are subject to a floor price mechanism which guarantees a minimum sales price for YPL in the event the price calculation drops below the floor price. The agreement provides for a steering committee to be established for both parties to work together to implement a marketing plan for sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. The agreement includes an event review mechanism by which any failed Project milestones may be addressed via good faith negotiation between the parties. Termination is available on insolvency of either party and a material breach of more than 30 business days' duration. Neither party is liable for indirect, consequential, punitive or other special damages.
- (d) In December 2015, the Company signed an Offtake Agreement with Huaken, a Chinese company, for use of POLY4 as a soil conditioner. The agreement is for a period of seven years from first production, and the volume commitment increases up to 0.5 million tonnes of POLY4 in coarse form in the seventh year after first commercial production begins with the volume commitments to increase over the initial six years. Huaken has the exclusive right to resell and distribute the Company's product throughout China, other than in the province of Yunnan and Sichuan, for the purposes of use only as a soil conditioner for the duration of the agreement. The delivery method under the agreement is cost, insurance and freight (CIF). Pricing is based on an individualised formula incorporating benchmark prices of competing products and assumptions (subject to inflation) as to the costs of certain underlying nutrients which POLY4 contains. The agreement provides for a steering committee to be established for both parties to work together to implement a marketing plan for sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. Termination rights are available for a force majeure event of more than 180 days duration, with YPL's liability capped at the amount paid for any product not supplied. Termination is also available on insolvency of either party and a material breach of more than

20 business days' duration. Huaken has the right to terminate with notice if YPL is not able to commence production on the date agreed, however this right is subject to an initial review, involving mutual discussion between the parties and good faith negotiations to extend the date agreed. In such case neither party has liability to the other. Neither party is liable for indirect, consequential, punitive or other special damages.

- (e) In May 2016, YPL entered into an Offtake Agreement with Dian Huang, which replaced the Offtake Agreement with Yunnan TCT that had been entered into in June 2013. The Dian Huang agreement is for a period of ten years from first production, with a volume commitment of 1 mtpa from the commencement of the sixth year after first commercial production begins, with the volume commitment to increase over the initial five years. Dian Huang has the exclusive right to resell and distribute the Company's product in the province of Yunnan and Sichuan in China for the duration of the agreement. The delivery method under the agreement is CIF. Pricing is based on an individualised formula incorporating benchmark prices of competing products and assumptions (subject to inflation) as to the costs of certain underlying nutrients which POLY4 contains, as well as certain other costs. This is termed the "Base Price". If Dian Huang can reasonably demonstrate that they can obtain the same volume and quality of polyhalite (over a full year period under a similar arm's length agreement) from another supplier at a lower price, then a price differential will be agreed in good faith between the parties and YPL will offset the Base Price by the agreed differential over the subsequent 12 month period. If the parties cannot agree to a price differential, the matter can be referred to arbitration. The agreement provides for a steering committee to be established for both parties to work together to implement a marketing plan for sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. Termination rights are available for a force majeure event of more than 180 days duration, with YPL's liability capped at the amount paid for any product not supplied. Termination is also available on insolvency of either party and a material breach of more than 20 business days' duration. Neither party is liable for indirect, consequential, punitive or other special damages. Furthermore, if YPL believes six months before the initial production date, that such date will be delayed, the parties will agree in good faith to amend the agreement. If such good faith changes cannot be made, either party has the right to cancel the agreement, without penalty or liability.
- (f) In addition to the Offtake Agreements relating to fertilizer distribution, YPL has signed an Offtake Agreement with an animal feed distributor solely in connection with the exclusive distribution of POLY4 as animal feed nutrition in the United States. The tenure is for a period of seven years from first production, with an option to extend the term by a further three years. The volume YPL agrees to supply ramps up to 50,000 tonnes per annum in the third year after first commercial production begins. The customer has an option to increase the volume by another 25,000 tonnes per annum. YPL and the counterparty have agreed to carry out research and testing in relation to the use of and the potential size of the market opportunity for polyhalite in animal food nutrition, as part of the terms of the agreement. The delivery method under the agreement is free on board and pricing is fixed at an agreed exact price. Termination rights are available for a force majeure event of more than 180 days duration, with YPL's liability capped at the amount paid for any product not supplied. Termination is also available on insolvency of either party and a material breach of more than 30 business days' duration. The customer can terminate if certain Project milestones are more than six months behind schedule, or if, after testing, POLY4 proves not to be suitable for animal feed, on written notice to YPL, however this right is subject to an initial review process, involving mutual discussion between the parties and good faith negotiations to resolve any concerns regarding the review event, including but not limited to agreement amendments or the establishment of further milestones. Neither party is liable for indirect, consequential, punitive or other special damages.

#### *6.4.4 Joint Venture Opportunities*

In July 2014, the Company announced an MoU with the Ministry of Agriculture, Food Security and Cooperatives of the United Republic of Tanzania in which the parties agreed to collaborate around research on polyhalite and to support its introduction into Tanzania, which has historically experienced low fertilizer use. The Company has since had POLY4 and certain blended fertilizers which were part of the agronomic programme registered for use and sale in Tanzania with the Tanzania Fertilizer Regulatory Authority.

In September 2014, an MoU was also signed between the Company and the state-owned fertilizer distribution business, Tanzania Fertilizer Company (TFC). The MoU provides for the Company and TFC to collaborate and look into joint venture opportunities for a fertilizer blending and distribution business, including the negotiation of an Offtake Agreement to supply up to 0.5 mtpa of polyhalite, initially to TFC and subsequently to any joint venture to be created. The Company will continue to seek and consider other similar opportunities to create blending and downstream distribution opportunities for POLY4 and POLY4-based blended fertilizers.

In March 2017 the Company signed a Strategic Cooperation Framework Agreement (SCFA) with ZhongNongFa Seed Industry Group Co Ltd which is the listed parent company of Huaken, one of the Company's existing offtake customers. The SCFA includes a non-binding intent on both parties to take steps and provide resources to explore potential opportunities for the development of a joint venture to produce blended NPK fertilizer products and distribute such products within China.

#### 6.4.5 Agents and Representatives

The Company currently engages consultants, agents and representatives as appropriate and required to provide necessary local expertise and resources in certain markets in which the Company is looking to establish a presence, including in relation to local market dynamics and local policies and government regulations. Each such agent or representative is bound by Company policies and is appointed only after the Company conducts satisfactory due diligence.

## 7. DEVELOPMENT ASSETS AND PLANS

Once developed, the Project is expected to represent the first large-scale polyhalite mine in the world, with total Indicated and Inferred Mineral Resources estimated by SRK of approximately 2.66 billion metric tonnes from only 7 per cent. of the Project area of interest. The Company is initially targeting production capacity of 10 mtpa from the Project by mid-2024, at which point it is planned to be capable of producing up to 9.5 mtpa of granulated POLY4 product at steady state, with the balance as coarse POLY4 product. The Company intends to implement the Project so that production capacity is phased to rapidly increase to 13 mtpa under existing planning permissions and by incremental addition of mining, granulation and harbour capacities, then eventually up to production capacity of 20 mtpa, subject to receipt of additional planning permissions and the completion of additional infrastructure. First production from the mine is expected to be achieved by the end of 2021.

The following table sets out the estimated Mineral Resources of the Project as at March 2016 as estimated by SRK. The estimated Mineral Resources presented are reported in accordance with the JORC Code. According to SRK, the Project has been explored and sampled using appropriate methodologies and at sufficient spacing to support the estimation of Indicated and Inferred Mineral Resources in accordance with the JORC Code.

### 7.1 Mineral Resources Statement

Seam	Category	Mean Thickness (metres)	Tonnage (Mt)	Density	Mean polyhalite grade (%)	Polyhalite content (Mt)
Shelf	Indicated	27	820	2.75	87.3	710
Shelf	Inferred	11	840	2.75	85.7	720
Basin	Inferred	26	1,000	2.75	84.7	850
<b>Total Resource</b>			<b>2,660</b>	<b>2.75</b>	<b>85.7</b>	<b>2,280</b>

The following table sets out the estimated Ore Reserves of the Project as at March 2016 and as estimated by SRK.

## 7.2 Ore Reserves Statement

Seam	Category	Mean Thickness (metres)	Tonnage (Mt)	Density	Mean polyhalite grade (%)	Polyhalite content (Mt)
Shelf	Probable	25	280.2	2.75	88.4	247.7
	<b>Total Reserves</b>	<b>25</b>	<b>280.2</b>	<b>2.75</b>	<b>88.4</b>	<b>247.7</b>

According to SRK, the Project has JORC compliant Probable Ore Reserves of 280.2 million tonnes of ore with a mean polyhalite grade of 88.4 per cent., within an area representing just 1 per cent. of the Project area of interest. The Probable Ore Reserves sit within a wider resource area of an estimated total Mineral Resource of 2,660 million tonnes of polyhalite at a mean grade of 85.7 per cent. within an area representing just 7 per cent. of the Project area of interest. The reported Ore Reserves are a sub-set of the Indicated Mineral Resource and not additive to this. The Probable Ore Reserves have a mean thickness of 25 metres and areas within the deposit are up to 70 metres thick. The Company believes that this level of thickness and consistency will permit high efficiency bulk mining methods to be adopted. The Company expects to complete further resource definition from underground once mining operations commence.

According to SRK, no Inferred Mineral Resources have been converted to Ore Reserves and the Mineral Resources Statement includes those Indicated Mineral Resources used to generate the Ore Reserves. The large difference between SRK's Mineral Resource statement and its Ore Reserve statement is partly a function of the relatively low mining recovery inherent in the mining method employed and partly a function of the fact that SRK has limited the Ore Reserve statement to the Indicated Mineral Resource and therefore the shelf seam only.

SRK believes that there is a good likelihood that a proportion of the currently reported Inferred Mineral Resources will be upgraded to Indicated Mineral Resources and Ore Reserves status once the mine has been established and the polyhalite accessed, and that additional Mineral Resources and Ore Reserves will be generated following ongoing exploration and assessment during the mine life.

For more information on the estimated Mineral Resources and Ore Reserves, see Part 14 ("*Competent Person's Report*") of this Prospectus.

## 8. MINERAL EXTRACTION AND MINING OPERATIONS

### 8.1 The North Yorkshire Polyhalite Project

The Project and the permits and approvals in connection with the Project encompass an on-shore and off-shore area of 775 square kilometres (250 square kilometres on-shore and 525 square kilometres off-shore) extending from slightly north of Whitby, North Yorkshire, United Kingdom, in-land approximately 16.5 kilometres across the NYMNP, south along the coast to the seaside town of Scarborough and then eastwards up to 14 kilometres under the North Sea. It is part of the pre-historic Zechstein Sea evaporate basin which extends underground from the UK eastwards across the North Sea to Lithuania. The Project's polyhalite mineral deposit occurs within the Zechstein Group in the North Sea Basin and consists predominantly of two seams of polyhalite, which are called the shelf seam and the basin seam. The polyhalite seams that are the focus of the Project are located approximately 1,500 metres below surface level and have a mean thickness of 25 metres. The region is home to the Boulby mine, operated by a subsidiary of Israel Chemicals Ltd., which has been producing potash since 1973 from its sylvinite seams. The Boulby mine also has significant halite deposits that have been mined for production of de-icing road salt and some polyhalite that has been extracted since 2009.

The Project is accessible via existing roads, which run through and around the NYMNP. The nearest airports to the Project area are Newcastle, Durham Tees Valley and Leeds Bradford. Leeds is the largest city within Yorkshire and is located approximately 120 kilometres from the Project area. The harbour is located at Teesside and existing bulk wharves are located on the River Tees.

The below diagram shows the Project's resource area, general area of interest and proposed mine site, MTS and harbour facility locations.



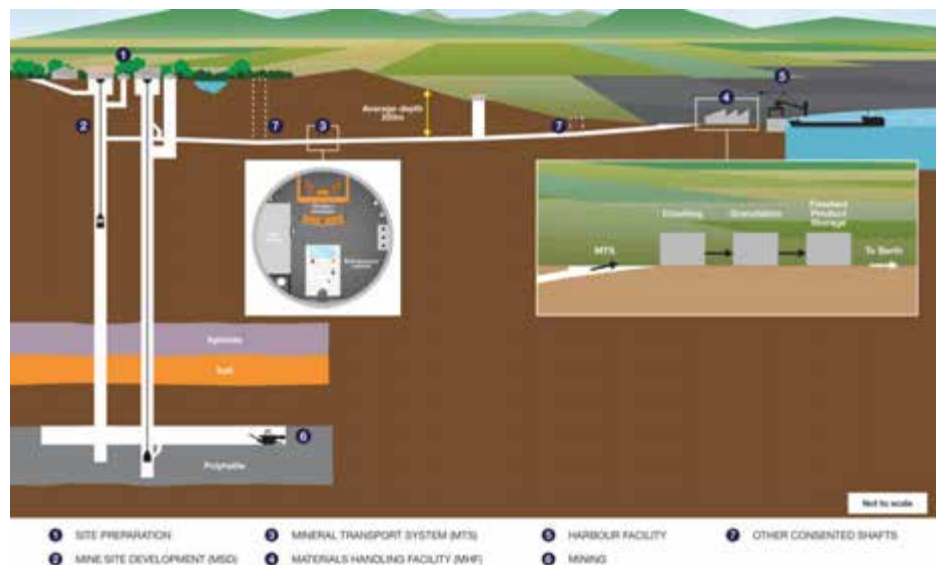
The Project will involve work in the area of the NYMNP. Unlike in many other countries, national parks in England and Wales usually are not owned and managed by the government as a protected community resource. As a result, land within a national park remains largely in private ownership (albeit subject to additional protections due to the special nature of national parks) and national parks in England and Wales usually include permanent human communities. Land designated as a national park may include substantial settlements and human land uses which are often integral parts of the landscape. The NYMNP is overseen by the NYMNPA, which is a twenty-member legal entity funded by the UK Government which governs the NYMNP akin to a local council planning authority, with very strong direct control over development and the design of buildings and other structures in the NYMNP as well as strategic matters such as mineral extraction. As a result, the Company's approvals and licencing with the NYMNPA and other bodies, and its relationships with local residents and other stakeholders, are a key component of its ability to execute the Project. See paragraph 9 ("*Leases, Licences and Permitting*") of this Part 7.

YPL, the private company through which the on-shore and off-shore mineral rights (as well as the land interests) for the Project are held or will be held following exercise or conversion of various option agreements, was acquired by the Company in January 2011. YPL's rights relate to all evaporites in the Project area including polyhalite, sylvinite, halite and intermingled minerals. Most agreements are for a term of 70 years. For more information see paragraph 11.1 ("*Mineral Rights Agreements*") of Part 12 ("*Additional Information*") of this Prospectus. Following on from exploration activities undertaken by various other parties over many years, exploratory drilling by the Company began in July 2011 and concluded two years later, confirming the presence of a high grade polyhalite ore deposit. The Company has since completed a pre-feasibility study (in December 2012) and the DFS (in March 2016). The Project is projected to be multi-generational, with an estimated mine life defined by the DFS in excess of 50 years.

Once developed and operational, the mine, MTS, MHF and harbour facilities are expected to operate 24 hours a day, seven days a week, including the time for maintenance work.

## 8.2 Infrastructure

The Project will consist of the following facilities and processes, as shown in the figure below: (1) site preparation at the Woodsmith mine (formerly known as Dove's Nest Farm); (2) mine site development, including shafts; (3) the MTS; (4) the MHF; (5) harbour facilities; (6) mining; and (7) other consented shafts along the MTS (Lady Cross and Tockett's Lythe).



The schedule for the Initial Construction Phase can be broken down into four key stages: (i) site preparation and pre-sink activities; (ii) main shaft sinking activity and tunnelling; (iii) construction and development of the MHF and harbour facilities; and (iv) first production, shaft bottom fit-out and ramp-up of production, initially to 10 mtpa. The design of the facilities enables production capacity to reach 13 mtpa by incremental addition of mining, granulation and harbour capacities. A further increase in production capacity to 20 mtpa would be achieved during the Expansion Phase by the extension of the existing ventilation shaft and the expansion of mining, hoisting, MHF and harbour facilities, which would require additional planning permissions.

The Project will adopt conventional bulk mining methods (a combination of continuous mining machines and drill and blast methods) to enable efficient extraction at relatively low cost. Two deep shafts, the production shaft (reaching a depth of 1,594 metres) and the service shaft (reaching a depth of 1,565 metres), will access the polyhalite shelf seam in the centre of a thick and high grade area of the reserve. All mining will take place within the polyhalite horizon, with the product then hoisted to approximately 360 metres below surface level where it will be transported to the MHF for processing via the MTS. Finished products will be transported approximately 3.5 kilometres from the MHF on a covered conveyor system to the riverside and new quay harbour facilities, which will be built at the northern end of the Project's Bran Sands river frontage.

### 8.2.1 Polyhalite Mine

The mine development schedule comprises four main phases during the Initial Construction Phase: (i) shaft sinking; (ii) constructing the shaft bottom (allowing the installation of mine services such as workshops, stores, machine assembly areas and maintenance and welfare facilities); (iii) developing roadway access and ramping up production; and (iv) production mining. Initially, as development continues, the ore extraction rate will be constrained by the capacity of the construction contractor's temporary hoisting equipment. Upon completion of the production shaft fit out, the hoisting constraint will be removed and the mine will commence ramping up to production capacity of 10 mtpa.

The proposed location for the above-ground mining facilities is within a private farm and forestry block called the Woodsmith mine. The land is owned by the Company and sits approximately 3.5 kilometres southwest of Whitby. The site is isolated from settlement, and mine buildings will be hidden from public view by strategically placed landscaping, with most of the mining infrastructure being located underground. The few buildings above ground will be shielded by forestry and agricultural-style architecture and, in addition to the mine head, will encompass staff welfare areas, a control room and mine rescue facilities, workshops and security.

Ore will be excavated using continuous mining machines feeding onto a haulage system and discharging to a feeder breaker, which will size the mineral to a nominal maximum size of 150 millimetres, before it is placed on to the conveyor system. This conveyor system will transport the mineral to the shaft bottom area, where it will be transferred into underground storage bunkers prior to skip loading at the shaft. In thicker areas of the seam the operation of the continuous mining machines will be supplemented by drill and blast methods, with blasted material loaded by remote controlled electric load haul dump machines onto the feeder breaker. The mined material will be hoisted from the mine level to a tipping point at 360 metres below surface, where the material will be loaded onto the conveyor in the MTS tunnel and transported to the MHF. The Project will have 13.4 mtpa installed hoisting capacity. There will be buffer storage at the 360-metre level for up to 15,000 tonnes of mineral.

Production is expected to reach 10 mtpa by the end of the Initial Construction Phase, using four continuous mining machines and one drill and blast panel.

Production capacity has the potential to reach 13 mtpa through the addition of more continuous mining machines and associated trunk and panel conveyors by mid-2024. The additional expenditures for this increase in capacity, which would occur after the Capital Funding Period, are expected to be funded by operating cash flow. See paragraph 8.3.5 (“*Financing Plans*”) of this Part 7.

The increase in production capacity from 13 mtpa to 20 mtpa will require additional planning permissions, mining equipment and a second production shaft, to be created by extending the existing tunnel boring machine shaft at the mine site and fitting it out with a third Blair multi-rope hoist and associated loading and unloading facilities. Ventilation systems would also be expanded using the additional shaft for the delivery of air underground.

#### 8.2.2 Mineral Transport System

The MTS will carry the mined polyhalite from 360 metres underground at the mine site to the MHF at Wilton International on a high capacity conveyor system in a 37 kilometre underground tunnel that will be 4.3 metres in diameter. An intermediate shaft will be located at Lockwood Beck to facilitate construction. Two additional intermediate shaft sites have been identified at Lady Cross Plantation and Tockett’s Lythe for possible future ventilation requirements.

The 37 kilometre underground tunnel will be constructed by three tunnel boring machines. The following figure shows the route of the MTS and three tunnel boring machine drives.



The first conveyor from the mine site to Lockwood Beck will be approximately 24 kilometres long and the second conveyor from Lockwood Beck to Wilton will be approximately 13 kilometres long. The conveyors in the MTS will be designed to handle 20 mtpa of throughput from the outset, and no upgrading is expected to be necessary to increase production capacity to 13 mtpa or to 20 mtpa (pending the receipt of planning permissions). The tunnel will also contain maintenance rail and services, including a 66kV power feeder from Wilton International.



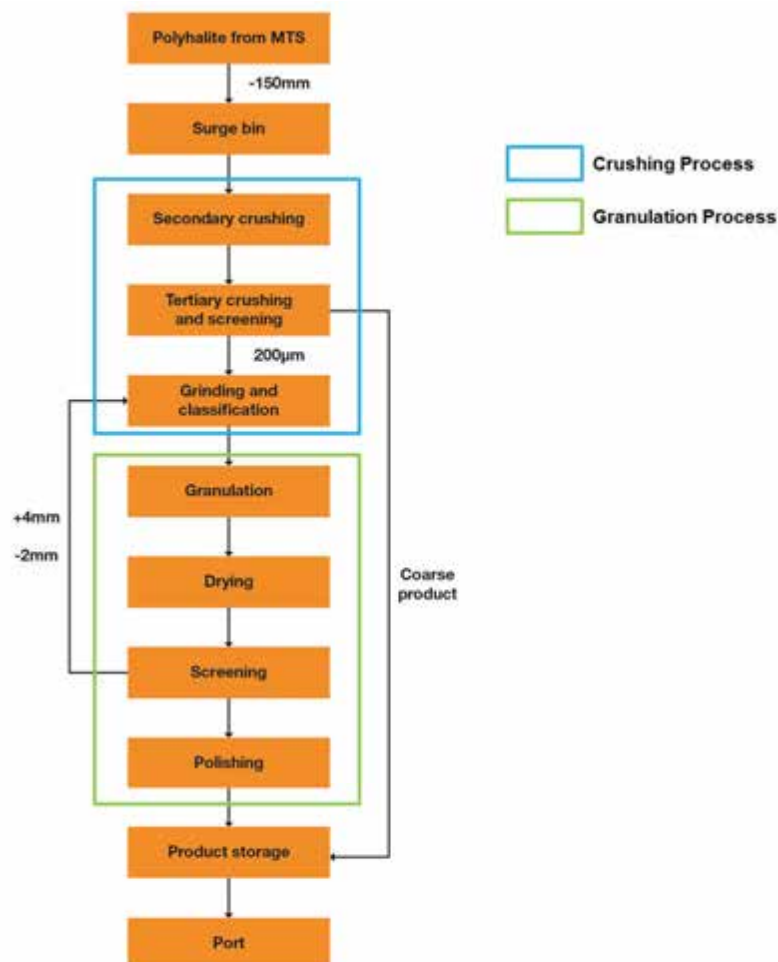
### 8.2.3 Materials Handling Facility

The MHF will consist of the plant and equipment necessary for a simple and cost-effective granulation process for producing bulk volumes of POLY4. It will be located at the existing Wilton International multi-occupancy chemical manufacturing centre in Redcar, Teesside, thus avoiding the need for additional development (such as expansion of the power grid) in the NYMNP. Wilton International is operated and managed by Sembcorp, a Singaporean utility company. The MHF will be located on land for which the Company or its subsidiaries has an option to acquire the freehold and which the Company expects to acquire prior to constructing the MHF.

Crushed ore will be discharged from the MTS conveyor to a large surge bin at the Wilton site and transferred to the MHF on standard conveyors. The MHF will consist of five basic processes:

- **Crushing:** the mineral, initially crushed underground, will be further crushed and taken by conveyor to a screening unit.
- **Screening:** oversized ore (coarse product) will be screened out and directed to the storage building. Remaining crushed ore will be conveyed to the grinding and classification facility.
- **Grinding and classification:** crushed and screened ore will be further reduced in size in the grinding circuit and the classification circuit will produce polyhalite powder for granulation.
- **Granulating:** ground polyhalite will be mixed with starch binder, formed into granules, dried and screened for size. Undersized and oversized granules will be recirculated back to the grinding circuit for re-processing. The granules will be coated with wax for protection and conveyed to the storage facility.
- **Storage:** coarse and granulated product (POLY4) will be conveyed to a storage building large enough to hold approximately 0.3 million metric tonnes (by the end of the Initial Construction Phase) of production.

The following figure shows the processes of the MHF.





The Company anticipates that the MHF will initially be capable of producing 10 mtpa but that production capacity of the MHF will be able to be increased to 13 mtpa by mid-2024 by incremental addition of granulation and harbour capacities, in line with planned mining escalation. The increase in production capacity to 20 mtpa is expected to require additional crushing and granulation facilities and planning permissions, as well as extending the existing plant, including the construction of a second product storage shed.

#### *8.2.4 Harbour Facilities*

The Project benefits from the mine being located in close proximity to an existing harbour and the Bran Sands development is well located for handling the bulk export of POLY4. Finished products will be transported approximately 3.5 kilometres from the MHF on a covered conveyor system to the riverside and new quay harbour facilities, which will be built at the northern end of the Project's Bran Sands river frontage. It is currently anticipated that the construction and operation of the Project's harbour facilities will be outsourced to a specialist operator.

The quay will be 294 metres long and is planned to be suitable for handling Panamax ships up to a capacity of 85,000 deadweight tonnes. The quay is planned to consist of a reinforced concrete deck structure supported by raked steel tubular piles. The ship loader will be a long-travel, wide-span machine with a telescopic luffing boom with a design ship loading rate of approximately 5,000 tonnes per hour.

The construction work on the harbour facilities, enabling transport of up to 10 mtpa of production, are expected to be completed by mid-2022, and it is expected that by that time erection and testing of the ship loader will have been completed.

The increase in production capacity to 13 mtpa and further to 20 mtpa will require the installation of a second berth and second ship loader, respectively.

#### *8.2.5 Other Infrastructure*

Other infrastructure required for the Project will include:

- Power supply: A 66kV connection will be installed to supply power from Wilton International to the mine through the MTS tunnel. Two 11kV connections will also be installed to supply the MHF and the harbour.
- Control systems: Control, communication, CCTV and security systems will be integrated Project-wide utilising a fibre optic cable within the tunnel to connect the mine with the MHF and harbour.
- Water systems: Surface water drainage systems have been designed for both construction and operations to include filter drains, catch pits, oil interceptors and attenuation ponds to control discharge to local wetlands and watercourses.
- Infrastructure relating to soils handling: Excavated materials generated as a result of the shaft sinking and tunnelling will be placed at the Woodsmith mine (formerly known as Dove's Nest Farm), Lockwood Beck and Wilton locations. Completion of construction works will include landscaping of the Woodsmith mine and Lockwood Beck locations for a combination of agricultural use, grassland and woodland.

#### *8.2.6 Construction Management*

##### *(a) Site preparation, mine site development and MTS*

The Company has completed a tender process for the three main construction work packages: site preparation, mine site development and MTS.

Preliminary site preparation works have already been undertaken in the form of highway works at a key junction in Whitby followed by further highway works in various locations in and around Whitby, which commenced in January 2017. These works are required to comply with the Company's planning conditions.

With regard to the mine site development and MTS, between June 2015 and November 2015 the Company undertook early engagement with two tenderers for each work package and entered into consultancy agreements based on International Federation of Consulting Engineers (**FIDIC**) White Book terms and conditions. During this early engagement the Company and its external legal advisers conducted a heads of terms exercise in relation to the required risk profile and key expected issues to be discussed when concluding the eventual design and build contracts, which were anticipated to be based on FIDIC Silver Book terms and conditions with substantial amendments to reflect Project

specifics. The tenderers reverted with a heads of terms document against the Company's baseline position and their tenders were scored as part of a legal evaluation exercise. Commercial and technical due diligence was undertaken against the tenders received and the analysis was combined with the legal evaluation scores to inform the decision as to the preferred contractor for each of the work packages.

On 2 June 2016, the Company announced Associated Mining Construction (UK) (a joint venture among (i) Deilmann-Haniel GmbH, (ii) J.S. Redpath Limited, (iii) Thyssen Schachtbau GmbH and (iv) Thyssen Mining Construction of Canada Ltd) and Hochtief Murphy Joint Venture (a joint venture between Hochtief (UK) Construction Limited and J. Murphy & Sons Limited) have been selected as its preferred contractors for the mine site and MTS, respectively.

In December 2016 services commenced under an early contractor involvement contract (**ECI Contract**) with the mine site development contractor, AMC. The Company anticipates that it will enter into another ECI Contract with the MTS preferred contractors in the second quarter of 2017 to allow them, together with the mine site development contractor, to undertake further detailed design, initial works and procurement activities prior to the award of the full design and build contracts.

During the period that the ECI Contracts are in place, the Company will negotiate and build the technical detail required for the full design and build construction contracts based on the heads of terms exercise undertaken as part of the bidding process and the output of the detailed design undertaken during the ECI Contract period.

The intention of the Company is for the mine site development and MTS contractors to be subject to interface obligations as part of the full design and build construction contracts, which are signed on the basis that there will be some interface for design during construction. Other work packages that are expected to be tendered in due course include: supplementary geotechnical investigation, construction of working area platforms and support services necessary for the effective functioning of a major construction site. The Company plans to manage the Project utilising a team of mining and infrastructure professionals, supplemented where necessary with specialist expertise. The Company intends to establish Project management systems in the first few months of the ECI Contract phase for the mine site development, which systems will be operational once construction commences.

#### (b) MHF and Harbour Facilities

It is currently anticipated that the MHF will be developed under a contract with a design and build scope and that the harbour facilities will be developed under a third party infrastructure commercial contract. The Company is currently seeking partners for these scopes of work.

### 8.3 *Project Economics*

The Company has included in this paragraph 8.3 information related to anticipated capital requirements, operating costs, production volume, mine life, inflation rates, available financing and other factors at various stages of development including initial ramp-up at the beginning of production through the gradual escalation of production to the eventual production target of 20 mtpa. The likelihood of achieving the Company's anticipated capital requirements, operating costs, production volume, mine life, inflation rates, available financing and estimated capital costs in future periods cannot be ascertained with certainty and no reliance should be placed on these estimates as being indicative of future results or of the returns which investors should expect. See paragraph 3.2 (*"Estimates and Certain Non-Financial Metrics"*) of Part 5 (*"Presentation of Information"*) of this Prospectus.

For the period from the Construction Commencement Date to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after the Construction Commencement Date, the Project has a total Capital Funding Requirement that is currently estimated to be US\$2.9 billion. This estimate is based on the DFS and subsequent detailed work with the Company's preferred contractors. After the Capital Funding Period, the remainder of the capital required during the Initial Construction Phase, which is currently estimated to be US\$0.2 billion to reach production capacity of 10 mtpa, is expected to be funded with operating cash flow from revenues earned from production. Further capital costs for expansion of the Project to 20 mtpa are currently estimated to be US\$1.5 billion, which is expected to be funded with operating cash flow from revenues earned from production.

The Company believes the capital investment during the Capital Funding Period of US\$2.9 billion will fund the installation of long-life infrastructure with the capacity to produce bulk volumes of polyhalite at operating costs amongst the lowest in the industry. This initial US\$2.9 billion

investment, plus the additional investment expected to be funded with operating cash flow from revenues earned from production (estimated as US\$0.2 billion that will be required to reach production capacity of 10 mtpa and a further US\$1.5 billion expected to be required post-Capital Funding Period, to achieve production capacity of 20 mtpa) results in an estimated Project NPV of US\$15.4 billion and IRR of 28 per cent. at production of 20 mtpa, based on the assumptions presented in paragraph 8.3.4 (“*Project Financial Analysis Assumptions*”) of this Part 7.

In addition, for illustrative purposes only, the table below summarises Project EBITDA at certain assumed polyhalite production volumes and price points. As presented below, “High Margin” represents a 85 per cent. gross margin and corresponds to a constant price of US\$200 per tonne and “Low Margin” represents a 70 per cent. gross margin and corresponds to constant price of US\$100 per tonne. In each case, operating costs per tonne are assumed to be US\$30 per tonne, representing the average life of mine operating costs per tonne at an assumed consistent production rate of 10 mtpa and 20 mtpa. The numbers in the table are presented on a real (actual) 2016 basis and therefore do not include the impact of inflation.

	<b>Project EBITDA (illustrative)</b>	
	<b>“Low Margin”</b>	<b>“High Margin”</b>
	<b>(US\$ billions)</b>	
10 mtpa production volume .....	0.6	1.6
20 mtpa production volume .....	1.4	3.3

#### 8.3.1 Capital Requirements

On the basis of the DFS and subsequent detailed work with the Company’s preferred contractors, the Company has calculated the capital requirements and consequent development schedule for the Project. The Company assumes that the following capital items will be outsourced to third parties during the Capital Funding Period and therefore has not provided for them in its estimate of its capital requirements during the Capital Funding Period:

- All mobile mining equipment items are assumed to be leased, under arrangements similar to sale and leaseback equipment leases (accounting for an estimated US\$125 million total capital outsourced to third parties;
- All harbour-related infrastructure is assumed to be constructed under a build-own-operate arrangement, under terms which provide for a long term concession arrangement with an operator who will develop the infrastructure and charge a toll rate per tonne of throughput (accounting for an estimated US\$491 million total capital outsourced to third parties; and
- An aggregate operating charge of US\$7.2 per tonne has been included in the operating cost estimates at production of 10 mtpa (US\$4.9 per tonne at 20 mtpa) to account for the cost of outsourced mining equipment and harbour infrastructure.

On the basis of the above, the following table outlines the Capital Funding Requirement by major category covering the period to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after the Construction Commencement Date. See also paragraph 8.3.5 (“*Financing Plans*”) of this Part 7.

Category	Total Capital Funding Requirement
	(US\$ millions)
Mine .....	977
MTS.....	857
MHF and harbour .....	229
Other infrastructure and facilities .....	82
Owner costs <sup>(1)</sup> .....	280
Contingency <sup>(2)</sup> .....	445
Working capital and other <sup>(3)</sup> .....	31
<b>Total – Capital Funding Requirement .....</b>	<b>2,902</b>

**Notes:**

- (1) Owner costs include project overheads, payments for land access and mineral rights, geotechnical site investigation costs, operational readiness costs (which includes activities required to prepare the mine to be operational), project insurances and costs relating to permitting.
- (2) Contingency represents a provision to cover uncertainties associated with the Project capital costs as defined by the DFS. It does not include allowance for scope changes or catastrophic events. It includes, but is not limited to, a provision for escalation of capital costs in the Capital Funding Period, estimated errors and omissions, design development, pricing variations, delays for equipment and material deliveries, contractor claims and variation in labour productivity and related indirect costs. The impact of any foreign currency variation and financing costs are excluded from the contingency analysis.
- (3) Working capital and other is presented on a net basis, representing outflows relating to expenditure and funding of security arrangements relating to S106 agreements (security arrangements associated with agreements pursuant to section 106 of the Town and Country Planning Act 1990 entered into between the Company and the planning permission authorities), net of expected inflows from operating cash flow as initial production comes online.

In the CPR, SRK presents total capital costs of US\$3.5 billion to reach production capacity of 10 mtpa. The following table shows a reconciliation of the total capital costs presented by SRK in the CPR, which reflect the Company’s capital cost estimates but are presented on a different basis and therefore exclude certain items, to the Company’s estimate of the Capital Funding Requirement.

Category	Total Capital Funding Requirement
	(US\$ millions)
Total capital costs according to the CPR .....	3,546
Less: Outsourced capital <sup>(1)</sup> .....	(595)
Add: Escalation <sup>(2)</sup> .....	127
Less: Capital costs funded by operating cash flow <sup>(3)</sup> .....	(207)
Add: Working capital and other <sup>(4)</sup> .....	31
<b>Total – Capital Funding Requirement .....</b>	<b>2,902</b>

**Notes:**

- (1) Reflects items which the Company expects to be outsourced to third party providers of capital.
- (2) All prices and costs provided in SRK’s analysis are presented in real (actual) 2016 terms, without any inflation adjustments. This escalation amount therefore represents the Company’s estimate of annual inflation of 2 per cent. on prices and costs with initial construction capital cost escalation as per the DFS estimates for the initial 10 mtpa level of production.
- (3) Reflects capital costs incurred after the Capital Funding Period and until completion of all construction activities relating to reaching production capacity of 10 mtpa, which are expected to be funded by operating cash flow from revenues earned from production.
- (4) Reflects outflows incurred during the Capital Funding Period relating to expenditure relating to section 106 security arrangements, net of inflows from operating cash flow as initial production comes online.

The following table shows the Company's expected capital requirements after the end of the Capital Funding Period, which is currently expected to end six years after the Construction Commencement Date, until the end of the Expansion Phase, which is currently expected to end ten years after the Construction Commencement Date, when it is expected that the Company will achieve production capacity of 20 mtpa. These capital requirements are expected to be funded from operating cash flow.

<b>Capital requirements post-Capital Funding Period (funded from operating cash flow)</b>	<b>(US\$ millions)<sup>(1)</sup></b>
Capital costs funded by operating cash flow during ramp-up to production capacity of 10 mtpa .....	207
Incremental capital from 10 mtpa to 13 mtpa .....	328
Incremental capital from 13 mtpa to 20 mtpa .....	1,157
<b>Total – Post Capital Funding Period .....</b>	<b>1,692</b>

**Note:**

(1) Values in this table are presented on a real (actual) 2016 basis.

In addition to the above, sustaining capital costs over the life of the Project, assuming eventual expansion to production capacity of 20 mtpa, have been estimated on a real (actual) 2016 basis by the Company to be US\$1.3 billion from 2024, expected to vary between US\$5 million and US\$69 million per annum but averaging US\$26 million per annum over the life of the mine.

### 8.3.2 Operating Cost Estimates

According to the Company's estimates, and according to the assumptions as set out in paragraph 8.3.4 ("Project Financial Analysis Assumptions") of this Part 7, the Project's annual operating costs once production has commenced (which is expected to be achieved by the end of 2021) are estimated on a free on board basis to be US\$32.6 per tonne at production of 10 mtpa and US\$27.6 per tonne at production of 20 mtpa, calculated as an average over the life of mine at each indicated level on a real (actual) 2016 basis. This includes estimates of labour, raw material, reagent, operating supply, maintenance supply, utility, lease and other costs (including charges for the outsourced capital items described above). The following table provides a breakdown of the Project's estimated operating cost at the production capacities indicated.

<b>By area</b>	<b>10 mtpa</b>	<b>20 mtpa</b>
	<i>(US\$ per tonne, unless otherwise stated)</i>	
Mining <sup>(1)</sup> .....	11.1	8.7
Transportation .....	4.7	4.4
Processing .....	10.0	9.7
Storage and loading <sup>(2)</sup> .....	5.8	4.2
General infrastructure .....	1.0	0.5
<b>Total<sup>(3)</sup> .....</b>	<b>32.6</b>	<b>27.6</b>
Fixed cost percentage <sup>(4)</sup> .....	16%	9%
<b>By expense category</b>	<b>10 mtpa</b>	<b>20 mtpa</b>
	<i>(US\$ per tonne)</i>	
Labour .....	4.8	2.3
Raw materials and reagents .....	4.8	4.8
Maintenance .....	5.8	5.8
Utility costs (power, gas, water) .....	7.9	7.9
Lease costs (including harbour capital charges) .....	7.2	4.9
Other costs <sup>(5)</sup> .....	2.1	1.9
<b>Total<sup>(3)</sup> .....</b>	<b>32.6</b>	<b>27.6</b>

**Notes:**

- (1) Includes costs relating to mining equipment leasing.
- (2) Includes costs relating to outsourced harbour infrastructure.
- (3) Operating costs are estimated real life of mine average operating expenditure per tonne of production and exclude royalties and sustaining capital expenditure.
- (4) Fixed cost percentage includes estimated labour, fixed consumables and fixed overhead costs as a proportion of total operating cost. Labour costs include all costs relating to permanent operations staff and related expenditures. Fixed consumables costs include costs relating to accommodation, health and safety equipment, training, transportation, IT and utilities. Fixed overhead costs include costs relating to shared business services, accounting, legal and marketing.
- (5) Other costs includes consumables, fuels and lubricants, G&A, product realisation charges and allowances.

**8.3.3 Net Present Value and Internal Rate of Return**

The Company's estimates of the NPV of the Project and of the IRR in relation to the estimated NPV of the Project based on DFS estimates and as updated by the Company as a result of subsequent detailed work with the Company's preferred contractors, and calculated in accordance with the assumptions as set out in paragraph 8.3.4 ("*Project Financial Analysis Assumptions*") of this Part 7, are as follows: (i) NPV of US\$7.1 billion and IRR of 23 per cent. at production of 10 mtpa; and (ii) NPV of US\$15.4 billion and IRR of 28 per cent. at production of 20 mtpa.

**NPV (US\$ billions) sensitivity to capex and price at production of 10 mtpa**

<b>Capex sensitivity<sup>(1)</sup></b>	<b>Long-term POLY4 price sensitivity<sup>(2)</sup></b>				
	<b>-20%</b>	<b>-10%</b>	<b>Base</b>	<b>+10%</b>	<b>+20%</b>
-20%.....	5.3	6.4	7.5	8.7	9.8
-10%.....	5.1	6.2	7.3	8.4	9.6
Base .....	4.9	6.0	<b>7.1</b>	8.2	9.4
+10%.....	4.6	5.8	6.9	8.0	9.1
+20%.....	4.4	5.6	6.7	7.8	8.9

**NPV (US\$ billions) sensitivity to capex and price at production of 20 mtpa**

<b>Capex sensitivity<sup>(1)</sup></b>	<b>Long-term POLY4 price sensitivity<sup>(2)</sup></b>				
	<b>-20%</b>	<b>-10%</b>	<b>Base</b>	<b>+10%</b>	<b>+20%</b>
-20%.....	11.5	13.7	15.8	18.0	20.1
-10%.....	11.3	13.4	15.6	17.7	19.9
Base .....	11.1	13.2	<b>15.4</b>	17.5	19.7
+10%.....	10.9	13.0	15.2	17.3	19.5
+20%.....	10.6	12.8	14.9	17.1	19.2

**IRR (per cent.) sensitivity to capex and price at production of 10 mtpa**

<b>Capex sensitivity<sup>(1)</sup></b>	<b>Long-term POLY4 price sensitivity<sup>(2)</sup></b>				
	<b>-20%</b>	<b>-10%</b>	<b>Base</b>	<b>+10%</b>	<b>+20%</b>
-20%.....	22	24	26	27	29
-10%.....	21	23	24	26	27
Base .....	20	21	<b>23</b>	24	26
+10%.....	19	20	22	23	25
+20%.....	18	19	21	22	24

## IRR (per cent.) sensitivity to capex and price at production of 20 mtpa

Capex sensitivity <sup>(1)</sup>	Long-term POLY4 price sensitivity <sup>(2)</sup>				
	-20%	-10%	Base	+10%	+20%
-20%.....	27	29	31	32	34
-10%.....	26	27	29	31	32
Base .....	24	26	<b>28</b>	30	31
+10%.....	24	25	27	29	30
+20%.....	23	24	26	28	29

**Notes:**

- (1) Capex sensitivity reflects the impact of upward or downward adjustments to the Company's estimate of total capital costs incurred during the Initial Construction Phase of US\$3.1 billion, excluding outsourced capital.
- (2) POLY4 price sensitivity reflects the upward or downward adjustments to the assumed base prices, calculated as set out in paragraph 8.3.4 ("Project Financial Analysis Assumptions") of this Part 7.

The table below illustrates the Company's estimate of the indicated metrics across the range of production capacities indicated, and according to the assumptions as set out in paragraph 8.3.4 ("Project Financial Analysis Assumptions") of this Part 7.

	10 mtpa	Incremental to 13 mtpa	Incremental to 20 mtpa
Capital Funding Requirement (US\$ millions) .....	2,902 <sup>(1)</sup>	328	1,157
Capital Intensity (US\$ per tonne) <sup>(2)</sup> .....	290	109	165
NPV – Start of construction (US\$ billions) <sup>(3)</sup> .....	7.1	10.0	15.4
NPV – First production (US\$ billions) <sup>(4)</sup> .....	14.5	19.1	27.8
Project IRR .....	22.9%	25.6%	28.1%

**Notes:**

- (1) This figure is net of US\$207 million in capital costs which are expected to be funded by operating cash flow from revenues earned from production.
- (2) Capital intensity reflects estimated funding requirement per incremental tonne of production.
- (3) Represents estimated NPV as at 1 October 2016.
- (4) Represents estimated NPV as at 1 October 2021.

The assumptions used in calculating these figures, including the base figures against which the sensitivities are presented, are as presented in paragraph 8.3.4 ("Project Financial Analysis Assumptions") of this Part 7.

The table below summarises the Company's estimates of polyhalite production and NPV across a range of progress milestones for the Project and for assumed discount rates of 10 per cent. and 8 per cent., assuming an ultimate production capacity of 20 mtpa. The assumptions used in calculating these figures are as presented in paragraph 8.3.4 ("Project Financial Analysis Assumptions") of this Part 7, except that NPV values are also presented assuming a discount rate of 8 per cent. for comparison.

	Projected Production <sup>(1)</sup>	NPV <sup>(2)</sup> – 10%	NPV <sup>(2)</sup> – 8%
	(mtpa)	(US\$ billions)	
Commencement of construction (2016) .....	—	15.4	24.4
Utilisation of the Stage 2 Financing (2019) .....	—	21.1	31.3
First production (2021) .....	0	27.8	38.7
Initial production capacity during ramp-up to 10 mtpa (2022) .....	4	30.3	41.4
Production capacity increased to 13 mtpa (2024) .....	13	36.7	48.4
Production capacity increased to 20 mtpa (January 2027) .....	20	43.2	55.4

**Notes:**

- (1) Production is presented for the first full calendar year that follows the respective milestone dates, noted in the table above.
- (2) NPVs are estimated as at the respective milestone dates, noted in the table above.

The table below illustrates the Company's estimate of NPV and IRR across a range of prices which for the purposes of comparison are assumed to be constant on a real (actual) 2016 basis over the life of the Project. This demonstrates the robust economics of the Project through a range of potential price outcomes at 20 mtpa. The assumptions used in calculating these figures are as presented in paragraph 8.3.4 ("*Project Financial Analysis Assumptions*") of this Part 7, apart from polyhalite prices which are assumed to be constant on a real (actual) 2016 basis for the life of the Project.

	10 mtpa		20 mtpa	
	NPV – 10%	IRR	NPV – 10%	IRR
	(US\$ billions)	(%)	(US\$ billions)	(%)
Premium nutrient value (US\$277 per tonne) <sup>(1)</sup> .....	12.7	32	25.2	38
Nutrient value (US\$213 per tonne) <sup>(2)</sup> .....	8.8	27	18.0	33
Discount nutrient value (US\$145 per tonne) <sup>(3)</sup> .....	4.7	21	10.3	26
Downside price (US\$100 per tonne) <sup>(4)</sup> .....	1.9	15	5.2	19

**Notes:**

- (1) Represents 30 per cent. premium to nutrient value.
- (2) Represents the full nutrient value of polyhalite of US\$213 per tonne (as of August 2016) calculated as the sum of the parts value of the four nutrients in polyhalite.
- (3) Represents the approximate weighted average price of the Company's existing offtake agreements over the life of those agreements.
- (4) Represents a 53 per cent. discount to nutrient value.

In preparing the CPR, SRK has prepared its own economic valuation and sensitivity analysis of NPV for the Project. The assumptions used in calculating SRK's estimates are the same as those presented in paragraph 8.3.4 ("*Project Financial Analysis Assumptions*") of this Part 7, except that the SRK evaluation (i) assumes that construction commences on 1 April 2016, whereas the Company's estimates presented above assume that construction commences on 1 October 2016; (ii) focuses on the initial development to production of 10 mtpa only, whereas the Company's estimates presented above also take into consideration the incremental expansion to production capacities of 13 mtpa and ultimately 20 mtpa; and (iii) is prepared in real (actual) 2016 terms on an annual basis, whereas the Company's estimates are in nominal terms on a quarterly basis and reflect an assumption of price and cost inflation of 2 per cent. per annum over the life of mine. In addition, for the base figures, the SRK NPV evaluation is prepared based on a discount rate of 8 per cent. in real (actual) 2016 terms, whereas the Company's NPV evaluations are prepared based on a discount rate of 10 per cent. in nominal terms. SRK's estimates of the Project NPV and IRR, at US\$6.8 billion and 20.3 per cent., respectively, both at production capacities of 10 mtpa, are therefore different from the Company's.

In the CPR, SRK presents an analysis of NPV sensitivity to variations in discount rate, product prices, capital cost and operating cost assumptions. In addition, SRK presents an analysis of NPV and IRR sensitivity to (i) a scenario which anticipates a 12-month delay in construction and reaching production capacity of 10 mtpa, (ii) a scenario which anticipates failure to outsource the capital items the Company believes will be outsourced and (iii) the marked change in foreign exchange rates between pounds sterling and the U.S. dollar, since Brexit. The impact of these sensitivities, according to SRK, is as follows:

- SRK has assessed the impact of delays in reaching production capacity of 10 mtpa. This has been assessed by assuming that production capacity of 10 mtpa is reached in 2025, which is 12 months later than 2024 as reflected in the Company's base case estimate. SRK also assumed that additional capital costs of US\$50 million are incurred over this delay period to account for the additional owner- and contractor-related costs. According to SRK, the net effect of this would be to reduce the NPV from US\$6.8 billion to US\$6.6 billion and to reduce the IRR from 20.3 per cent. to 19.8 per cent., both at production of 10 mtpa.
- SRK has also assessed the impact of no capital items being outsourced and all related capital costs being included in the Company's Project financial analysis. According to SRK, the net effect of this would be:
  - a reduction in direct operating costs from US\$32.6 per tonne to US\$25.4 per tonne;
  - an increase in Project construction capital costs by US\$0.6 billion to US\$3.5 billion;



- an increase in NPV from US\$6.8 billion to US\$6.9 billion; and
- a reduced IRR from 20.3 per cent. to 19.4 per cent.
- SRK has also assessed the impact of the marked change in foreign exchange rates to pounds sterling, in particular between pounds sterling and the U.S. dollar, since Brexit. Given that approximately 67 per cent. of the Project construction capital costs (per the DFS assumptions) and 100 per cent. of the operating costs (per the DFS assumptions) are denominated in pounds sterling and converted to U.S. dollars in the Company's financial model, SRK has assessed the impact of assuming a more current exchange rate compared to the rate assumed at the time of the DFS estimates. According to SRK, the net effect of this would be:
  - a reduction in Project construction capital costs by US\$262 million to US\$2,689 million;
  - a reduction in all-in operating costs by US\$1.28 billion to US\$29.41 billion;
  - an increase in NPV by US\$405 million to US\$7.21 billion; and
  - an increase in IRR from 20.3 per cent. to 21.8 per cent.

#### 8.3.4 Project Financial Analysis Assumptions

The Company's key assumptions underlying the Project's financial analysis as presented in this paragraph 8.3 are as follows:

- 50 year mine life from first production, with no terminal value;
- Commencement of scheduled construction activities on 1 October 2016 (adopted as reference point; the actual Construction Commencement Date was 1 January 2017; this is different from the assumed start date of construction for the DFS and CPR, which in both cases was 1 April 2016);
- Achievement of production capacity of 10 mtpa by mid-2024;
- Ability to expand to production capacity of 13 mtpa by mid-2024 by incremental addition of mining, granulation and harbour capacities and, subject to receipt of additional planning permissions, expansion to production capacity of 20 mtpa by the end of 2026 with incremental additional capital expenditure for each of these expansions funded from operations over the three-year period prior to achieving production capacity of 20 mtpa (as explained above, expansion to 13 mtpa and in turn to 20 mtpa is not reflected in the valuation presented by SRK in the CPR);
- 80 per cent. granulated POLY4 and 20 per cent. coarse POLY4 production and sales split;
- Nominal project cashflows with annual inflation of 2 per cent. on prices and costs with initial construction capital cost escalation, as per the DFS estimates;
- NPVs are after-tax, excluding financing costs, applying a 10 per cent. nominal discount rate;
- IRRs are after-tax, excluding financing costs;
- Revenues estimated based on expected free on board POLY4 prices derived from existing take-or-pay offtake agreements and regional sales forecasts. Estimates assume average base prices for the first ten years of production of US\$158 (in real (actual) 2016 terms) per tonne and average mine life equivalent prices of US\$181 (in real (actual) 2016 terms) per tonne;
- Total royalties paid of 3 per cent. of revenue for mineral rights holders and the York Potash Foundation;
- Capital and operating costs translated to U.S. dollars from the currency of underlying estimates at exchange rates of £1 = US\$1.42 for pounds sterling and €1 = US\$1.08 for euro;
- Average sustaining capital expenditure of approximately US\$17 million per annum (in real (actual) 2016 terms) starting from 2024, once production capacity of 10 mtpa is achieved, and US\$26 million per annum (in real (actual) 2016 terms) starting from 2026, once production capacity of 20 mtpa is achieved; and
- UK corporation tax rate will be reduced to 17 per cent. effective 1 April 2020.

#### 8.3.5 Financing Plans

##### (a) Stage 1 Financing

The Stage 1 Financing, which will fund the Initial Construction Phase of the Project, is intended to fund the direct costs of all site preparation, mine shaft excavations, tunnel caverns and a proportion

of the indirect costs, project management and owner costs as well as provide contingency funds for the Project.

The Stage 1 Financing is comprised of three component parts.

- The first is the 2016 Firm Placing and Placing and Open Offer, which completed in November 2016 and to which the Existing Prospectus related.
- The second is the 2016 Convertible Bond Offering of US\$400 million convertible bonds due 2023 by Sirius Minerals Finance Limited, a wholly-owned subsidiary of the Company incorporated in Jersey, which completed in November 2016. The convertible bonds are guaranteed by the Company and will be convertible into redeemable preference shares of Sirius Minerals Finance Limited, which will be automatically exchanged into fully paid Shares. See paragraph 3.3 (“*Convertible Bonds*”) of Part 12 (“*Additional Information*”) of this Prospectus for further details of the key terms of the Convertible Bonds.
- The third is the Royalty Financing with Hancock, pursuant to which Hancock has agreed with the Company to purchase the Royalty in return for US\$250 million and will issue 200,076,829 Shares to Hancock in return for US\$50 million, subject to certain conditions as described below.

The Royalty Financing is conditional upon, *inter alia*, the Company having obtained financial commitments for a minimum of US\$1.088 billion and satisfaction of the other conditions more fully described in paragraph 11.6.3 (“*Royalty Financing Agreement*”) of Part 12 (“*Additional Information*”) of this Prospectus. Drawdown of the Royalty Financing will take place only once the Group has taken forward its development plans through capital expenditure of US\$630 million of the other Stage 1 Financing. See also Risk Factor 5 (“*The successful completion of the Royalty Financing and the Stage 2 Financing and thus timely construction of the Project infrastructure relies on the occurrence of several events, some of which are outside the Company’s control.*”) in Part 2 (“*Risk Factors*”) of this Prospectus.

As a result of these financing arrangements, the Company has secured approximately US\$1.2 billion in aggregate of Stage 1 Financing with final settlement of US\$0.9 billion of this total having occurred on 28 November 2016 and final settlement of the remaining US\$0.3 billion expected to be on drawdown of the Royalty Financing.

(b) Stage 2 Financing

The Stage 2 Financing is intended to fully fund the remainder of the Capital Funding Requirement, which largely includes costs relating to tunnelling, MTS and mine fit-out, the MHF and outsourcing charges relating to the harbour facilities. According to the DFS as updated by the Company’s further estimates, the Stage 2 Capital Funding Requirement to be funded by the Stage 2 Financing is currently expected to amount to approximately US\$1.8 billion. The Stage 2 Financing will also include commitments from lenders intended to provide the Company with the capacity to pay financing costs (comprising interest expenses, principal repayment amounts as well as administrative costs, fees and other charges associated with the financing) of up to US\$0.8 billion for a total of up to US\$2.6 billion. The Stage 2 Financing is currently expected to be funded by senior debt facilities, which are currently expected to be committed approximately two years after the Construction Commencement Date, prior to commencement of tunnelling works, and drawn down after the Stage 1 Financing has been largely utilised.

As of the date of this Prospectus, the Company has entered into a mandate letter (**Mandate Letter**) with six financial institutions, Export Development Canada, ING, J.P. Morgan, Lloyds Bank plc, Société Générale Corporate & Investment Banking and The Royal Bank of Scotland Plc (the **Mandated Lead Arrangers**), in connection with a potential senior debt financing which would constitute the Stage 2 Financing for the Project. The Mandate Letter establishes the terms under which the Mandated Lead Arrangers have been appointed to arrange senior debt facilities of up to US\$2.6 billion on the basis of a common term sheet.

The term sheet anticipates that the Stage 2 Financing plan will comprise the following:

- project finance facilities for an aggregate amount of US\$2.2 billion being made up of commercial bank facilities (including amounts to be committed by the Mandated Lead Arrangers and amounts to be committed by other commercial banks or financial institutions through a syndication process), IPA guaranteed facilities, and potentially Export Credit Agency guaranteed facilities; and
- a contingent funding facility of US\$0.4 billion should that be required.

The aggregate amount of the senior debt facilities of US\$2.6 billion (comprising the Stage 2 Financing amount of approximately US\$1.8 billion together with financing costs of up to US\$0.8 billion) has been determined by assuming a constant debt service coverage ratio, given the Company's projected production and sales levels, and that a certain target level of offtake agreements are in place to support the senior debt facilities prior to first utilisation, with offtake agreements assumed to be signed after the Prospectus date on substantially similar terms to the existing offtake agreements, including those terms relating to pricing.

The terms of the senior debt facilities will be fully defined once the Mandated Lead Arrangers' due diligence process has been completed.

The Mandate Letter does not constitute a binding commitment to underwrite, provide or secure financing, which remains subject to ongoing due diligence, the completion of definitive facility documentation, credit and other approvals, among other things. The Mandated Lead Arrangers will progress structuring and due diligence in relation to the senior debt facilities in parallel with the initial construction activities. See paragraph 11.6.4 ("*Mandated Lead Arrangers Engagement Letter for Stage 2 Financing*") of Part 12 ("*Additional Information*") of this Prospectus.

The Company expects to receive the benefit of a HMT guarantee under the UKGS for a component of the Stage 2 Financing. The UKGS was established in order to provide projects with access to a sovereign backed guarantee to help projects access financing. The Company received a letter of prequalification of the Project for the UKGS from the IPA in September 2015 and a subsequent letter in August 2016, following discussions with the Company about the Stage 2 Financing plan as outlined above, with the IPA confirming their interest in supporting the Stage 2 Financing. The prequalification process is a review process which takes into account considerations such as financial credibility, stage of development, need for a guarantee, significance and value for money for the taxpayer. Once a project has been prequalified, the IPA commences a due diligence process similar to that of a commercial lender. At the conclusion of this due diligence process, the Project will be presented to the HMT Risk Committee before being submitted to the Chancellor for approval. It is anticipated that the IPA due diligence and credit process will run in parallel with the credit processes carried out by the Mandated Lead Arrangers.

This two-stage external financing strategy is designed to align appropriate sources of financing to the Project risks as anticipated during the development.

#### *8.3.6 Unaudited Financial Projections*

On 17 March 2016, the Company announced the material findings from its definitive feasibility study conducted in respect of the Project (the **DFS Announcement**). The DFS Announcement also contained certain unaudited EBITDA projections for a number of future financial periods. Certain of these unaudited EBITDA projections were subsequently subject to non-material updates in the Company's investor presentation dated 17 June 2016, in respect of the DFS Announcement, and the Company's investor presentation to its 2016 annual general meeting dated 24 June 2016 (together the **Unaudited Financial Projections**).

Each of the Unaudited Financial Projections constitutes a profit forecast for the financial period to which each such projection relates for the purposes of the Prospectus Rules. The Company now considers that the Unaudited Financial Projections are no longer valid. The Company does not, as a matter of course, publicly disclose long-range prospective financial information, projected financial information or forecasted financial information given, among other reasons, the unpredictability of the underlying assumptions and estimates inherent in preparing financial projections and forecasts. The Company's definitive feasibility study was a collaboration of consultants and contractors under the management of the Company and the Unaudited Financial Projections were made available solely to assist investors in their understanding of the Project. The Unaudited Financial Projections were not intended to be a forecast of the Company's EBITDA given the uncertainty surrounding the expected capital structure of the Company at that time. As a result, the Unaudited Financial Projections were not made on the basis of the Company's existing accounting policies and were based on unaudited financial projections for certain financial years.

The Unaudited Financial Projections were not prepared with a view to complying with the Prospectus Rules, the applicable guidelines relating to the preparation and presentation of prospective financial information or IFRS. PricewaterhouseCoopers LLP (**PwC**), in its capacity as independent statutory auditor of the Company, has not audited, reviewed, compiled, examined or performed any procedures with respect to the Unaudited Financial Projections, nor have they expressed any opinion or any other form of assurance on such information or its achievability, and they assume no responsibility

for, and disclaim any association with, the Unaudited Financial Projections. The reports of PwC relating to the Historical Financial Information do not extend to the Unaudited Financial Projections and should not be read to do so.

The Unaudited Financial Projections were prepared prior to the publication of this Prospectus and were based on assumptions and estimates that, while considered reasonable by the Company's management as of the date of the DFS Announcement, as of the date of the Existing Prospectus and as at the date of this Prospectus, are subject to significant business, economic and competitive risks and uncertainties beyond the control of the Company. These include risks and uncertainties due to general business, economic, regulatory, market and financial conditions, as well as changes in the Company's business strategies, businesses, financial condition or results of operations, and other risks and uncertainties. The Unaudited Financial Projections do not reflect assumptions or estimates based on, or otherwise take account of, any circumstances or events that have occurred or that may occur after the date they were prepared. No assurances can be given that the assumptions and estimates underlying the Unaudited Financial Projections will be realised. In addition, and without limiting the foregoing, the Unaudited Financial Projections do not take into account certain recent trends that may affect the Company's results and that are expected to continue, including the continued weakness of certain European currencies, including the pound sterling, in relation to the U.S. dollar (as the Unaudited Financial Projections are expressed in U.S. dollars while a significant portion of the Company's costs are in euros and pounds sterling whilst the Company's and revenues are expected to be in U.S. dollars). Other relevant factors include uncertainty regarding long-term commodity prices, the development of the market for POLY4, the specific terms entered into by the Company for any future offtake arrangements, variability of other key assumptions (such as energy and shipping costs and inflation generally), uncertainty regarding timing in respect of the Project (including the length of the construction period and the timing for achieving key production milestones including the length of the ramp-up of production, the uncertainty with respect to obtaining the approvals which would be necessary to expand production up to 20 mtpa and any other potential interruptions caused by the Expansion Phase), the costs of extraction per tonne over the extended timeframe to which the Unaudited Financial Projections relate and uncertainty regarding operational performance parameters.

The Unaudited Financial Projections do not reflect the short- and long-term business plans that may be developed and business strategies implemented by the Company if and when the Project is implemented. Additionally, the Unaudited Financial Projections cover multiple years and long-range forecasts are subject to inherent risks and uncertainties, some of which are outside the Company's control. Such long-range forecasts, by their very nature, become less predictable with each successive year. Actual results are likely to differ, and may differ materially, from those originally disclosed by the Company and the likelihood of actual results diverging from projected results increases with each successive year. The Unaudited Financial Projections are subjective in many respects and are thus susceptible to multiple interpretations. As a result, the Unaudited Financial Projections constitute forward-looking statements and have not been updated since publication. Furthermore, the Unaudited Financial Projections may differ from publicly available analyst estimates and forecasts. Shareholders and any other readers of this Prospectus should read in their entirety the risk factors and uncertainties described in Part 2 ("*Risk Factors*") and Part 5 ("*Presentation of Information*") of this Prospectus. As a result, the Unaudited Financial Projections are subject to a variety of factors that could cause actual results to differ materially from the results forecasted and Shareholders should not place any reliance on them. Except to the extent required by applicable law and regulation, neither the Company nor any other person or entity has any obligation to update the Unaudited Financial Projections.

## **9. LEASES, LICENCES AND PERMITTING**

### **9.1 *Mining and Mineral Rights in the United Kingdom***

Generally, mineral rights for gold and silver in the UK belong to the Crown, whilst coal reserves are vested in local authorities. All other mineral rights, however, are typically owned by the freehold owner of the relevant land unless a previous owner excluded the mineral rights from a subsequent sale of the land. These rights extend from the surface, or just below, to the centre of the Earth. All offshore mineral rights are held by the Crown. Information regarding who owns mineral rights, together with information about who owns the respective land, is in the vast majority of cases where land is registered held by the Land Registry. In order to extract minerals, a mining company is required to obtain agreement from the mineral rights owner. In addition, to commence a mining operation, planning permission must be obtained from the local mineral planning authority.

The Group benefits from mineral rights agreements which provide it with rights to all evaporates, including potash, polyhalite, halite and inter-mingled minerals, below a depth of 800 metres from the surface within the Project's area of interest both onshore and offshore. Offshore, YPL has recently exercised its option to take a 70 year lease over 525 square kilometres. Onshore, YPL converted its option agreements into leasehold interests with small and large mineral rights owners in the third and fourth quarters of 2016. As part of this process, the Company commissioned counsel to identify issues to be resolved prior to completing the leases or exercising the rights thereunder, including scenarios where the mineral rights have been transferred to another owner or company and where mineral rights are now held by the estate of a deceased owner or where there are other reservations or matters affecting the ability to mine such land. The leases have been lodged with the Land Registry and are in the process of being registered as individual titles at the Land Registry. These lease arrangements are for 70 years each, with a right to extend for a further period of 60 years. YPL will have the ability to terminate the leases on each fifth anniversary of the commencement of the lease or in the event of exhaustion of the evaporites or their extraction ceasing to be economically viable. See paragraph 11.1.1 ("*Dove's Nest Farm Overage Payment Agreement*") of Part 12 ("*Additional Information*") of this Prospectus. As of the date of this Prospectus, the mineral rights agreements converted and in the process of being converted into leasehold interests cover approximately 89 per cent. of the Project's Indicated Mineral Resources (approximately 95 per cent. of the Project's area of interest) and further work is on-going to identify the ownership of and to reach agreement on the remainder, failing which it is expected that there will be future applications for compulsory acquisition.

#### *9.1.1 Planning and Environmental Permission in the United Kingdom*

In the UK, mineral development proposals are subject to two different but linked approval processes: planning permission and environmental permitting.

In England, the majority of spatial planning is regulated by the Town and Country Planning Act 1990. In the case of minerals, the planning consent is the primary approval for a development and is administered by local minerals planning authorities (MPAs). For most of England the MPA is the relevant county council. However, if the local planning authority is a national park authority, or if there is a unitary authority that has combined district and county council functions, the MPA will be the relevant national park authority or unitary authority. As the Project development area spans administrative boundaries, the MPAs for the Project are NYMNPA and RCBC. Planning consent is obtained through the preparation and submission of a planning application, which includes, in certain circumstances, an Environmental Statement prepared as part of an Environmental Impact Assessment process. The application is reviewed by the MPA following consultation with relevant stakeholders and having regard to both national and local planning policies, environmental impacts and other material matters.

The consenting regime for the harbour is under a different statutory regime, under the Planning Act 2008. Due to the volume of material the harbour is designed to move it is a "nationally significant infrastructure project" as defined in the Planning Act 2008. The permission that is required is in the form of a Development Consent Order (DCO). The application for a DCO, accompanied by an Environmental Statement, is submitted to a government agency called the Planning Inspectorate, following extensive pre-application consultation. The Planning Inspectorate then appoints an Examining Authority to examine the proposals during a six-month period. The Examining Authority submits a report with recommendations to the Secretary of State for Transport, which then decides whether or not to grant the order. The decision is made having regard to the National Policy Statement on Ports and other relevant policies, the assessment of environmental impacts and other material considerations.

The application process, consenting authorities and status of the Group's planning applications are presented in the following table. The Group has received all material permissions in connection with the construction of the Initial Construction Phase and the planned increase in production capacity to 13 mtpa. The Group intends to seek additional relevant permissions for the Expansion Phase prior to the end of the Initial Construction Phase.

Project component	Application process	Determining authority	Date application submitted	Date of decision
Mine head and MTS	Mineral Planning Application under Town and Country Planning Act 1990	NYMNPA and RCBC	September 2014	Permission granted by RCBC August 2015 and by NYMNPA October 2015
MHF	Mineral Related County Matters Application under Town and Country Planning Act 1990	RCBC	September 2014	Permission granted August 2015
Harbour	Development Consent Order under Planning Act 2008	Secretary of State for Transport following examination by the Planning Inspectorate	March 2015	DCO granted July 2016
Construction accommodation and construction worker park & ride facility	Planning Application under Town and Country Planning Act 1990	Scarborough Borough Council	February 2015	Permission granted August 2015
Whitby operations park & ride facility	Application under Town and Country Planning Act 1990	NYMNPA	January 2015	Permission granted August 2015

Environmental permission is regulated by the Environmental Permitting (England and Wales) Regulations 2010. It is a separate but parallel process to planning permission and is used to develop operating performance criteria. In England, environmental permission is administered by the local authority and the Environment Agency, depending on the facilities being permitted. The Environment Agency also advises the planning authority in setting environmental conditions on the planning permission. There are some activities, for example water abstraction and discharge, which are not incorporated in either permission system and require separate permits.

As the Project progresses, there are various secondary permits or approvals that the Company and/or its contractors will require for the conduct of its operations. These secondary permits include environmental permits, water discharge permits, ecological licences, land drainage consents and spoil management permits. Secondary permitting has not yet commenced.

#### 9.1.2 Planning Conditions and S106 Agreements

Planning permission authorities set certain conditions of approval of development plans, and request that certain environmental and social management measures be implemented. A total of 158 planning conditions were attached to the planning decision notices relating to all of the approvals outlined above, with which the Company is required to comply prior to and/or during the construction and operation of the relevant element of the Project. Equivalent conditions are also contained in the DCO. These conditions relate to the potential environmental impact of development, the design of building, construction methodology and the measures required to deal with the impact of traffic. The Company is currently implementing a programme to manage compliance with such conditions. If any of the conditions are not complied with, the relevant granting authority can enforce compliance via a variety of enforcement methods. None of these enforcement methods would result in the relevant planning permission being invalidated, but could potentially result in financial penalties being levied against the Company.

In addition to the planning conditions, agreements pursuant to section 106 (**S106**) of the Town and Country Planning Act 1990 have been entered into by the Company and the relevant authorities to regulate further aspects of the Project. These obligations include payment of monetary contributions to offset potential impacts of the development on the environment and to support the surrounding community by, among other things, contributing towards education of the labour force, provision of employment opportunities and improvements in public infrastructure, as well as for reinstatement security in the event mine operations cease. The expected cost implications of the Company's community obligations on a real (actual) 2016 basis, are approximately US\$136.3 million over the life of the mine, with specific amounts modelled from 2016 to 2030 varying between US\$0.1 million and US\$9.1 million per annum followed by a constant annual amount of US\$2.1 million per annum from 2031 until the end of the life of the mine. The Company is required to have payment security arrangements in place sufficient to pay some of the contributions under its S106 agreements due for approximately 12 years thereafter. See paragraph 11.4 ("*Planning: S106 Agreements*") of Part 12 ("*Additional Information*") of this Prospectus.

### 9.1.3 Mine, Mineral Transport System and Materials Handling Facility

A licence for offshore mineral extraction was granted to the Company by the Marine Management Organisation on behalf of the Secretary of State in January 2013. This licence commenced on 1 January 2017 and is valid until 1 January 2037, and allows for mineral extraction and other construction activity in relation to mining under the sea bed.

The Company received formal notice of approval of the Woodsmith mine and MTS from RCBC in August 2015 and from NYMNPA in October 2015. YPL received formal notice of approval of the MHF in August 2015. The judicial review window closed six weeks after receipt of these formal notices of approval.

As part of the development of the mine site, YPL owns the freehold of the Woodsmith mine and the adjacent Haxby Plantation. Together, these plots comprise the mine site of approximately 100 hectares, on and under which the minehead buildings and shafts will be developed. The Woodsmith mine head site (formerly known as Dove's Nest Farm) is subject to quarterly minerals royalty payments to be paid when product sales commence. See paragraph 11.1.1 ("*Dove's Nest Farm Overage Payment Agreement*") of Part 12 ("*Additional Information*") of this Prospectus.

With regard to the MTS, YPL has option agreements in place with the majority of known landowners to acquire long leasehold interests along the MTS route to allow the construction of the underground system to transport minerals and other materials in connection with its mining activities. YPL has finalised extensions to such option agreements to extend the expiration date of the option period from September 2016 to September 2017. The option agreements provide for a lease of a "working box" (allowing for horizontal and vertical tolerances) to construct the underground system for transporting minerals and materials in connection with mining.

In line with the mineral rights leases, the term of each MTS lease is 70 years with a right to extend for a further 60 year period. The MTS leases may be terminated on six months' notice by YPL at any time during their terms. Each landlord has the right to terminate the lease if construction of the tunnel has not commenced within ten years of the commencement date of the lease. See paragraph 11.2 ("*MTS Option Agreements*") of Part 12 ("*Additional Information*") of this Prospectus.

Ninety-eight per cent. of the land through which the MTS is to be constructed is covered by option agreements. The remaining 2 per cent. are areas where the land owner or owner of the mineral rights is unknown and some where the owners concerned, whilst not deliberately uncooperative, are difficult to maintain engagement with due to apparent disinterest on their part. In such cases, YPL (or the Company on behalf of YPL) intends to pursue an application for compulsory acquisition of ancillary rights under the Mines (Working Facilities And Support) Act 1966. This would involve an application initially to the successor department to the Department of Business Innovation and Skills (BIS) followed by a request for an order from the High Court. Initial discussions have taken place with officials from BIS and the Company is in the process of preparing to submit an application to BIS for the compulsory acquisition of ancillary rights in respect of the MTS.

In addition, YPL has option agreements in place to purchase the freehold interests of the intermediate access shaft sites. The option to purchase the freehold interest in the site at Lockwood Beck, where the intermediate access shafts will be situated, provide YPL with the right to acquire the freehold, together with an option to acquire a leasehold interest in additional adjoining land.

With regard to the MHF, York Potash Processing & Ports Limited (YPPPL), a subsidiary of the Company, has entered into option agreements with three landowners to acquire their respective freeholds of the land comprising the MHF site, which will together consist of a 36-hectare site to accommodate the buildings and plant required for processing the polyhalite ore, along with the tunnel portal for the MTS. See paragraph 11.3 ("*MHF and Harbour Facilities Option Agreements*") of Part 12 ("*Additional Information*") of this Prospectus.

### 9.1.4 Harbour Facilities

The Secretary of State for Transport approved the DCO for the harbour facilities in July 2016, and the judicial review period expired on 31 August 2016.

The DCO authorises the construction and use of the harbour facilities and ancillary infrastructure. The application for the harbour facilities included two alternative routes for the conveyor running between the MHF and the harbour facilities, a northern and southern route. The Secretary of State for Transport authorised the northern route and granted an option to construct either an open or solid quay, which optimises the type of ship loader to be used.

The DCO allows for the exercise of all rights necessary to construct and use the harbour facilities, including the northern conveyor. The DCO also includes rights to extinguish or override rights which hinder the development of the harbour facilities. These rights must be exercised by the Company by 20 July 2021. The acquisition powers in respect of rights over Crown Land may only be exercised with the consent of the Crown. In addition, the DCO includes provisions in favour of various parties whose assets are affected by the harbour facilities development, such as those assets oversailed by the conveyor. Under such provisions various consents are required from various parties, principally during construction. These consents are subject to dispute resolution provisions and some include an indemnity in respect of any losses arising directly from the impact of the development on the asset concerned.

For its harbour facilities, YPPPL has entered into a conditional option agreement with the landowner to purchase the freehold property comprising land and premises at Bran Sands, Redcar, which includes a riverside site for a berth up to 486 metres long. The Bran Sands site is subject to two long-term leases. The rest of the site, including the majority of the river frontage, is freehold with vacant possession. The option to acquire freehold on the land must be exercised prior to construction of the harbour, and there must be agreement with the Crown Estate to carry out certain elements of the harbour construction, including the dredging and construction of the quay. See paragraph 11.3.1 (*“Option agreements in relation to MHF and MTS”*) of Part 12 (*“Additional Information”*) of this Prospectus.

The total purchase price payable upon exercise of the options to acquire the freehold for all land sites is approximately £28.6 million.

#### *9.1.5 Ancillary Approvals*

In addition to approvals for the main facilities, YPL also applied to Scarborough Borough Council for permission to build a construction village and construction worker park and ride facility, which was approved in April 2015. The formal decision notice was received in August 2015. An operational park and ride facility, which is owned by NYCC, was also approved by the National Park Authority in June 2015 and the formal decision notice was received in August 2015.

## **10. HEALTH AND SAFETY, PRODUCT REGULATION AND SUSTAINABILITY**

### ***10.1 Health and Safety***

The Company’s activities are currently subject to an evolving set of supranational, national and local health, safety and environmental (**HSE**) laws that regulate or propose to regulate surface disturbance, air and water quality impacts and safety procedures followed by employees. Upon commencement of POLY4 production, the Company will also need to comply with laws that regulate or propose to regulate mining activities, including the management and handling of raw materials, disposal, storage and management of hazardous and solid waste, the safety of employees and post-mining land reclamation.

The two key pieces of legislation relating to HSE during the development of the mine are the Construction (Design and Management) Regulations 2015 and The Mines Regulations 2014 (which came into force on 6 April 2015) (the **Mines Regulations**). Other legislation (for example, The Health and Safety at Work Act: 1974, and the Management of Health and Safety at Work Regulations: 1999, among others) will also be pertinent throughout the Project. The key piece of legislation for the operational period will be the Mines Regulations.

The Company has in place a Health and Safety Policy which focuses on achieving “Zero Harm”, avoiding catastrophe through hazard control, developing a positive safety culture and complying with the regulatory framework. This policy will apply across all aspects of the Project development and construction, with contractors required to adopt the same approach. The Company has initiated regular interaction with the Inspector of Mines for both the construction and operational periods for all aspects of the Project other than the harbour.

The impact of new or changed laws, regulations or permitting requirements, or changes in the ways that such laws, regulations or permitting requirements are enforced, interpreted or administered cannot be predicted. HSE laws and regulations are complex, are subject to change and have become more stringent over time. It is possible that greater than anticipated HSE capital expenditures or reclamation and closure expenditures will be required in the future.



## ***10.2 Environmental Management and Sustainable Development***

### ***10.2.1 Environmental Management***

The Company intends to apply different approaches to environmental management for the construction and operation stages of the Project.

During the construction stage, the Company will allocate responsibility for environmental management to the construction contractors. Both of the current preferred tenderers maintain ISO 14001-certified environmental management systems. Under this approach, the Company has developed a Construction Environmental Management Framework (CEMF), the purpose of which is to:

- provide a consistent mechanism for ensuring that the Company meets its planning and other statutory requirements (i.e., obtaining all necessary environmental permits and licences not accounted for in the planning permissions);
- provide a Project-wide management framework for the planning, monitoring, controlling and reporting of the Company's and contractors' compliance with planning and other statutory requirements;
- establish roles and responsibilities for environmental management of the Project during the design and construction phases; and
- provide information to be used in the generation of employer's requirements in the form of contract specifications and a Planning Conditions and Secondary Approvals Tracker, which establishes responsibilities for legal and planning compliance, which together enable the construction contractors to develop an appropriate CEMF for their work.

During the period that ECI Contracts are in place, the Company will update the CEMF in order to develop an overall Environmental Project Execution Plan that will serve to ensure that relevant environmental management requirements are incorporated into contracts, and that compliance with these requirements can be monitored and audited as necessary.

Iteration of the CEMF began upon the Construction Commencement Date, resulting in a document that establishes an initial framework for environmental management when the Project becomes operational. Before the Project becomes operational the Company intends to design and implement an in-house environmental management system (EMS) for operations that will meet ISO 14001:2015 requirements. In addition to the EMS, a suite of environmental monitoring and management obligations will be established through numerous plans and documentation to comply with planning conditions and the requirements of statutory permits and licences for an operational mine facility.

As of the date of this Prospectus, the Company employs an environmental manager. Additional staff may be required to manage and monitor the contractors as construction progresses.

### ***10.2.2 Ecological Sustainability***

As the mine is located in the NYMNP, an environmentally sensitive area, the Company has proposed an innovative mine design that aims to have very low impact on the NYMNP. The infrastructure of the mine is specifically designed to be unobtrusive: the number and height of surface buildings have been minimised. The decision has been made to partially sink the shaft head frames below the surface. The mine shaft and MTS head frames will also be held within agricultural-styled buildings. Excavated material will be reused: material extracted during construction will remain on site and form the basis for additional landscaping and screening to ensure that mine buildings will not be visible off the mine-site. Processing will be outside of the NYMNP: all of the mined polyhalite will initially be crushed underground and most of it will be granulated in the MHF, to minimise the industrial development inside the NYMNP. Transportation of mined ore from a mine by road is only permitted for a period of eight months following the sinking of the initial shaft. As such, once the MTS is operational, all mined ore will be transported to the MHF underground in recognition of the sensitivity of the area and the lack of suitable road and rail infrastructure.

In addition, the Company has proposed significant funding to the NYMNP as part of its S106 payments, including (i) a contribution to the NYMNP's management plan starting at £118,500 a year at the beginning of construction, and rising to £592,500 per year "post-construction" for the lifetime of the Project and (ii) funding for tree planting in the NYMNP starting at £135,000 a year at the beginning of construction, and rising to £675,000 per year "post-construction" for the lifetime of the Project.

The closure plans developed for the Project relate to decommissioning of the Project at the end of the expected life of mine. The Company is required to provide financial security for closure works for the

mine head site and the intermediate shaft site at Lockwood Beck for the life of the mine. Separate decommissioning plans have been prepared for the mine head, MTS, MHF and overland conveyor system. The harbour terminal is considered to be a long-term infrastructure development, and therefore no decommissioning plan has been prepared for this component of the Project.

#### *10.2.3 Socio-Economic Sustainability*

In conjunction with its commitment to develop the Project in a sensitive manner, the Company is committed to an open approach with the local community and producing a beneficial effect on the local, regional and national economy. There has been a commitment to ongoing community engagement. The Company has produced regular newsletters to keep the community informed on developments in the Project, in addition to its regulatory announcements, press releases and web and social media updates in the normal course of business. It also frequently attends parish and town council meetings and gives presentations to local businesses and interest groups.

Moreover, the Company has a long-standing commitment to skills development in the local community, desiring to employ as many local workers as possible. Such skills work includes (i) apprenticeships, work experience and other placements; (ii) workshops in schools to raise awareness of potential careers in science, technology, engineering and maths; (iii) university sponsorships for promising local young people; and (iv) a commitment to training at least 300 adults from the local area.

Engagement with local businesses is also important to the Company. The Company is committed to using local suppliers wherever practical and has already spent in excess of £5 million with local businesses. This value is likely to increase dramatically as construction on the Project progresses. A large database of local suppliers has already been compiled.

Lasting community engagement will be supported by the work of the York Potash Foundation (YPF), which was set up to share the revenues of the Project with the local community. YPF is governed by a board of seven volunteer trustees and has been awarded charitable status from the Charities Commission. YPF will be independently run as a charity for the benefit of the area and fund local community projects. The Company will contribute an annual royalty of 0.5 per cent. of gross revenue on a free on board basis from the Project to the YPF, which is expected to amount to approximately £13 million per year at production capacity of 20 mtpa based on the Company's operating expenditure estimates, free on board POLY4 prices derived from existing Offtake Agreements and regional sales forecasts. A contribution of £2 million will be made during the construction period. YPF's objectives outline the areas it plans to support: (i) education and skills training beyond those programmes initiated by the Company itself; (ii) health and well-being; (iii) environmental protection and improvement beyond those contributions made to the NYMNP by the Company itself; (iv) support for the long-term unemployed; and (v) community facilities. See paragraph 11.6.5 ("*YPF Grant Agreement*") of Part 12 ("*Additional Information*") of this Prospectus.

In addition to payments from the YPF, overall economic benefits of an operational Project are expected to include the creation of 2,500 new jobs (direct and ancillary). As and when the Company achieves production capacity of 20 mtpa, it is estimated that the Company will pay approximately £500 million in taxes per year to the UK government and generate an additional £2.3 billion annual contribution to the UK GDP (which represents an increase in the size of the North Yorkshire economy of 20 per cent.) and a £2.5 billion annual contribution to UK exports, reducing the UK's balance of trade deficit by 7 per cent. It is also estimated that the Company will pay approximately £100 million in local payments per year, the majority of which would be payments to local landowners. These figures are calculated on the basis of estimated workforce numbers, a production rate of 20 mtpa, the Company's operating expenditure estimates and free on board POLY4 prices derived from existing Offtake Agreements and regional sales forecasts.

#### *10.2.4 Stakeholder Engagement Activities*

The Company's past stakeholder engagement activities have included consultation events to support the planning applications, a public affairs programme, stakeholder research, engagement for the education and skills development programme, distribution of corporate literature and community newsletters, media relations activities and maintenance of a Project-specific website.

The Company's future stakeholder engagement activities are set out in the Company's Community and Stakeholder Engagement Framework (CSEF), which describes the approach to community and stakeholder engagement during the construction period. For example, the CSEF provides that the local community and stakeholders will be provided with clear information before any construction

begins, detailing what the construction will involve, when it will take place and the measures that are in place to limit any adverse impact of the construction process on the community. Stakeholders will be provided with updates on the construction progress and mechanisms will be established to address any concerns that are raised by stakeholders.

Construction contractors will be required to work closely with the Company to implement community stakeholder engagement plans that comply with the CSEF.

## **11. INTELLECTUAL PROPERTY**

The Company protects its intellectual property rights primarily through a combination of patent, trade mark, and trade secret protection. It currently holds five trade marks granted by the Registrar of Trade Marks of the UK Intellectual Property Office, including over the trade name Sirius Minerals and image marks related to the POLY4 product. In addition the Company is currently seeking to register the POLY4 word trade mark in several of its key markets including Europe, United States, Brazil, Mexico, China and certain African markets.

Since December 2015, the Company has obtained three UK patents, one which relates to the pelletising processes to be used in relation to the POLY4 product, another which relates to the pelletised POLY4 product and the third which relates to the coating of seeds with polyhalite. It has submitted several other patent applications in the UK in relation to potential polyhalite related innovations and the proposed processes involved in the production of POLY4. In addition to the United Kingdom the Company has commenced an international patent registration program to seek protection relating to potential strategic opportunities in certain key markets and regions in relation to the product and processes involved in the production of POLY4, which are currently still pending. These markets include the United States, Brazil, China, Mexico, certain African countries under the ARIPO treaty and Europe. In addition certain of the patent applications have been made internationally under the WIPO Patent Cooperation treaty to provide future opportunity for the Company to seek patent protection. The processes and products covered by the patents and patent applications have been developed by the Company's employees in conjunction with third party service providers.

The Company's practice is also to have appropriate non-disclosure arrangements in place with potential customers, suppliers and other counterparties with whom the Company may discuss commercially sensitive information or to whom the Company may provide access to proprietary information, including un-patented technology and other trade secrets, to ensure the maintenance of confidentiality. In addition, the Company structures its agreements with consultants and service providers to ensure that any intellectual property developed or potentially developed on behalf of the Company in the performance of any services is retained as a work-for-hire and is owned by the Company. The Company has not thus far entered into licencing agreements with customers or service providers to ensure that the Company holds all relevant intellectual property rights but anticipates that it may have to do so in the future.

## **12. INSURANCE**

The Company appointed Marsh Risk Consulting as its risk adviser in October 2015 to support the development of its insurances strategy for the Project through construction and into operations. As of the date of this Prospectus, the Company believes that it has appropriate insurances in place. As construction has now commenced, at the appropriate time the Company plans to acquire appropriate additional insurances in an Owner Controlled Insurance Programme, on standard policy terms, and expand coverage as necessary as the Project development progresses.

## **13. EMPLOYEES**

As of the date of this Prospectus, the Group has 78 employees, seven of which are located in the Company's London office, two of which are located in the United States, one in Singapore, one in Uruguay and the remainder of which are located in the Company's head office in Scarborough. Currently these employees are mostly focused on engineering design, financing, sales and marketing and associated support functions and roles.

The Group expects to employ over 750 operations staff (some through its contractors) as the Project reaches the Initial Construction Phase production capacity of 10 mtpa. More than half are expected to be located at the mine, approximately 200 at the MTS, MHF and harbour, based at Teesside, and 70 at the head office. The Project's workforce is expected to increase to over 1,050 following the Expansion Phase. The majority of this workforce is expected to be direct employees of the Group.

However the Company intends to outsource specialist skills such as the maintenance of leased mobile mining equipment, which it expects to be carried out by the original equipment manufacturer. The Company intends to recruit locally, where possible, targeting people with relevant experience in heavy industry to ensure high levels of competency at the commencement of operations. Supplemental training programmes relating to operations skills in the mining industry will be developed.

#### **14. LEGAL PROCEEDINGS**

As of the date of this Prospectus, to the best of the Company's knowledge, it is not subject to any material potential, on-going, or completed legal or administrative proceedings.

#### **15. REASONS FOR ADMISSION**

The Board believes that the premium list is the appropriate venue for the Company's listing, putting the Company on a par with similarly sized companies and allowing the Company to raise its global profile. A premium listing will support the long-term strategy of the Company by providing the Company with a more appropriate platform for its growth and in keeping with the nationally significant nature of the Project (given its size and potential to make the United Kingdom a leading participant in the global multi-nutrient fertilizer industry) and the Company's market capitalisation, which is as of the date of this Prospectus in excess of £1,030,717,315.

The Board believes that the Company's intention, stated in the Existing Prospectus in November 2016, to seek a premium listing was a significant factor in the ability of the Company to attract institutional investors as part of the Company's successful 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering. The Board therefore believes that a listing on the Main Market will allow the Company to continue to benefit from a strong and growing interest in the Company from a wider pool of potential investors and, if the Company becomes a constituent of the FTSE 250 index, allow institutional investors who have previously been unable to invest in the Company (as many are restricted from investing in companies that are not part of certain equity indexes), to do so.

The Company is strongly committed to upholding the highest standards of corporate governance and believes that a premium listing will help to demonstrate that commitment.

## PART 8

### DIRECTORS, SENIOR MANAGEMENT AND CORPORATE GOVERNANCE

#### 1. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

##### 1.1 Directors

The current members of the Board are:

Name	Position	Age
Russell Scrimshaw .....	Non-Executive Chairman	67
Chris Fraser .....	Managing Director and Chief Executive Officer	42
Thomas Staley .....	Finance Director and Chief Financial Officer	36
Noel Harwerth .....	Senior Independent Director	69
Keith Clarke CBE .....	Independent Non-Executive Director	64
Louise Hardy .....	Independent Non-Executive Director	50
Lord Hutton .....	Independent Non-Executive Director	61
Jane Lodge .....	Independent Non-Executive Director	62

The business address of each Director is: 3rd Floor, Greener House, 68 Haymarket, London SW1Y 4RF, United Kingdom.

**Russell John Scrimshaw.** Russell Scrimshaw was formerly an executive director and deputy chief executive officer of Fortescue Metals Group Ltd. He was also formerly chairman of Cleveland Mining Co Ltd, and a non-executive board member of Commonwealth Properties Ltd, EDS Australia, Mobilesoft Ltd, Telecom New Zealand Australia Pty Ltd, The Garvan Institute Foundation and Athletics Australia. Russell has also held senior executive positions within the Commonwealth Bank of Australia, Optus Communications Pty Ltd, Alcatel, IBM and Amdahl USA. He is an associate member of the Australian Society of Certified Practising Accountants and has been an adjunct professor of Mining Economics at China Central South University in Changsha, China. He is currently a non-executive director of Genome.One Pty Ltd, the Garvan Institute for Medical Research and Waterford Retirement Village Pty Ltd and executive chairman of Torrus Capital Pty Limited. He is also the chairman of Australian Philanthropic Fund, The Scrimshaw Foundation and Scrimshaw Nominees Pty Ltd. Russell was appointed as non-executive Chairman of Sirius Minerals Plc in November 2011 and is a member of the Remuneration Committee and the Nominations Committee.

**Christopher Neil Fraser.** Chris Fraser has over 20 years' experience in the mining industry with a particular focus on financing and strategic developments. He is the founder of the Project, and has led its development since 2010 and has been managing director and CEO of the Company since January 2011. During his finance career he worked for KPMG, Rothschild and Citigroup, the latter culminating in him being appointed head of metals and mining investment banking for Australia in 2006 and managing director in 2008. Chris was the lead adviser on the US\$2.5 billion initial development capital financing for Fortescue Metals Group Ltd. Upon leaving Citigroup in 2009, he founded Sigiriya Capital Pty Ltd, a boutique advisory and investment firm. He was appointed as a director of Sigiriya Capital Pty Ltd on 25 March 2009 and continues to be a director as at the date of this Prospectus. Chris founded York Potash in 2010 and subsequently joined Sirius Minerals Plc in 2011. He is also currently a director of C&J Fraser Investments Pty Ltd. He is a member of the Institute of Chartered Accountants in Australia, senior associate of the Financial Services Institute of Australia (FINSIA) and a member of the Institute of Company Directors in Australia.

**Thomas Jay Staley.** Thomas has over 10 years' experience in the energy, infrastructure and resources industries with a focus on financing and financial governance for development projects. Thomas has spent a significant part of his career (January 2009-June 2012) working for the Mubadala Development Company (**Mubadala**) in Abu Dhabi where he was involved in several financings including a US\$600 million project finance facility for a power station development project, a €300 million government agency financing of a European development project, and a US\$2,200 million leveraged buy-out financing of a U.S. company. Prior to working at Mubadala, Thomas was working in Australia with Babcock & Brown from 2006 to 2008 where he was involved in numerous energy and infrastructure transactions. Most recently, Thomas was the head of commercial and risk in the international development team of Origin Energy from September 2012 to September 2014. He was the interim chief executive officer of a geothermal exploration project where he was appointed by the main shareholders, Origin Energy and Tata Power, to implement a turnaround plan and put the

development project back on track. Thomas has a Bachelor of Engineering (Electrical) and Arts and is a charter holder of the CFA Institute. Thomas joined the Company in October 2014.

**Elizabeth Noel Harwerth.** Noel Harwerth, whose executive background was in international banking, was formerly chief operating officer and chief tax officer of Citibank International. Noel is a highly experienced non-executive director who has sat on a number of boards in a variety of different sectors, including mining and finance industry companies. She brings with her a wealth of background and understanding in mining, finance and governance issues. She has been chair of GE Capital Bank Limited since February 2011, and chair of the UK Export Finance Agency since January 2017, non-executive director of Standard Life Plc since July 2012, non-executive director of the London Metal Exchange since December 2012, non-executive director of the British Horseracing Authority Limited since December 2014 and director of Harwerth Consulting Limited since March 2013. She previously held roles as director of Royal & Sun Alliance from March 2004 to March 2013, London First from September 2013 to December 2015, Alent Limited from October 2012 to December 2015, Avocet Mining plc from June 2012 to December 2013, LME Holdings Limited from September 2011 to December 2012, Logica Limited from January 2009 to August 2012, Sumitomo Mitsui Banking Corporation Europe Limited from December 2003 to June 2015, International Tax and Investment Center from May 1996 to November 2014, RSA Insurance Group plc from March 2004 to March 2013 and Dominion Diamond Corporation from 2008 to 2014. Noel joined the Board in July 2015. More recently, Noel's appointment to the board of Chaps Co. as senior independent director was announced on 27 September 2016. She is the Senior Independent Director and a member of the Nominations Committee and the Audit Committee.

**Keith Edward Frank Clarke CBE.** Keith Clarke was chief executive officer of WS Atkins plc, the UK's largest design and engineering consultancy, for eight years to July 2011 and previously held chief executive officer roles with Skanska UK and Kvaerner Construction Group. He also acted as director of sustainability and chairman of Atkins' Middle East business until April 2012. From September 2011 to December 2015, he was non-executive director of The Engineering and Technology Board (its trading name being EngineeringUK), and from August 2011 to March 2014 he was non-executive director of The British Standards Institution. He has been chair of Tidal Lagoon (Swansea Bay) Plc and Tidal Lagoon plc since September 2014 and September 2015 respectively, chair of Trustees for Forum for the Future since December 2011, non-executive director and vice chair of Future Cities Catapult since October 2013, vice president of the Institute of Civil Engineering since November 2013 and adviser to both Infrastructure UK and the Government of Qatar. He is currently a fellow of the Institute of Civil Engineering. He has also been a director of Keith Clarke Consulting Limited from December 2014. He was previously a director of Metronet Rail BCV Holdings Limited and Metronet Rail SSL Holdings from July 2007 to November 2011. Keith joined the Board in December 2013. He is the Chair of the Nominations Committee and a member of the Audit Committee.

**Louise Jane Hardy.** Louise Hardy has over 25 years' experience in the engineering sector. She currently has non-executive director roles at Ebbsfleet Development Corporation since April 2015, Department for Communities and Local Government since April 2014, Defence Infrastructure Organisation, Ministry of Defence since May 2015, and North West Cambridge Developments since March 2017. Previously, she was European project excellence director at Aecom and had a part-time executive role at Skanska UK from September 2015 to June 2016, as well as being a director at Laing O'Rourke, working as infrastructure director within CLM, which was the consortium delivery partner for the Olympic Delivery Authority for the London 2012 Olympics. Louise is a fellow of the Institution of Civil Engineers and a fellow of the Chartered Management Institute. She joined the Board in May 2016.

**Lord John Matthew Patrick Hutton of Furness.** John Hutton, Baron Hutton of Furness was a member of the Government for 13 years including 11 years as a minister and four years serving in the cabinet. He also served as a Parliamentary Private Secretary in the Department of Trade and Industry before moving to the Department of Health where he became Minister of State for Health in 1999. He was a chairman of the Independent Public Service Pensions Commission. Lord Hutton was a legal adviser to the Confederation of Business Industry and a senior law lecturer at Newcastle Polytechnic. He was Member of Parliament for Barrow and Furness for 18 years from April 1992 to May 2010. In 2005 Lord Hutton was made Secretary of State for Work and Pensions. In 2007 he was appointed Secretary of State for Business, Enterprise and Regulatory Reform. In 2008 he became Secretary of State for Defence until he stepped down from the Cabinet in 2009. In 2010 he was created a life peer as Baron Hutton of Furness and now sits in the House of Lords. Lord Hutton has

been a non-executive director of Arix Bioscience Limited since February 2016, Circle Holdings (UK) plc from May 2014, Simple Space Limited from April 2015 and Byhiras Group Limited from February 2016. He has been a director of Arthurian Life Sciences Limited since July 2013, a director of Nuclear Industry Association since June 2011 and a partner of Cartesius Advisory Network, Swiss Incorporation since 2014. He held directorship roles at Pension Quality Mark Limited from October 2013 to March 2015, The HMS Victory Preservation Company from October 2012 to November 2014, The Social Market Foundation from May 2011 to March 2014, MYCSP Limited from April 2012 to August 2013, and was chairman of the Royal United Services Institute from 2010 to 2015. Lord Hutton joined the Board in January 2012. He is Chair of the Remuneration Committee.

**Jane Ann Lodge.** After an academic background in Geology, Jane's executive career was primarily in accountancy, where she became a partner at Deloitte. Her roles included Deloitte's Midlands Practice senior partner and lead partner for the National Manufacturing Industry. As Manufacturing Industry Leader, she represented the UK on the Deloitte Global Manufacturing Industry Executive and was a member of the CBI Manufacturing Council. During her 35- year career with the firm, she advised multinational businesses in the construction, financial services, manufacturing and property sectors. Jane was the first woman partner in Deloitte to be appointed to the UK Board of Partners. Since 2012 Jane has served as a non-executive director for a number of publicly listed companies. She has been non-executive director and chair of the Audit Committee, Devro PLC since March 2012, non-executive director and chair of the Audit Committee of DCC PLC since October 2012, non-executive director and chair of the Audit Committees of Costain Group Plc since August 2012 and non-executive director of the Bromsgrove School Foundation since September 2012, non-executive director of Ives Ventures Limited since June 2011 and non-executive director of Ives Estates Limited since February 2013. She was previously a director of Moorgate Industries Limited (formerly Stemcor Holdings Limited) (in administration) from May 2014 to October 2015 and a director of The Black Country Living Museum Trust from September 2009 to September 2014. She joined the Board in July 2015. She is a member of the Remuneration Committee and Chair of the Audit Committee.

## 1.2 Senior Management

In addition to the Directors, the current members of the senior executive management team (the **Senior Management**) with responsibility for day-to-day management of the Company's business are:

Name	Position	Age
Chris Fraser.....	Managing Director and CEO	42
Thomas Staley .....	Finance Director and CFO	36
Nicholas King.....	General Counsel and Company Secretary	43
Simon Carter .....	Development Director	60
J.T. Starzecki .....	Sales and Marketing Director	42

**Nicholas Anthony King.** Nick has over 15 years' experience with leading law firms and in-house for blue chip corporates. He has extensive international public and private fund raising, mergers and acquisitions and commercial expertise at all stages of the capital structure. He joined the Company as general counsel in September 2012 and took on the role as company secretary as well in 2013. Nick is a member of the Company's executive team and manages the Company's board processes. He is responsible for all legal, company secretarial and governance issues across the business including general advice, negotiating contracts and execution in relation to financing, corporate development, project development and sales and marketing initiatives as well as managing more general contract management and legal issues including litigation and employment matters. Prior to taking on his role with the Company, Nick worked for Diageo from December 2008 to September 2010 as regional counsel in Australia and Japan, where he was a member of the Australian executive team and from October 2010 to April 2012 in the Diageo Africa business as regional counsel responsible for business development, mergers and acquisitions and the Africa Emerging Markets business. Prior to that, Nick worked as the general counsel of an Australian stock exchange listed energy business, having trained and qualified as a corporate solicitor at a magic circle firm based in London.

**Simon Anthony Carter.** Simon has 30 years' international experience with client, consultant and contractor organisations and a track record of delivering large and complex projects. Until July 2016 Simon was at Fortescue Metals Group (**Fortescue**) in Australia, which he joined as a project director in 2011. He led the team that developed the very successful 60 mtpa, US\$3.4 billion Solomon project and, in 2014, on completion of a fast track production ramp up, he was appointed chief executive officer of Iron Bridge, a joint venture between Fortescue, Formosa Plastics and Baosteel pursuing the

development of a US\$2 billion magnetite project. Simon was appointed director of development for Fortescue at the end of 2014, and in March 2015 his role was expanded as the leader of Fortescue's Advanced Business Drivers programme, which was the driver for reducing C1 costs (direct cash cost of production) across the business. Prior to Fortescue, Simon was senior vice president and general manager of WorleyParsons' Latin America and Caribbean business, responsible for a range of projects in the mining, power, oil and gas and petrochemicals sectors. Simon was recruited in July 2016 to lead the Project delivery team.

**Jason Thomas Starzecki.** J.T. has over 20 years' experience in business development and business-to-business sales. J.T. joined the Company in October 2009 and for the last five years, he has been director of sales and marketing of the Company. He was recently promoted to Chief Marketing Officer. This role includes leading the global sales team responsible for POLY4, and responsibility for the Company's global research and development programme and market strategy. J.T.'s other responsibilities include full fiduciary and budget management, project planning, strategy implementation, market development and research. Prior to his current role, J.T. was responsible for building the global exploration project portfolio for the Company.

### 1.3 Employees

The table below sets out the average number of people (full time equivalents) employed by the Group in the periods indicated:

	For the year ended 31 December	For the nine months ended 31 December	For the year ended 31 March	
	2016	2015	2015	2014
Sirius Minerals Plc.....	15	18	15	16
York Potash Limited.....	49	44	45	39
Dakota Salts LLC1.....	1	—	—	—
Sirius Minerals Australia Pty Limited.....	0	0	1	6
<b>Group Total.....</b>	<b>65</b>	<b>62</b>	<b>60</b>	<b>61</b>

The breakdown of the Group's employees by sector/activity in the periods indicated is as follows:

Sector/ Activity	For the year ended 31 December	For the nine months ended 31 December	For the year ended 31 March	
	2016	2015	2015	2014
Project Development .....	25	20	20	21
Executive Committee .....	5	7	6	3
Sales, marketing and agronomy .....	6	7	5	3
Finance and corporate development .....	10	8	7	8
Other support .....	19	20	22	26
<b>Group Total.....</b>	<b>65</b>	<b>62</b>	<b>60</b>	<b>61</b>

## 2. CORPORATE GOVERNANCE

The Board is committed to the highest standards of corporate governance. As of the date of this Prospectus and on and following Admission, the Board complies and will comply with the UK Corporate Governance Code published in April 2016 by the Financial Reporting Council (the **UK Corporate Governance Code**) save as set out below. As envisaged by the UK Corporate Governance Code, the Board has established an audit committee, a nomination committee and a remuneration committee. In addition, the Board has also established a disclosure committee. If the need should arise, the Board may set up additional committees as appropriate.



The Board is comprised of eight members, including the Chairman, with two executive directors and six non-executive directors. For the purposes of the UK Corporate Governance Code, the Board considers Lord Hutton, Louise Hardy, Keith Clarke CBE, Jane Lodge and Noel Harwerth to be independent in character and independent in judgement and therefore to be independent non-executive directors, notwithstanding Lord Hutton's and Keith Clarke's respective shareholdings in the Company under the Share Plans (as further described in paragraph 8 ("*Employee Share Plans*") of Part 12 ("*Additional Information*") of this Prospectus). Russell Scrimshaw was considered independent on appointment as Chairman.

The UK Corporate Governance Code provides that, in the case of a FTSE 350 company, at least half the board of directors of a UK public listed company, excluding the Chairman, should comprise non-executive directors determined by the board of directors to be independent in character and judgement and free from relationships or circumstances which may affect, or could appear to affect, the director's judgement. Having considered the guidelines for independence as set out in the UK Corporate Governance Code and the situation of each Director, the Board has concluded on each Director's independence and considers that the Company complies with the requirements of the UK Corporate Governance Code in this respect. Under the UK Corporate Governance Code, the holding of share options could be relevant to the determination of a non-executive director's independence. Although Lord Hutton and Keith Clarke hold share options in the Company under the Share Plans, these outstanding options were granted in 2012 and 2013 respectively, when the Company was listed on AIM. No further grants have been made to the Company's current non-executive directors since 2013 and, in line with the Company's existing remuneration policy, the Company does not intend to include share options or other performance-related elements in the remuneration of the non-executive directors in the future. Notwithstanding these options, the Board considers Lord Hutton and Keith Clarke to be independent non-executive directors.

The UK Corporate Governance Code recommends that the board should appoint one of its independent non-executive directors to be the senior independent director (the **Senior Independent Director**). The Senior Independent Director should be available to shareholders if they have concerns that the normal channels of chairman, chief executive or chief finance officer have failed to resolve or for which such channel of communication is inappropriate. Noel Harwerth takes the role of Senior Independent Director on the Board.

As a premium listed company, the Company is required to adhere to the UK Corporate Governance Code on a "comply or explain" basis. The UK Corporate Governance Code requires that the Board itself or, where required by the Articles of the Company, the shareholders, should determine the remuneration of the non-executive directors within the limits set in the Articles of Association. The Articles of the Company do not currently contain a provision setting a limit on the remuneration of the non-executive directors. However, the Company intends to adopt new articles of association as soon as practicable following Admission which incorporate a limit, in line with market practice, on the remuneration of the non-executive directors.

The Board believes that, except as set out in above, the Company will on Admission be in compliance with the provisions of the UK Corporate Governance Code.

### **3. AUDIT, REMUNERATION, NOMINATIONS AND DISCLOSURE COMMITTEES**

The Board has established Audit, Remuneration, Nominations and Disclosure Committees.

#### **3.1 Audit Committee**

The Audit Committee is made up of three members, Jane Lodge (Committee Chair), Keith Clarke CBE and Noel Harwerth, who are all independent non-executive directors. The UK Corporate Governance Code recommends that the Audit Committee should consist of at least three members who should all be independent non-executive directors, and that at least one member should have recent and relevant financial experience. The Company is therefore compliant with the UK Corporate Governance Code recommendations regarding the composition of the Audit Committee for smaller companies.

The Audit Committee normally meets at least four times a year at the appropriate times in the reporting and audit cycle and as requested by the external auditor. The audit and risk committee's role is to assist the Board with the discharge of its responsibilities in relation to financial reporting, including reviewing the Group's annual and half year financial statements and accounting policies, internal and external audits and controls, reviewing and monitoring the scope of the annual audit and the extent of the non-audit work undertaken by external auditors, advising on the appointment of

external auditors and reviewing the effectiveness of the internal audit, internal controls, risk management, whistle-blowing and fraud systems in place within the Group and overseeing the relationship with the Company's external auditor, PricewaterhouseCoopers LLP. The ultimate responsibility for reviewing and approving the annual report and accounts and the half-yearly reports, remains with the Board.

### **3.2 Remuneration Committee**

The Remuneration Committee is made up of three members, Lord Hutton (Committee Chair) and Jane Lodge, who are both independent non-executive directors, and Russell Scrimshaw, the Chairman. For smaller companies, such as the Company, the Remuneration Committee should consist of at least two independent non-executive directors. In both cases, the Chairman of the Company may be a member of, but not chair, the Committee if he/she was considered independent on appointment as Chairman. The Board therefore considers that the Company complies with the requirements of the UK Corporate Governance Code in this respect.

The remuneration committee recommends the Company's policy on executive remuneration, determines the levels of remuneration for Executive Directors and the Chairman and other senior executives and prepares an annual remuneration report for approval by the shareholders of the Company at the annual general meeting. The Remuneration Committee will normally meet at least twice a year.

### **3.3 Nominations Committee**

The Nominations Committee comprises Keith Clarke CBE (Committee Chair) and Noel Harwerth, who are both independent non-executive directors, and Russell Scrimshaw, the Chairman. The UK Corporate Governance Code provides that a majority of the members of the Nomination Committee should be independent non-executive directors and the chairperson should be the chairman or an independent nonexecutive director, but the chairman should not chair the Nomination Committee when it is dealing with the appointment of his/her successor. The Board therefore considers that the Company complies with the requirements of the UK Corporate Governance Code in this respect.

The Nomination Committee assists the Board in reviewing the structure, size and composition of the Board. It is also responsible for reviewing succession plans for the Directors, including the Chairman and Chief Executive Officer. The Nominations Committee usually meets at least twice a year.

### **3.4 Disclosure Committee**

The Disclosure Committee comprises Chris Fraser (Committee Chair), Thomas Staley, Nicholas King and Gareth Edmunds. The Disclosure Committee ensures that the Company makes timely and accurate disclosure of all information that is required to be disclosed to meet its legal and regulatory obligations as a company admitted to the premium listing segment of the Official List and to trading on the London Stock Exchange. The Disclosure Committee is not a requirement of the UK Corporate Governance Code but is considered best practice by the Company. The Disclosure Committee will meet as frequently as is necessary or appropriate to fulfil its responsibilities.

## **4. SHARE DEALING AND MARKET ABUSE**

The Company has adopted and applies policies and procedures to comply with the Market Abuse Regulation including a share dealing code on the dealing of securities of the Company by Directors and employees.

## PART 9

### SELECTED FINANCIAL INFORMATION

The selected consolidated financial information set forth below shows certain of the Group's historical consolidated financial information extracted without material adjustment from the Group's audited consolidated financial statements as at and for year ended 31 December 2016, as at and for the nine months ended 31 December 2015 and as at and for the years ended 31 March 2015 and 31 March 2014. The selected consolidated financial information below should be read in conjunction with, the information provided in Part 5 ("Presentation of Information"), Part 10 ("Operating and Financial Review") and Part 11 ("Historical Financial Information") of this Prospectus.

#### 1. CONSOLIDATED INCOME STATEMENT

	For the year ended 31 December	For the nine months ended 31 December	For the year ended 31 March	For the year ended 31 March
	2016	2015	2015	2014
		(audited)		
		(£'000)		
Revenue .....	—	—	—	—
Administrative Expenses .....	(11,872)	(7,422)	(10,047)	(9,115)
<b>Operating Loss</b> .....	<b>(11,872)</b>	<b>(7,422)</b>	<b>(10,047)</b>	<b>(9,115)</b>
Finance Income .....	1,489	99	332	49
Finance Costs .....	(13,039)	(186)	(353)	(1,063)
<b>Loss Before Taxation</b> .....	<b>(23,422)</b>	<b>(7,509)</b>	<b>(10,068)</b>	<b>(10,129)</b>
Taxation .....	468	550	503	2,151
<b>Loss for the Financial Year</b> .....	<b>(22,954)</b>	<b>(6,959)</b>	<b>(9,565)</b>	<b>(7,978)</b>

## 2. CONSOLIDATED STATEMENT OF FINANCIAL POSITION

	As at 31 December		As at 31 March	As at 31 March
	2016	2015 restated	2015	2014
		(audited) (£'000)		
<b>ASSETS</b>				
<i>Non-Current Assets</i>				
Property, Plant and Equipment.....	6,138	1,849	1,932	2,116
Intangible Assets.....	150,204	137,970	121,721	92,814
Restricted Cash.....	55,283	—	—	—
<b>Total Non-Current Assets .....</b>	<b>211,625</b>	<b>139,819</b>	<b>123,653</b>	<b>94,930</b>
<i>Current Assets</i>				
Derivative Financial Instrument.....	1,041	—	—	—
Restricted Cash.....	27,641	—	—	—
Other Receivables .....	840	1,184	1,413	1,046
Bank deposits .....	322,188	—	—	—
Cash and Cash Equivalents.....	260,157	29,093	26,640	48,404
Loans .....	—	—	—	—
<b>Total Current Assets .....</b>	<b>611,867</b>	<b>30,277</b>	<b>28,053</b>	<b>49,450</b>
<b>TOTAL ASSETS .....</b>	<b>823,492</b>	<b>170,096</b>	<b>151,706</b>	<b>144,380</b>
<b>EQUITY AND LIABILITIES</b>				
<i>Equity</i>				
Share Capital .....	10,412	5,737	5,362	4,658
Share Premium Account.....	590,723	240,874	216,586	197,797
Share-based Payment Reserve .....	6,114	7,624	13,290	11,404
Accumulated Losses .....	(112,261)	(90,399)	(95,630)	(86,360)
Foreign Exchange Reserve .....	1,284	1,266	7,028	7,374
<b>Total Equity .....</b>	<b>496,272</b>	<b>165,162</b>	<b>146,636</b>	<b>134,873</b>
<i>Non-Current Liabilities</i>				
Deferred Tax Liability.....	—	—	—	—
<i>Current Liabilities</i>				
Convertible Loan.....	321,366	—	—	—
Loan from Third Parties .....	—	748	1,980	5,340
Trade and Other Payables.....	5,854	4,186	3,090	4,167
<b>Total Liabilities.....</b>	<b>327,220</b>	<b>4,934</b>	<b>5,070</b>	<b>9,507</b>
<b>TOTAL EQUITY AND LIABILITIES.....</b>	<b>823,492</b>	<b>170,096</b>	<b>151,706</b>	<b>144,380</b>

### 3. CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

	Share capital	Share premium account	Share based payments reserve	Accumulated losses	Foreign exchange reserve	Equity shareholders' funds
				(£'000)		
<b>At 31 March 2013</b> .....	<b>3,359</b>	<b>147,763</b>	<b>10,345</b>	<b>(79,392)</b>	<b>7,164</b>	<b>89,239</b>
Loss for the financial year .....	—	—	—	(7,978)	—	(7,978)
Foreign exchange differences on translation of foreign operations .	—	—	—	—	210	210
Total comprehensive (loss)/ income for the year .....	—	—	—	(7,978)	210	(7,768)
Convertible loan .....	368	9,562	—	1,010	—	10,940
Share issue .....	897	42,147	897	—	—	43,941
Share issue costs .....	—	(2,180)	—	—	—	(2,180)
Share based payments .....	27	—	162	—	—	189
Exercised options .....	7	505	—	—	—	512
<b>At 31 March 2014</b> .....	<b>4,658</b>	<b>197,797</b>	<b>11,404</b>	<b>(86,360)</b>	<b>7,374</b>	<b>134,873</b>
Loss for the financial year .....	—	—	—	(9,565)	—	(9,565)
Foreign exchange differences on translation of foreign operations .	—	—	—	—	(346)	(346)
Total comprehensive (loss)/ income for the year .....	—	—	—	(9,565)	(346)	(9,911)
Convertible loan .....	113	3,287	—	295	—	3,695
Share issue .....	572	15,853	—	—	—	16,425
Share issue costs .....	—	(665)	—	—	—	(665)
Share based payments .....	—	—	1,886	—	—	1,886
Exercised options .....	19	314	—	—	—	333
<b>At 31 March 2015</b> .....	<b>5,362</b>	<b>216,586</b>	<b>13,290</b>	<b>(95,630)</b>	<b>7,028</b>	<b>146,636</b>
Foreign exchange reserve prior period adjustment .....	—	—	—	—	5,627	(5,627)
Loss for the financial period .....	—	—	—	(6,959)	—	(6,959)
Foreign exchange differences on translation of foreign operations .	—	—	—	—	(135)	(135)
Total comprehensive loss for the period .....	—	—	—	(6,959)	(135)	(7,094)
Convertible loan .....	44	1,103	—	258	—	1,404
Share issue costs .....	—	(121)	—	—	—	(121)
Share-based payments .....	—	—	(5,666)	6,365	—	699
Exercised options .....	332	23,306	—	—	—	23,638
<b>At 31 December 2015 restated</b> .....	<b>5,737</b>	<b>240,874</b>	<b>7,624</b>	<b>(90,339)</b>	<b>1,266</b>	<b>165,162</b>
Loss for the financial period .....	—	—	—	(22,954)	—	(22,954)
Foreign exchange differences on translation of foreign operations .	—	—	—	—	18	18
Total comprehensive loss for the period .....	—	—	—	(22,954)	18	(22,936)
Share issue .....	4,629	347,281	—	—	—	351,910
Share-based payments .....	32	1,418	(1,510)	1,032	—	972
Exercised options .....	14	1,150	—	—	—	1,164
<b>At 31 December 2016</b> .....	<b>10,412</b>	<b>590,723</b>	<b>6,114</b>	<b>(112,261)</b>	<b>1,284</b>	<b>496,272</b>

#### 4. CONSOLIDATED STATEMENT OF CASH FLOWS

	For the year ended 31 December	For the nine months ended 31 December	For the year ended 31 March	
	2016	2015	2015	2014
		(audited) (£'000)		
<b>Cash Flow from Operating Activities</b> .....	<b>(15,896)</b>	<b>(5,307)</b>	<b>(10,240)</b>	<b>(7,950)</b>
<i>Cash Flow from Investing Activities</i>				
Purchase of Intangible Assets .....	(12,108)	(15,533)	(27,188)	(17,424)
Purchase of Plant and Equipment .....	(4,346)	(1)	(62)	(1,461)
Purchase of Held to Bank Deposits .....	(320,187)	—	—	—
Repayment of Loan to Third Party .....	—	—	—	915
Interest Received .....	441	99	—	—
<b>Net Cash Flow Used in Investing Activities</b> .....	<b>(336,200)</b>	<b>(15,435)</b>	<b>(27,250)</b>	<b>(17,970)</b>
<i>Cash Flow from Financing Activities</i>				
Proceeds from Loan .....	—	—	—	15,748
Repayment of Borrowings .....	(748)	23,637	16,758	43,557
Purchases of Restricted Cash .....	(81,580)	—	—	—
Proceeds from Convertible Loan .....	319,923	(121)	(665)	(2,180)
Proceeds from Issue of Shares .....	371,445	—	—	—
Share Issue Costs .....	(18,370)	—	—	—
Convertible Loan Issue Costs .....	(9,158)	—	—	—
Interest Paid .....	(19)	(186)	—	—
Finance (Costs) / Income .....	—	—	(21)	(1,014)
<b>Net Cash Flow Generated from Financing Activities</b> .....	<b>581,493</b>	<b>23,330</b>	<b>16,072</b>	<b>56,111</b>
Net Increase / (Decrease) in Cash and Cash Equivalents .....	229,397	2,588	(21,418)	30,191
Cash and Cash Equivalents at Beginning of the Year .....	29,093	26,640	48,404	17,980
Effect of Foreign Exchange Rate Changes .....	1,667	(135)	(346)	233
<b>Cash and Cash Equivalents at the End of the Year</b>	<b>260,157</b>	<b>29,093</b>	<b>26,640</b>	<b>48,404</b>

## PART 10

### OPERATING AND FINANCIAL REVIEW

*The section that follows should be read in conjunction with Part 5 (“Presentation of Information”), Part 6 (“Industry Overview”), Part 7 (“Business Description”), and Part 11 (“Historical Financial Information”) of this Prospectus. Prospective investors should read the entire document and not just rely on the information set out below. The historical financial information considered in this part is extracted without material adjustment from the Group’s historical consolidated financial information in Part 11 (“Historical Financial Information”) of this Prospectus.*

In addition to historical information, the following discussion and other parts of this Prospectus contain forward-looking information that involves risks and uncertainties. Accordingly, the results of operations for the periods reflected herein are not necessarily indicative of results that may be expected for future periods, and the Group’s actual results may differ materially from those discussed in the forward-looking statements as a result of various factors, including those set forth under Part 2 (“Risk Factors”) of this Prospectus.

#### 1. OVERVIEW

The Company is focused on the development of what the Company believes to be the world’s largest high-grade known polyhalite deposit, located in North Yorkshire, United Kingdom – the Project. The Company’s polyhalite product, which it markets under the trademarked name POLY4, is a multi-nutrient fertilizer that can be used to achieve balanced fertilization, which is critical to obtain optimal crop yields and quality. The Company has developed a multi-channel, global sales strategy to meet what it believes will be a high level of market opportunity for multi-nutrient fertilizer products like POLY4, which have numerous advantages over traditional potash fertilizers. In support of this strategy, the Company intends to continue its global agronomy programme to further validate the performance of POLY4 in key geographical markets and for a large variety of crops. This programme is aimed at enhancing the market adoption of POLY4 by more widely demonstrating its nutrient value and benefit to customers. The Company also plans to implement an extensive product development programme in order to further explore other value-enhancing uses of POLY4, such as its incorporation into high-value NPK fertilizers and new application techniques such as seed coating.

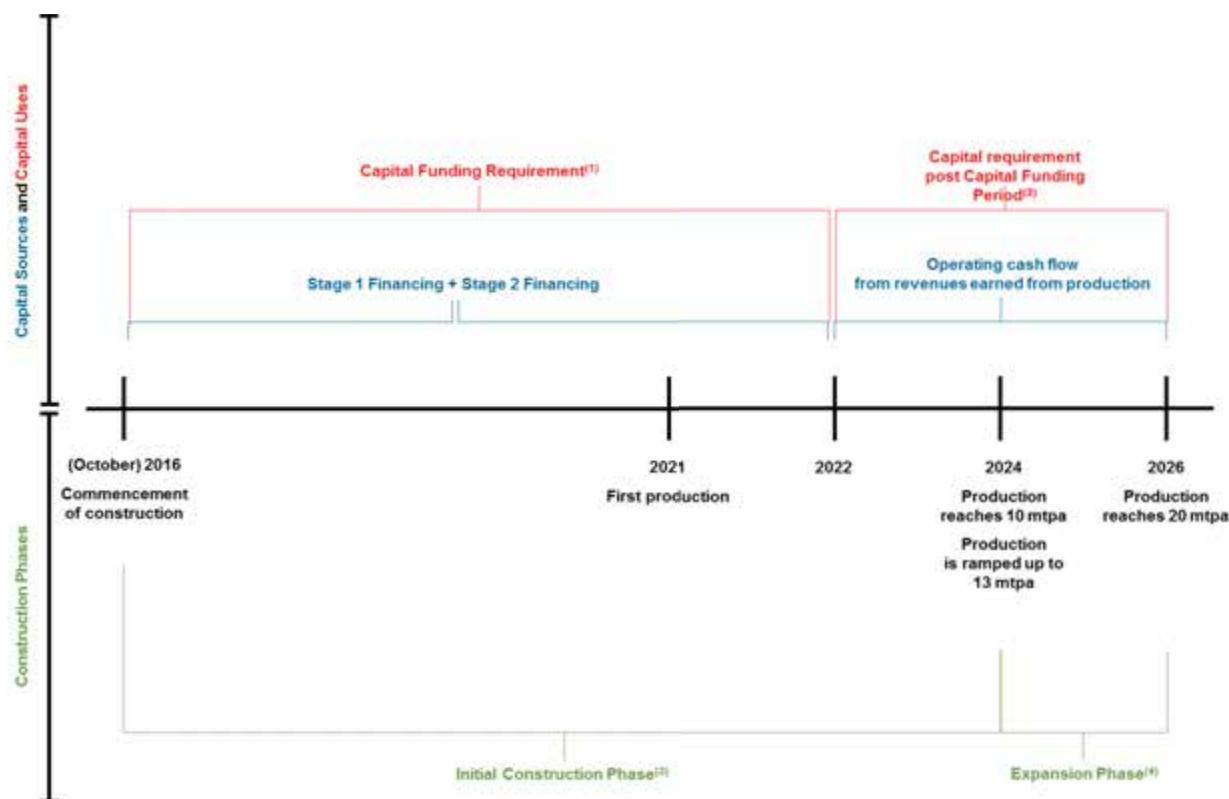
As of the date of this Prospectus, the Company has entered into binding large-volume, long-term, take-or-pay offtake agreements for POLY4 upon first production, for the total purchase of 3.6 mtpa at their respective full volumes from customers in China, North America, Central America and South America. Certain of these customers have options to purchase an additional 0.9 mtpa in aggregate. The agreements may be terminated in certain circumstances including the occurrence of a force majeure event, an insolvency event or persistent material breach of the agreement by either party and, for two of the agreements, if Project milestones are more than six months behind schedule.

Bringing the Project to an initial production capacity of 10 mtpa will involve the construction of an underground mine to enable the extraction of polyhalite, along with the necessary infrastructure both above and below ground that will be required for transportation, processing and distribution. Construction comprises the sinking of two vertical mine shafts to access the polyhalite deposit and building a 37 kilometre long underground conveyor, the MTS, a processing facility for granulating or chipping the mined material into the final physical form, the MHF, and harbour facilities comprising an approximately 3.5 kilometre long overland conveyor, a ship berth and a ship loader located adjacent to the harbour on the River Tees.

The Company expects to progress the Project in two primary phases: the Initial Construction Phase and the Expansion Phase. The Initial Construction Phase is intended to achieve first production from the mine by the end of 2021, and production capacity of 10 mtpa by mid-2024. Capital requirements of the Initial Construction Phase are expected to be externally financed in two stages during the Capital Funding Period (expected to fund the Project to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after the Construction Commencement Date). With the infrastructure existing at that point in time, there is the potential for production capacity to reach 13 mtpa (under existing planning permissions) in mid-2024 by incremental addition of mining, granulation and harbour capacities. The Expansion Phase is intended to eventually increase production capacity to 20 mtpa, subject to receipt of additional planning permissions and the completion of additional infrastructure. The Stage 1 Financing is intended to fund the direct costs of all site preparation, mine shaft excavations, tunnel caverns and a

proportion of the indirect costs, project management and owner costs as well as provide contingency funds for the Project. The Stage 2 Financing, which is intended to fully fund the remainder of the Capital Funding Requirement (as defined in paragraph 8.3.1 (“*Capital Requirements*”) of Part 7 (“*Business Description*”)) of this Prospectus, is currently expected to consist of senior debt facilities. See paragraph 8.3.5 (“*Financing Plans*”) of Part 7 (“*Business Description*”) of this Prospectus. Capital costs of the Initial Construction Phase after the Capital Funding Period and capital costs during the Expansion Phase are expected to be financed by operating cash flow from revenues earned from production.

The following timeline illustrates the various expected stages of financing and phases of construction and production.



#### Notes:

- (1) This is the Company's estimate of total expected capital funding requirement during the Capital Funding Period, i.e. to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after the Construction Commencement Date. It should be noted that this amount differs from the capital cost estimate as presented in the CPR, which reflects the Company's estimated capital costs during the Initial Construction Phase but is presented on a different basis and excludes certain items and also assumes commencement of construction in April 2016, in line with the DFS, rather than in October 2016. The actual Construction Commencement Date was 1 January 2017.
- (2) Represents capital costs which are expected to be funded out of cash flow from operating activities, including capital investment associated with the ramp-up to production of 10 mtpa, incremental capital investment associated with additional mining, granulation and harbour capacities needed to increase production capacity to the current maximum permitted amount of 13 mtpa by 2024 as well as the incremental costs needed to further increase the Project's production capacity to 20 mtpa.
- (3) The Initial Construction Phase runs broadly from the Construction Commencement Date until production capacity reaches 10 mtpa, currently intended to be in mid-2024, although infrastructure works necessary for expansion will begin during this period.
- (4) The Expansion Phase runs broadly from mid-2024, until production capacity reaches 20 mtpa, assuming planning permissions are received, although infrastructure works necessary for expansion will begin during the period defined as the Initial Construction Phase.

## 2. KEY FACTORS AFFECTING RESULTS OF OPERATIONS

The Company's results from operations have been, and will continue to be, affected by a number of factors, many of which are beyond the Company's control. See also Part 2 (“*Risk Factors*”) of this Prospectus.

Historically, the Company's negative operating result has been driven by the Company's administrative expenses in the absence of any revenue, as the Company has not yet commenced production and has been focused on obtaining planning approvals for the Project and completing the DFS and other preliminary work. These administrative expenses will continue to be a significant component of the Company's operating result through the Initial Construction Phase. In addition to



this, the debt component of the Stage 1 and Stage 2 Financings will require periodic interest payments to be made for the term of the debt. These interest payments will have a material negative impact on the Company's operating result, and generate additional losses before taxation for the foreseeable future. During construction and after the mine is operational and first commercial production has commenced (which is currently expected to be in 2021), there are several key items that the Company expects will impact its results from operations on a consolidated basis. These items are described below.

## ***2.1 The price at which the Company will be able to sell POLY4 will impact the Company's revenues.***

Once first commercial production has commenced, the sales price the Company is able to receive from customers for its POLY4 product will be the most significant factor affecting the Company's results of operations. The Company's business plan assumes a POLY4 price of US\$158 per tonne over the first ten years of production in real (actual) 2016 U.S. dollars, following which prices are assumed to rise, towards and beyond the nutrient value of the product, i.e. the value of the nutrients of which it is composed (US\$213 per tonne as of August 2016). These price assumptions are underpinned by several factors. First, while polyhalite is a relatively new mineral to the market and is not currently sold on a large scale, all principal nutrient components of the polyhalite mineral (potassium, sulphur, magnesium and calcium) are well established commodities in the fertilizer industry as components of existing fertilizer alternatives to POLY4 (including SOP and kieserite). Such data points help inform the Company's estimates with respect to the market price it expects to be able to achieve for POLY4. See Part 6 ("*Industry Overview*") of this Prospectus. Second, underlying benchmark nutrient prices vary by region and this variance underpins the Company's planned regional marketing strategy, targeting customers in regions with potentially strong interest in polyhalite and with characteristics that the Directors believe will be particularly receptive to the advantages of the POLY4 product. Third, the Company's expectations of the market price for POLY4 have also been derived with reference to the pricing mechanisms agreed in its existing Offtake Agreements. These mechanisms determine the price payable for POLY4 by incorporating the regional benchmark prices for the underlying nutrients. Over time, the Company believes it will be able to replace its current Offtake Agreements with new agreements which provide prices that are more directly reflective of the nutrient value of POLY4 itself. While polyhalite prices may vary from these assumptions, the Company believes that the diversity in the regional locations of its customer base will serve as mitigation against volatility.

Although a given agreement may have a floor price, because the pricing mechanisms in the Company's existing Offtake Agreements link the price of a fixed purchase of POLY4 to the market prices of its underlying nutrients, the revenues generated by these agreements are thus particularly dependent on the market prices for POLY4's competing substitute products which contain some of these nutrients (including SOP and kieserite). Thus for example, if the price of SOP is materially lower at the time of sale than current Company projections, the pricing mechanisms would compel a reduction in the price per tonne and the Company's revenues would be materially below the Company's current expectations. If, on the other hand, the market prices of these competing substitute products are materially higher at the time of these future sales, then the pricing mechanism would push the POLY4 price upwards, and the revenues generated would be materially higher.

The Company's current expectation based on its cost and market modelling is that the Project will be able to generate gross margins of between 70 and 85 per cent. depending on production volumes, POLY4 prices and other key assumptions. See paragraph 8.3.4 ("*Project Financial Analysis Assumptions*") of Part 7 ("*Business Description*") of this Prospectus. The Company anticipates an increase (in real (actual) 2016 terms) in the price of POLY4 over time as commercial production increases and global demand for the product is established. The Company believes its reliance on Offtake Agreements (which may include discounts) will gradually reduce over time, with sales at market prices (initially anticipated only on expiry of the agreements or for production volumes in excess of contractual levels) becoming a primary revenue generator thus reducing the impact of discounts to market over time.

## ***2.2 The volume of polyhalite produced and sold by the Company will impact the Company's revenues.***

In addition to the sales price that the Company is able to receive for POLY4 once first commercial production has commenced, the next most significant factor determining the Company's results will be the volume of production it is able to generate and sell from the Project in any given period. As discussed in Part 6 ("*Industry Overview*") of this Prospectus, global demand for fertilizers is in part dependent on the availability of arable land for cultivation, dietary choices, particularly in the

developed world, and the demand for biofuels. Demand for the Company's product will also depend on the pricing set for competitor products, including MOP and SOP, which often fluctuates alongside crop prices. The Company expects to reach commercial production capacity of 10 mtpa within 3 years of commencement of production. The Company will also seek to increase the Project's production capacity to 13 mtpa, and assuming the grant of further planning permissions, over a subsequent two year period will further increase production capacity to 20 mtpa. The Company has current Offtake Agreements and other non-binding commitments in the form of MoUs or LoIs, together totalling a POLY4 volume of 8.1 mtpa. On the basis of counterparties' willingness to enter into these commitments, together with market studies, the Company believes that the global market opportunity for POLY4 exceeds the Project's ultimate planned production capacity and intended production level of 20 mtpa. Should the demand for POLY4 ultimately be lower than projected, the volume sold, and therefore, the Company's revenue and operating profit will be materially lower than expected.

### ***2.3 The Company's profitability will be exposed to exchange rate risk, particularly between pounds sterling, euro and U.S. dollars.***

The Company's reporting currency is pounds sterling and it will have foreign currency exposure to U.S. dollars (and euros) in respect of certain construction costs for the Project, in respect of certain of the Project's operating costs once in operation and in respect of the sale of POLY4, which is expected to be denominated in U.S. dollars meaning that the Company's revenues will be substantially in U.S. dollars.

Historically, the Company has raised funds in pounds sterling and the considerable majority of its expenditure has been in pounds sterling, and as a result foreign currency exchange rate risk had little impact on the Company's results through the completion of Stage 1 Financing. However as a result of the Stage 1 Financing, the Company recognised significant assets and liabilities in its financial statements as at 31 December 2016, in U.S. dollars as well as pounds sterling. These included assets of £358.4 million in pounds sterling and £306.9 million equivalent in U.S. dollars, in a combination of cash or cash equivalents or other bank deposits, and liabilities of £321.4 million equivalent in U.S. dollars relating to the notes offered by 2016 Convertible Bond Offering. Together the amounts of U.S. dollar and pound sterling assets and liabilities account for over 80 per cent. of the Company's total assets and over 98 per cent. of the Company's total liabilities.

Furthermore, as the Company continues to agree the relevant construction contracts, Project construction costs are expected to be incurred with the native currency of the underlying capital costs, being predominantly a combination of pounds sterling, U.S. dollars and euro. In addition to its exposure as a result of the noted assets and liabilities, from the Construction Commencement Date and, at a later date, upon commencement of first commercial production, the Company's results of operations will be materially affected by foreign currency exchange rate fluctuations. SRK has assessed the impact of the marked change in foreign exchange rates between pounds sterling and the U.S. dollar, since Brexit. For more information, see paragraph 8.3 ("*Project Economics*") of Part 7 ("*Business Description*") of this Prospectus.

The Company has attempted to mitigate its medium to long term foreign exchange risk by planning a capital structure where capital is raised in currencies broadly matching the expected currency mix of its capital expenditure needs as well as its anticipated operating expenses. Thus the Company anticipates raising capital denominated primarily in pounds sterling and U.S. dollars. By broadly matching the currency mix of the Stage 1 Financing with its anticipated capital expenditure needs between pounds sterling and U.S. dollars, and by broadly matching long term debt in the Stage 2 Financing in U.S. dollars with revenue from production that is anticipated in U.S. dollars, the Company is attempting to establish, to a degree, a de facto currency hedge.

Although the Company has not historically had any formal hedging arrangements in place to manage its exposure to fluctuations in the value of foreign currencies, the Company periodically reviews the need for more formal hedging arrangements to manage its foreign exchange risk. The Company expects to consider formal hedging arrangements only once it is committed to obligations with significant foreign exchange exposures, for example, via signed construction contracts which commit the Company to incur capital expenditures in certain currencies.

The Company anticipates raising significant funds in U.S. dollars during the Capital Funding Period, which it will hold in cash or cash equivalent instruments to permit ease of distribution to satisfy Project construction costs. The Company's holdings in U.S. dollars will expose the Company to foreign exchange translation effects (as amounts it holds in U.S. dollars will need to be translated to

pounds sterling for purposes of preparing its financial statements), and their associated tax impact, as the relevant exchange rates fluctuate over time. These movements may have an impact on the Company's reported profit before tax in any given period and may also result in the Company needing to amend its funding plans to raise more or less capital, resulting in a corresponding increase or decrease in interest costs, an increase in equity dilution or surplus liquidity at the end of the Capital Funding Period. See Risk Factor 20 ("*The Company is exposed to foreign currency risk.*") of Part 2 ("*Risk Factors*") of this Prospectus.

Once first commercial production has commenced, substantially all of the Company's revenues from sales of POLY4 are expected to be denominated in U.S. dollars, and while the Company intends to arrange long term debt denominated in U.S. dollars, a substantial majority of the Company's operating expenses, such as labour and consumables such as electricity, will be denominated in pounds sterling. Accordingly, it is anticipated that fluctuations in the value of the pound sterling compared to the U.S. dollar will impact the results of operations of the Company. Over the long term, appreciation of the pound sterling versus the U.S. dollar, without offsetting improvement in POLY4 prices, would adversely affect the Company's profitability, while depreciation of the pound sterling against the U.S. dollar would have a positive impact on the Company's profitability. See paragraph 10 ("*Quantitative and Qualitative Disclosure about Market Risk*") of this Part 10.

Following completion of the 2016 Convertible Bond Offering, Sirius Minerals Finance Limited, a wholly owned subsidiary of the Company incorporated in Jersey, has outstanding senior, unsecured US\$400 million convertible bonds due 2023. For more information see paragraph 3.3 ("*Convertible Bonds*") of Part 12 ("*Additional Information*") of this Prospectus.

#### **2.4 The Company will incur substantial financing costs related to the Project.**

Historically, the Company's finance costs have been minimal. However during the Initial Construction Phase, beginning prior to first commercial production, the Company will incur increasing levels of finance costs as a result of initially, the Stage 1 Financing, and eventually, the Stage 2 Financing. For the year 2016, the Company incurred US\$41 million in initial financing fees and expenses related to undertaking the Stage 1 Financing. Most of these costs have been capitalised within the equity and liabilities balances of the consolidated statement of financial position, with the remainder classified on the income statement as finance costs.

Furthermore, under IFRS, the value of the conversion options within the Convertible Bonds issued as part of the Stage 1 Financing are treated as embedded derivatives. As a result the Company recognises the Convertible Bonds as financial liabilities at fair value through the income statement. Thus, the Company's income statement for any given period will be materially impacted, though on a non-cash basis, by any change in the valuation of the Convertible Bonds. The same is true with respect to the accounting treatment of Royalty Financing, which is subject to certain conditions precedent, the completion of which cannot be assured. Moreover, under the terms of the Convertible Bonds, the Company is also required to set aside an amount in an escrow bank account (US\$102 million pounds sterling equivalent) in respect of all coupon payments due until 28 November 2019 and which has been disclosed on the Company's statement of financial position as restricted cash as the Company is not able to use the cash for any purpose other than the payment of quarterly coupons.

The Company's Stage 2 Financing contemplates a long term senior debt facility to finance a large portion of the Project's Capital Funding Requirement. Although the Company has not yet entered into or agreed the terms of this debt facility, the Directors expect that once entered into, it will have a material interest expense, which may be at a variable rate. As such, the amount of interest payable by the Company would ultimately be a function of the relevant capital markets interest rates (for example, LIBOR, gilts or U.S. treasuries). A material increase in interest rates during the Initial Construction Phase or once first commercial production commences could ultimately lead to a higher interest expense on the Stage 2 Financing for the Company than that which is currently forecast. In the absence of any revenue before the commencement of first commercial production, these finance costs will generate additional losses before taxation for the foreseeable future. These losses may be compounded if the Company is forced to incur more debt than currently expected, for example, if the Company is required to finance the Project's cost overruns.

#### **2.5 Going forward, the Company will have considerable construction costs and increasing operating costs.**

Historically, the Company's costs have been administrative expenses (including non-capitalised staff costs, office costs and foreign exchange gains or losses) as well as capitalised costs relating to

obtaining approvals and studies of the Project and of POLY4. Going forward, as development of the Project ramps up, construction expenses and in turn, operating costs will have a substantial effect on the Company's results. Administrative expenses historically have been and on an ongoing basis will be classified as operating costs rather than as Project-related capital expenditure, whereas construction related costs incurred in the Initial Construction Phase will be capitalised as capital expenditures. Operating costs, though expected to be nominal during the Initial Construction Phase, are likely to increase over time under this accounting treatment as additional administrative expenditure (principally, employee costs) will be necessary to support the increased levels of activity within the Company. Upon commencement of first commercial production, operating costs are not expected to be capitalised and will be reflected on the Company's income statement. Further, with the commencement of production, the Company will begin to depreciate the asset value of the mine and the annual depreciation charge is expected to be material given the capital base of the Project.

According to the Company's estimates, the Project's annual operating costs once production has commenced in 2021 are estimated on a free on board basis (meaning without shipping costs) to be US\$32.6 per tonne at 10 mtpa production capacity and US\$27.6 per tonne at 20 mtpa production capacity. The key strategic advantages of the Project underpinning its relatively low operating costs include the proximity of the mine to the harbour, the thickness of the seam of polyhalite (supporting efficiency in mining) and the fact that it requires no chemical processing-polyhalite is treated as an organic product as it is simply mined, crushed, screened and bagged, and in the case of POLY4, granulated; therefore, one tonne of mined, high grade polyhalite ore will typically produce approximately one tonne of saleable product.

If the Project were to encounter unforeseen variances in mineralogy, the Company believes that a certain level of associated cost increases could likely be absorbed into the Company's financial model without significant difficulty while maintaining strong margins. Further, due to the nature of the proposed mining operations, at full production of 20 mtpa, approximately 91 per cent. of the Company's operating costs are projected to be variable, making the cost structure particularly resilient to the risk of lower than forecasted production levels.

Utilities are expected to be the biggest components of the operating costs for the Project, at an estimated full capacity (20 mtpa) cost of US\$7.9 per tonne. Electricity is expected to be the primary contributor. Electricity prices in the UK are based on several variables such as supplier, consumption rates and user profile as well as the wholesale gas/fuel markets, and thus are difficult to accurately estimate going forward. Although the Company has sought independent advice on the electricity needs for the Project, the accuracy of these estimates cannot be assured and actual prices may be higher or lower due to factors outside of the Company's control.

Maintenance costs (currently estimated at US\$5.8 per tonne at full capacity of 20 mtpa), raw materials and reagents (currently estimated at US\$4.8 per tonne at full capacity of 20 mtpa), and leasing costs, including total harbour capital charges (currently estimated at US\$4.9 per tonne at full capacity of 20 mtpa) are expected to represent other major operating costs for the Project, with labour representing a relatively minor contribution to operating costs (currently estimated at US\$2.3 per tonne at full capacity of 20 mtpa).

***2.6 There are certain ongoing contractual obligations, such as mineral rights royalty payments and community contributions, associated with the Project that may impact on the Company's profitability over time.***

In addition to the above-described operating costs, going forward the Company's results of operations will be impacted by land rights-related royalty payments and community contributions it will distribute. The royalty obligations of the Company to mineral rights holders are approximately 2.5 per cent. of gross revenue per annum in aggregate. This amounts to an average of approximately US\$95 million per annum in real (actual) 2016 terms at a production level of 20 mtpa or approximately US\$4.9 billion over the life of the Project based on the Company's current price forecasts for polyhalite.

In addition to royalty payments, the Company also has local community obligations. Monetary contributions to local authorities, which are mandated by planning permissions for the Project, and are to be used for local infrastructure projects and social programmes for the community of North Yorkshire, are expected to amount to approximately US\$136.3 million over the life of the mine, with specific amounts modelled from 2016 to 2030 varying between US\$0.1 million and US\$9.1 million per annum, followed by a constant annual amount of US\$2.1 million per annum from 2031 until the end of the life of mine. The Company is required to have payment security arrangements in place at the

start of construction sufficient to pay all contributions under its S106 agreements with local planning authorities due for approximately 12 years thereafter. The Company will place a cash amount in an escrow account for this purpose. See paragraph 11.4 (“*Planning: S106 Agreements*”) of Part 12 (“*Additional Information*”) of this Prospectus.

The Company also has voluntary obligations via its establishment of the York Potash Foundation (YPF), to fund community projects and social development in the North Yorkshire region. From the start of production, the Company has pledged to make contributions to the YPF at a rate of 0.5 per cent. of gross revenues per annum (currently expected to be an average of US\$19.0 million per annum over the first 50 years of operations on a real basis, or approximately US\$1.0 billion in total over the same period based on the Company’s current price estimates for polyhalite) in addition to a one off payment of £2 million during construction, which the Company anticipates will be made in the course of 2017.

### **3. COMPARABILITY OF THE FINANCIAL INFORMATION USED IN THIS PROSPECTUS; ROUNDING**

Notwithstanding reference to the Company, all historical financial information presented in this Part 10 is extracted without material adjustment from the Group’s consolidated financial statements.

Until 31 March 2015, the Company’s financial year ran from 1 April to 31 March. Beginning 1 April 2015, the Company has adopted a financial year ending 31 December. Therefore, this Part 10 includes information derived from the Group’s audited consolidated financial statements as at and for year ended 31 December 2016, as at and for the nine months ended 31 December 2015 and as at and for the years ended 31 March 2015 and 31 March 2014.

The Company’s results are generally not affected by seasonal variations. However, when comparing financial information corresponding to the different periods, investors should take into account that the periods presented in the different sets of financial statements account for different times of the year and are of different lengths. Because of these differences, the financial information included in this Prospectus may not be fully comparable period-on-period.

The values presented in the text are subject to differences due to rounding. Items are rounded to one decimal place. Therefore, certain items with real value may round to zero. Items with no real value are denoted as “nil”.

### **4. DESCRIPTION OF KEY INCOME STATEMENT LINE ITEMS**

#### **4.1 Revenue**

Once production commences, revenue will comprise gross income from polyhalite sold. The Company has not earned any revenue to date.

#### **4.2 Administrative Expenses (Operating Loss)**

The Company incurs expenses consisting of non-capitalised staff and corporate overhead costs, office costs and foreign exchange gains or losses, as well as capitalised costs relating to obtaining approvals and studies of the Project and of POLY4. The line item “administrative expenses” on the Company’s income statement reflects only the non-capitalised elements of these expenses. In light of the Company’s lack of revenue for the period under review, the Company’s administrative expenses as reflected on its income statement, represent its operating loss for the period.

#### **4.3 Finance Income and Finance Costs**

Finance income represents interest received from cash deposits with banks (both cash and equivalents, such as funds held as instant access deposits, and held to maturity financial instruments, which are term and notice bank deposits) and has been recognised in the income statement during the period in which it falls due. Finance costs represent interest paid on loans and other financings and are recognised in the income statement as they become payable.

#### **4.4 Taxation**

Current tax is provided at amounts expected to be paid (or recovered) using the tax rates and tax laws that have been enacted, or substantially enacted, by the balance sheet date. The standard rate of corporation tax in the UK has consistently declined over the period under review from 21 per cent. beginning 1 April 2014 dropping to 20 per cent. with effect from 1 April 2015. From 1 April 2016, this rate was reduced again to 19 per cent. Deferred taxation is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their

carrying amounts in the consolidated financial statements. However, if the deferred tax arises from the initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting, nor taxable profit or loss, it is not accounted for. Deferred tax is determined using tax rates and laws that have been enacted (or substantially enacted) by the balance sheet date and are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

The Company's income statement reflects tax benefits it receives from the UK Government's research and development tax relief scheme. The scheme is intended to encourage companies to engage in research and development activity and invest in advancing new technologies in the United Kingdom. For expenditure to be classified as research and development under the scheme, it must be related to an innovative or unique project undertaken in the pursuit of the overall advancement of knowledge in a given scientific or technological field, rather than research purely for a company's economic benefit. Qualifying spend on research and development can either be deducted from a large company's taxable income or, for small and medium size enterprises such as the Company, HM Revenue and Customs provides a "repayable credit" or cash sum, which effectively functions as tax relief.

## 5. RESULTS OF OPERATIONS

The table below sets forth the Company's consolidated income statement for the periods indicated.

	For the year ended 31 December	For the nine months ended 31 December	For the year ended 31 March	For the year ended 31 March
	2016	2015	2015	2014
		(audited)		
		(£'000)		
Revenue .....	—	—	—	—
Administrative Expenses.....	(11,872)	(7,422)	(10,047)	(9,115)
<b>Operating Loss</b> .....	<b>(11,872)</b>	<b>(7,422)</b>	<b>(10,047)</b>	<b>(9,115)</b>
Finance Income .....	1,489	99	332	49
Finance Costs .....	(13,039)	(186)	(353)	(1,063)
<b>Loss Before Taxation</b> .....	<b>(23,422)</b>	<b>(7,509)</b>	<b>(10,068)</b>	<b>(10,129)</b>
Taxation.....	468	550	503	2,151
<b>Loss for the Financial Year</b> .....	<b>(22,954)</b>	<b>(6,959)</b>	<b>(9,565)</b>	<b>(7,978)</b>

### 5.1 Revenue

The Company will not recognise any revenue until first commercial production from the Project has commenced. Therefore, the Company has not recognised any revenue in the year ended 31 December 2016, the nine months ended 31 December 2015 or the fiscal years ended 31 March 2015 and 31 March 2014.

### 5.2 Administrative Expenses (Operating Loss)

In light of the Company's lack of revenue over the periods reviewed, the Company's administrative expenses represent its operating loss over those periods.

For the year ended 31 December 2016, the Company's administrative expenses were £11.9 million. This represents an increase of £2.0 million, or 20.2 per cent. when compared to annualised expenses for the nine months ended 31 December 2015, which would have been £9.9 million. The movement in administrative expenses was primarily due to administrative costs incurred in connection with the Stage 1 Financing.

The Company's administrative expenses for the nine months ended 31 December 2015 were £7.4 million, which reflects a slight decrease in corporate overhead costs on an annualised basis, due mainly to the absence of certain one-off staff costs included in the prior period.

For the year ended 31 March 2015, the Company's administrative expenses were £10.0 million, an increase of £0.9 million, or 10.2 per cent., from £9.1 million for the year ended 31 March 2014. The movement in administrative expenses was primarily due to staff salary increases mirroring increasing headcount, related social security costs and relocation costs and compensation to enable certain key personnel to move to the United Kingdom. For the year ended 31 March 2014, the Company's administrative expenses were £9.1 million.

### **5.3 Finance Costs**

For the year ended 31 December 2016, the Company's finance costs were £13.0 million. This represents an increase of £12.7 million when compared to annualised finance costs for the nine months ended 31 December 2015, which would have been £0.2 million. The movement in finance costs was primarily due to a combination of interest expense payable on and exchange losses in relation to, the Company's issuance of the 2016 Convertible Bond Offering.

The Company's finance costs for the nine months ended 31 December 2015 were £0.2 million. The amount was primarily due to interest expense payable on the remaining amount outstanding under a convertible loan which was converted to Shares in multiple transactions from 2013 to 2015.

For the year ended 31 March 2015, the Company's finance costs were £0.4 million, a decrease of £0.7 million, or 66.8 per cent., from £1.1 million for the year ended 31 March 2014. The movement in finance costs was attributable to lower interest paid in the calendar year 2014 (thus, in the financial year 2015) on the convertible loan referenced above following several conversion transactions throughout the period, offset in part by interest paid on the Company's £0.7 million mortgage taken out in 2013 for the Woodsmith mine site (formerly known as Dove's Nest Farm), where the mine head will be located. For the year ended 31 March 2014, the Company's finance costs were £1.1 million.

### **5.4 Taxation**

For the year ended 31 December 2016, the Company's taxation was a £0.5 million credit. This represents a decrease of £0.3 million, or 37.5 per cent., when compared to an annualised tax credit for the nine months ended 31 December 2015, which would have been £0.7 million. The movement in taxation was primarily due to the timing of eligible research and development expenditure claims and consequently, the credit paid to the Company.

The Company's taxation for the nine months ended 31 December 2015 was a £0.6 million credit, as a result of a fluctuation in eligible research and development expenditure and consequently, the credit paid to the Company.

For the year ended 31 March 2015, the Company's taxation was a £0.5 million credit, a decrease of £1.7 million, or 76.6 per cent., from a £2.2 million credit for the year ended 31 March 2014. The decrease in tax credits was primarily due to a £1.0 million reduction in research and development tax credits corresponding to a decrease in research and development related activity and a £0.7 million reduction in deferred tax liabilities. For the year ended 31 March 2014, the Company's taxation was a £2.2 million credit.

## **6. LIQUIDITY AND CAPITAL RESOURCES**

### **6.1 Overview**

The Company's principal source of funds has historically been cash generated from financing activities, primarily the net cash generated by the completion of the majority of the Stage 1 Financing in November 2016, with £238.3 million received from the issuance of the 2016 Convertible Bond Offering and £371.4 million from the 2016 Firm Placing and Placing and Open Offer. In addition, historically the Company has relied upon loans from third parties, including a £0.7 million mortgage taken out in 2013 on the Woodsmith mine site (formerly known as Dove's Nest Farm), and financing in the form of a convertible loan from an institutional investor. Under the latter agreement, signed in August 2013, up to £25 million was to be made available via four tranches of interest free convertible securities which were convertible into Shares. The first tranche of £10 million was drawn down in August 2013 and a further £5 million was drawn down in January 2014. The remaining two tranches have now expired. The two tranches drawn down were converted to 209,383,007 Shares in a series of 142 conversion transactions between August 2013 and April 2015.

The Company expects that capital expenditures to fund the Initial Construction Phase of the Project, in the form of the Stage 1 and Stage 2 Capital Funding Requirements will represent its most

significant use of funds to 2024. It will also need to pay interest on the debt components of the Stage 1 and Stage 2 Financings, which it expects to do using the proceeds from those financings. After the Capital Funding Period, certain working capital requirements, payments of interest and principal on then-outstanding debt expected to be raised during the Capital Funding Period, and incremental capital expenditures after the Capital Funding Period are anticipated to be the primary use of funds and will be sourced out of cash flow from operations.

As at 31 December 2016, the Company had financial assets of £666.7 million. This includes £82.9 million in restricted cash not available for general use (equivalent to US\$102 million placed in an escrow bank account in respect of all coupon payments due until 28 November 2019 in respect of the 2016 Convertible Bond Offering) as well as £260.2 million of cash and cash equivalents in instant access deposits. The Company also holds £322.2 million in bank deposits. These are multiple term and notice bank deposits held at several highly rated banks and money market funds at multiple different interest rates (generally fixed rate) and with varying maturities, up to a maximum of twelve months.

In the opinion of the Company, the working capital available to the Group is sufficient for the Group's present requirements, that is, for at least the 12 months following the date of this Prospectus.

## **6.2 Capital Resources and Capital Expenditures**

The Company has undertaken staged financing of the Project covering a six year Capital Funding Period, which largely overlaps with the eight year Initial Construction Phase of the Project.

### **6.2.1 Stage 1 Financing**

The Company has undertaken staged financing to fund the Initial Construction Phase of the Project. The Stage 1 Financing will fund the direct costs of all site preparation, mine shaft excavations, tunnel caverns and a proportion of the indirect costs, project management and owner costs as well as providing contingency funds for the Project. The portion of the Capital Funding Requirement to be funded by the Stage 1 Financing is approximately US\$1.1 billion, plus an additional US\$0.1 billion in financing costs, for a total of approximately US\$1.2 billion.

As a result of these financing arrangements and the successful completion of the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering, the Company secured approximately US\$1.2 billion in aggregate of Stage 1 Financing with final settlement of US\$0.9 billion of this total having occurred on 28 November 2016 and final settlement of the remaining US\$0.3 billion expected to be on drawdown of the Royalty Financing.

### **6.2.2 Stage 2 Financing**

The Stage 2 Financing is intended to fully fund the remainder of the Capital Funding Requirement, which largely includes costs relating to tunnelling, MTS and mine fit-out, the MHF and outsourcing charges relating to the harbour facilities. According to the DFS as updated by the Company's further estimates, the Stage 2 Capital Funding Requirement to be funded by the Stage 2 Financing is currently expected to amount to approximately US\$1.8 billion. The Stage 2 Financing will also include commitments from lenders intended to provide the Company with the capacity to pay financing costs (comprising interest expenses, principal repayment amounts as well as administrative costs, fees and other charges associated with the financing) of up to US\$0.8 billion for a total of up to US\$2.6 billion. The Stage 2 Financing is currently expected to be funded by senior debt facilities, which are currently expected to be committed approximately two years after the Construction Commencement Date, prior to commencement of tunnelling works, and drawn down after the Stage 1 Financing has been largely utilised.

On 3 November 2016, the Company entered into a mandate letter (**Mandate Letter**) with six financial institutions, Export Development Canada, ING, J.P. Morgan, Lloyds Bank plc, Société Générale Corporate & Investment Banking and The Royal Bank of Scotland Plc (the **Mandated Lead Arrangers**), in connection with a potential senior debt financing which would constitute the Stage 2 Financing for the Project. The Mandate Letter establishes the terms under which the Mandated Lead Arrangers have been appointed to arrange senior debt facilities of up to US\$2.6 billion on the basis of a common term sheet.

The term sheet anticipates that the Stage 2 Financing plan will comprise the following:



- project finance facilities for an aggregate amount of US\$2.2 billion being made up of commercial bank facilities (including amounts to be committed by the Mandated Lead Arrangers and amounts to be committed by other commercial banks or financial institutions through a syndication process), IPA guaranteed facilities, and potentially Export Credit Agency guaranteed facilities; and
- a contingent funding facility of US\$0.4 billion should that be required.

The aggregate amount of the senior debt facilities of US\$2.6 billion (comprising the Stage 2 Financing amount of approximately US\$1.8 billion together with financing costs of up to US\$0.8 billion) has been determined by assuming a constant debt service coverage ratio, given the Company's projected production and sales levels, and that a certain target level of offtake agreements are in place to support the senior debt facilities prior to first utilisation, with offtake agreements assumed to be signed after the Prospectus date on substantially similar terms to the existing offtake agreements, including those terms relating to pricing.

The terms of the senior debt facilities will be fully defined once the Mandated Lead Arrangers' due diligence process has been completed.

The Mandate Letter does not constitute a binding commitment to underwrite, provide or secure financing, which remains subject to ongoing due diligence, the completion of definitive facility documentation, credit and other approvals, among other things. The Mandated Lead Arrangers will progress structuring and due diligence in relation to the senior debt facilities in parallel with the initial construction activities. See paragraph 11.6.4 ("*Mandated Lead Arrangers Engagement Letter for Stage 2 Financing*") of Part 12 ("*Additional Information*") of this Prospectus.

The Company expects to receive the benefit of a HMT guarantee under the UKGS for a component of the Stage 2 Financing. The UKGS was established in order to provide projects with access to a sovereign backed guarantee to help projects access financing. The Company received a letter of prequalification of the Project for the UKGS from the IPA in September 2015 and a subsequent letter in August 2016, following discussions with the Company about the Stage 2 Financing plan as outlined above, with IPA confirming their interest in supporting the Stage 2 Financing. The prequalification process is a review process which takes into account considerations such as financial credibility, stage of development, need for a guarantee, significance and value for money for the taxpayer. Once a project has been prequalified, the IPA commences a due diligence process similar to that of a commercial lender. At the conclusion of this due diligence process, the Project will be presented to the HMT Risk Committee before being submitted to the Chancellor for approval. It is anticipated that the IPA due diligence and credit process will run in parallel with the credit processes carried out by the Mandated Lead Arrangers.

This two-stage external financing strategy is designed to align appropriate sources of financing to the Project risks as anticipated during the development.

### 6.2.3 Post Capital Funding Period

Costs after the Capital Funding Period are expected to be funded out of cash flow from operating activities. This includes (in real (2016) figures) an estimated US\$207 million in capital investment associated with the ramp-up to production of 10 mtpa, which the Company anticipates funding from operating cash flow once production commences, and incremental capital investment (in real (2016) figures) estimated as an additional US\$328 million associated with additional mining, granulation and harbour capacities needed to increase production capacity to the current maximum permitted amount of 13 mtpa by mid-2024 as well as the incremental capital investment of an additional US\$1.2 billion to further increase the Project's production capacity to 20 mtpa. Sustaining capital costs over the life of the Project assuming expansion to 20 mtpa have been estimated on a real basis in the Company's financial model to be US\$1.3 billion from 2024 over the life of the mine and expected to vary between US\$5 million and US\$69 million per annum but averaging US\$26 million per annum.

### 6.3 Cash Flows

The table below sets forth the Company's consolidated cash flow for the periods indicated:

	For the year ended 31 December	For the nine months ended 31 December	For the year ended 31 March	
	2016	2015	2015	2014
		(audited) (£'000)		
<b>Cash Flow from Operating Activities .....</b>	<b>(15,896)</b>	<b>(5,307)</b>	<b>(10,240)</b>	<b>(7,950)</b>
<i>Cash Flow from Investing Activities</i>				
Purchase of Intangible Assets .....	(12,108)	(15,533)	(27,188)	(17,424)
Purchase of Property, Plant and Equipment .....	(4,346)	(1)	(62)	(1,461)
Purchase of Bank Deposits .....	(320,187)	—	—	—
Repayment of Loan to Third Party .....	—	—	—	915
Interest Received .....	441	99	—	—
<b>Net Cash Flow Used in Investing Activities...</b>	<b>(336,200)</b>	<b>(15,4335)</b>	<b>(27,250)</b>	<b>(17,970)</b>
<i>Cash Flow from Financing Activities</i>				
Proceeds from Loan .....	—	—	—	15,748
Repayment of Borrowings .....	(748)	23,637	16,758	43,557
Proceeds from Convertible Loan .....	319,923	(121)	(665)	(2,180)
Purchases of Restricted Cash .....	(81,580)	—	—	—
Proceeds from Issue of Shares .....	371,445	—	—	—
Share Issue Costs .....	(18,370)	—	—	—
Convertible Loan Issue Costs .....	(9,158)	—	—	—
Interest Paid .....	(19)	(186)	—	—
Finance (Costs) / Income .....	—	—	(21)	(1,014)
<b>Net Cash Flow Generated from Financing Activities .....</b>	<b>581,493</b>	<b>23,330</b>	<b>16,072</b>	<b>56,111</b>
Net (Decrease)/ Increase in Cash and Cash Equivalents .....	229,397	2,588	(21,418)	30,191
Cash and Cash Equivalents at Beginning of the Year .....	29,093	26,640	48,404	17,980
Effect of Foreign Exchange Rate Changes	1,667	(135)	(346)	233
<b>Cash and Cash Equivalents at the End of the Year .....</b>	<b>260,157</b>	<b>29,093</b>	<b>26,640</b>	<b>48,404</b>

#### 6.3.1 Cash Flow from Operating Activities

For the year ended 31 December 2016, cash flow from operating activities was an outflow of £15.9 million. This represents an increase of £8.8 million when compared to annualised cash flow from operating activities for the nine months ended 31 December 2015, which would have been £7.1 million, primarily reflecting increases in operating losses before tax, as a result of the administrative expenses associated with the Stage 1 Financing.

The Company's cash flow from operating activities for the nine months ended 31 December 2015 was an outflow of £5.3 million, reflecting operating costs.

For the year ended 31 March 2015, cash flow from operating activities was an outflow of £10.2 million, an increase of £2.2 million, or 28.8 per cent., from an outflow of £8.0 million for the year ended 31 March 2014. These movements reflect the movement in creditors and operating losses before tax, which includes non-capitalised staff costs, office costs and impairments, partially offset by research and development tax credits and share-based payments.

### 6.3.2 Net Cash Flow from Investing Activities

For the year ended 31 December 2016, net cash flow from investing activities was an outflow of £336.2 million. This represents an increase of £315.6 million when compared to annualised cash flow from investing activities for the nine months ended 31 December 2015, which would have been £20.6 million, reflecting the Company's investments in term and notice bank deposits with maturities of longer than three months and not therefore recognised as cash and cash equivalents, with the proceeds from the Stage 1 Financing, as well as an increase in intangible investments and property purchases in preparations for the Initial Construction Phase.

The Company's cash flow from investing activities for the nine months ended 31 December 2015 was an outflow of £15.4 million, reflecting Project expenditure which was capitalised as an intangible asset.

For the year ended 31 March 2015, net cash flow from investing activities was an outflow of £27.3 million, an increase of £9.3 million, or 51.6 per cent., from an outflow of £18.0 million for the year ended 31 March 2014. These amounts reflect Project development activity and consequently expenditure, which was capitalised as an intangible asset.

### 6.3.3 Net Cash Flow from Financing Activities

For the year ended 31 December 2016, net cash flow from financing activities was an inflow of £581.5 million. This represents an increase of £550.4 million when compared to annualised cash flow from financing activities for the nine months ended 31 December 2015, which would have been £31.1 million, reflecting the net cash generated by the completion of the majority of the Stage 1 Financing in November 2016, with £238.3 million received from the issuance of the 2016 Convertible Bond Offering (excluding £82.9 million in restricted held in an interest bearing escrow account for the security of bondholders) and £371.4 million from the 2016 Firm Placing and Placing and Open Offer, offset in part by costs associated therewith and the repayment of the mortgage on the Woodsmith mine (formerly known as Dove's Nest Farm).

The Company's cash flow from financing activities for the nine months ended 31 December 2015 was an inflow of £23.4 million, reflecting proceeds from the issue of Shares.

For the year ended 31 March 2015, net cash flow from financing activities was an inflow of £16.1 million, a decrease of £40.0 million, or 71.4 per cent., from an inflow of £56.1 million for the year ended 31 March 2014. These amounts principally reflect the issue of Shares in 2013 and 2014 (£44.1 million in total value) and the two tranches of the convertible loan drawn down in 2013 and 2014 as described above (£15.7 million in total value).

## 7. CAPITALISATION AND INDEBTEDNESS

The following table, sets out the capitalisation and indebtedness of the Company as at 28 February 2017:

	As at 28 February 2017  (£'000)
<b>Total Current Debt</b>	
Guaranteed .....	—
Secured .....	316,419
Unguaranteed/Unsecured .....	—
<b>Total Non-Current Debt</b>	—
Guaranteed .....	—
Secured .....	—
Unguaranteed/Unsecured .....	—
<b>Shareholders' Equity</b>	
Share Capital .....	10,412
Legal Reserve .....	590,723
Other Reserves .....	6,360
<b>Total Indebtedness .....</b>	<b>316,419</b>

	As at 28 February 2017
	<u>(£'000)</u>
Cash and cash equivalents.....	648,098
Current financial debt.....	316,419
Non-current financial debt.....	<u>—</u>
<b>Net financial indebtedness.....</b>	<b>331,679</b>

The table below shows the Company's contractual and commercial commitments to make future payments as of the date of this Prospectus.

**Notes:**

(2) Includes full repayment of the Convertible Bonds at scheduled maturity in 2023 assumed to not be converted to Shares prior to the maturity date.

In addition to the above, the Company is also a party to additional contractual or regulatory arrangements which will require it to pay third parties over future periods, but for which the timing and amounts of such payments are yet to be determined, and are contingent on the occurrence of future events. In particular:

- 132

restoration works at the mine site from the start of construction (as defined in the S106 agreements) and throughout operations. See paragraph 11.4 (“*Planning: S106 Agreements*”) of Part 12 (“*Additional Information*”) of this Prospectus.

- The Company is required to make mineral royalty payments calculated at approximately 2.5 per cent. of gross revenue per annum in aggregate. This amounts to an average of approximately US\$95 million per annum in real (actual) 2016 terms at a production level of 20 mtpa or approximately US\$4.9 billion over the life of the Project based on the Company’s current price forecasts for polyhalite. Royalty payment dates vary but are generally triggered in relation to the first date upon which any product is available for sale from the Project, prior to which option fees and lease payments are payable to landowners in order to maintain the underlying mineral rights. See paragraph 11.1 (“*Mineral Rights Agreements*”) of Part 12 (“*Additional Information*”) of this Prospectus.
- The Company has agreed to make contributions to the YPF, at a rate of 0.5 per cent. of gross revenues per annum (currently expected to be an average of US\$19.0 million per annum over the first 50 years of operations on a real (actual) 2016 basis, or approximately US\$1.0 billion in total over the same period based on the Company’s current price estimates for polyhalite) in addition to a one off payment of £2 million during construction. See paragraph 11.6.5 (“*YPF Grant Agreement*”) of Part 12 (“*Additional Information*”) of this Prospectus.
- The Company also expects to incur costs relating to the acquisition of freehold property (including land taxes but excluding associated legal fees), rent option fees, and easements, relating to land required for development of the Project. As at the date of this Prospectus, the majority of payments for land access are at the option of the Company but it is the intention of the Company to either make these payments or commit to these payments. See paragraphs 11.1 (“*Mineral Rights Agreements*”), 11.2 (“*MTS Option Agreements*”) and 11.3 (“*MHF and Harbour Facilities Option Agreements*”) of Part 12 (“*Additional Information*”) of this Prospectus.

## **9. OFF-BALANCE SHEET ARRANGEMENTS**

As of the date of this Prospectus, the Company has no off-balance sheet arrangements. As described in paragraph 8 (“*Contractual Obligations and Contingent Payments*”) of this Part 10, the Company has and will have certain contractual obligations to make future payments, some of which will in the future be presented as liabilities on its balance sheet, subject to certain conditions being met.

The amounts presented on the balance sheet as liabilities in the financial statements at any future date, will depend on amongst other things management’s accounting judgements, applicable accounting rules and any cash amounts already paid.

## **10. INDEBTEDNESS**

Following completion of the 2016 Convertible Bond Offering, Sirius Minerals Finance Limited, a wholly owned subsidiary of the Company incorporated in Jersey, has outstanding senior, unsecured US\$400 million convertible bonds due 2023. For more information see paragraph 3.3 (“*Convertible Bonds*”) of Part 12 (“*Additional Information*”) of this Prospectus.

## **11. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK**

The Company has been, and with the commencement of the Capital Funding Period and the Initial Construction Phase will increasingly be, subject to several market risks. These include capital markets risk arising from the need to acquire the Stage 2 Financing, foreign currency exchange rate risk from the Project’s capital structure, credit risk in the Company’s relationships with counterparties and interest rate risk arising from floating rate debt facilities which are expected to be a part of the Stage 2 Financing.

### **11.1 Capital Markets Risk**

While the Company anticipates that following the Capital Funding Period its working capital requirements and repayments of outstanding debt will be funded primarily by cash flow from operations, its Stage 2 Capital Funding Requirement will be sourced from one or more debt facilities. Successful completion of the Stage 2 Financing will be essential to ensure sufficient proceeds will be available to fund construction through the end of the Capital Funding Period. If, at the time the Stage 2 Financing is sought, the capital markets are volatile and liquidity is more difficult than anticipated to obtain, the Company may be forced to agree to higher than expected interest rates on its debt, resulting in increased interest expense and lower operating result. Alternatively, the Company

may be forced to raise funds via additional equity issuances, resulting in dilution of existing Shareholders. While it finds alternative funding sources, the Company may also be compelled to delay elements of Project construction which would delay the expected time at which the Project is anticipated to achieve operating profitability.

The Company plans to mitigate its capital markets risk by approaching its Stage 2 Financing conservatively and has mandated the Mandated Lead Arrangers to arrange the senior debt facilities. The Company views bank lending for commercial project finance to be more reliable than other financing options such as a high yield bond. The Company is also confident that the Project's likely significant contribution to the economy of the United Kingdom will incentivise investment.

### 11.2 Foreign Currency Exchange Rate Risk

The Company's presentation currency is pounds sterling. Transactions denominated in currencies other than pounds sterling are translated into pounds sterling at the rate of exchange ruling at the date of the transaction. At the balance sheet date, monetary assets and liabilities denominated in currencies other than pounds sterling are translated at the rate prevailing at that date. All exchange differences are charged or credited to the income statement as appropriate. On consolidation, the assets and liabilities of foreign operations which have a functional currency other than pounds sterling, are translated into pounds sterling at foreign exchange rates ruling at the balance sheet date. The revenues and expenses of these subsidiaries are translated into pounds sterling at average rates for the year. All exchange differences are recognised within the balance sheet under equity.

Historically, the Company has raised funds in pounds sterling and the considerable majority of its expenditure has been in pounds sterling, and as a result foreign currency exchange rate risk had little impact on the Company's results through the completion of Stage 1 Financing. However as a result of the Stage 1 Financing, the Company recognised significant assets and liabilities in its financial statements as at 31 December 2016, in U.S. dollars as well as pounds sterling, as summarised in the table below. These included assets of £358.4 million in pounds sterling and £306.9 million equivalent in U.S. dollars, in a combination of cash or cash equivalents or other instant access deposits, and liabilities of £321.4 million equivalent in U.S. dollars relating to the notes offered by 2016 Convertible Bond Offering. Together the amounts of U.S. dollar and pound sterling assets and liabilities account for over 80 per cent. of the Company's total assets and over 98 per cent. of the Company's total liabilities.

As at 31 December 2016						
	Cash and cash equivalents <sup>(1)</sup>	Bank deposits <sup>(2)</sup>	Restricted cash <sup>(3)</sup>	Derivative asset	Convertible loan	Total
	(£ '000)					
Pounds sterling.....	158,262	200,095	—	—	—	358,357
Euros.....	28	—	—	—	—	28
U.S. dollars.....	101,852	122,093	82,924	1,041	(321,366)	(13,457)
Canadian dollars.....	5	—	—	—	—	5
Australian dollars.....	11	—	—	—	—	11
<b>Total.....</b>	<b>260,157</b>	<b>322,188</b>	<b>82,924</b>	<b>1,041</b>	<b>(321,366)</b>	<b>344,944</b>

#### Notes:

(1) Includes money market fund investments and instant access deposits.

(2) Includes multiple term and notice bank deposits held at several highly rated banks at multiple different interest rates (generally fixed rate) and with varying maturities, up to a maximum of twelve months.

(3) Includes amount the Company is required to set aside in an escrow bank account (in respect of all coupon payments due until 28 November 2019 in respect of the 2016 Convertible Bond Offering).

Although the Company has not historically had any formal hedging arrangements in place to manage its exposure to fluctuations in the value of foreign currencies, the Company periodically reviews the need for more formal hedging arrangements to manage its foreign exchange risk. The Company expects to consider formal hedging arrangements only once it is committed to obligations with significant foreign exchange exposures, for example, via signed construction contracts which commit the Company to incur capital expenditures in certain currencies.

The Company anticipates raising significant funds in U.S. dollars during the Capital Funding Period, which it will hold in cash or cash equivalent instruments to permit ease of distribution to satisfy

Project construction costs. The Company's holdings in U.S. dollars will expose the Company to foreign exchange translation effects (as amounts it holds in U.S. dollars will need to be translated to pounds sterling for purposes of preparing its financial statements), and their associated tax impact, as the relevant exchange rates fluctuate over time. In particular, if the value of the U.S. dollar in relation to the value of the pound sterling were to significantly deteriorate during the period when the Company is holding significant cash or cash equivalent instruments in U.S. dollars, the Company could be required to recognise significant non-cash changes on its income statement and the value of its balance sheet assets could significantly decline. In addition, to the extent the Company enters into hedging arrangements in the future, it may also be exposed to a negative impact on its reported profit before tax in any given period, based on movements of the U.S. dollar as compared to the pound sterling and may also result in the Company needing to amend its funding plans to raise more or less capital, resulting in a corresponding increase or decrease in interest costs, an increase in equity dilution or surplus liquidity at the end of the Capital Funding Period.

Once first commercial production has commenced, substantially all of the Company's revenues from sales of POLY4 are expected to be denominated in U.S. dollars, and while the Company intends to arrange long term debt denominated in U.S. dollars, a substantial majority of the Company's operating expenses, such as labour and consumables such as electricity, will be denominated in pounds sterling. Accordingly, it is anticipated that fluctuations in the value of the pound sterling compared to the U.S. dollar will impact the results of operations of the Company. Over the long term, appreciation of the pound sterling versus the U.S. dollar, without offsetting improvement in POLY4 prices, would adversely affect the Company's profitability, while depreciation of the pound sterling against the U.S. dollar would have a positive impact on the Company's profitability. See paragraph 2.3 (*"The Company's profitability will be exposed to exchange rate risk, particularly between pounds sterling and U.S. dollars"*) of this Part 10.

### **11.3 Credit Risk**

As of the date of this Prospectus, the Company's primary credit exposure is the substantial amount of cash it is necessary for it to hold on deposit – principally its cash and cash equivalents and other bank deposits – in order to fund the construction process. The carrying amount of financial assets represents the maximum aggregate credit exposure, which as at 31 December 2016 amounted to £666.7 million, compared to £29.9 million as at 31 December 2015 and £27.4 million as at 31 March 2015. The variance is attributable to the completion of Stage 1 Financing in November 2016.

In accordance with the Company's conservative approach to credit risk, its existing policies mandate appropriate credit checks of counterparties, set out single counterparty exposure limits, and require diversification in order to mitigate credit exposures. Thus, its deposits are held at several highly rated banks, are subject to different interest rates and have varying maturities, none of which is longer than 12 months.

Similarly, in the Initial Construction Phase and going forward through the life of the Project, the Company will also be exposed to certain credit risks via its exposure to contractors and commercial counterparties, but has policies in place to ensure it is protected by appropriate contractual arrangements.

The Company believes that it has structured its Offtake Agreements to minimise exposure to customer counterparties' credit risk. Moreover, the Company has intentionally diversified the geographies and categories of customers with which it has signed agreements, thereby helping to mitigate the impact of any breach by a single customer or type of customer. Finally, the Company is freely able to sell any product not ultimately purchased by one counterparty to any number of others, given that, by its nature, POLY4 is fungible as between customers.

### **11.4 Interest Rate Risk**

As at 31 December 2016, the Company's interest bearing assets included (1) £82.9 million held in an interest bearing escrow account not available for general use (equivalent to US\$102 million) in respect of all coupon payments due until 28 November 2019 in respect of the 2016 Convertible Bond Offering), (2) £260.2 million of cash and cash equivalents held in instant access deposits and (3) £322.2 million of term and notice bank deposits, classified as held to maturity financial instruments. These investments are diversified in multiple highly rated banks and money market funds with different interest rates (generally fixed rate) and with varying maturities up to a maximum of twelve months.

The impact of a movement of 5 per cent. in the rate of interest on the Company's cash and cash equivalents would have had no material impact on the Company's results and financial positions as at 31 December 2016 and 31 December 2015 and 31 March 2014.

The Company's borrowings as at 31 December 2016 were £321.4 million, compared to £0.7 million as at 31 December 2015 and £2.0 million as at 31 March 2015. This increase is primarily attributable to net proceeds received from the 2016 Convertible Bond Offering. The carrying value of the bond offering is equal to the 8.5 per cent. coupon payable quarterly. See paragraph 3.3 ("*Convertible Bonds*") of Part 12 ("*Additional Information*") of this Prospectus for further details of the key terms of the Convertible Bonds.

Going forward, the Company's cash position is expected to fluctuate throughout the Initial Construction Phase but generally to be substantially higher than it has been historically. The Stage 1 Financing did not include any floating rate debt. However, the Stage 2 Financing is likely to be on a floating rate basis and it is unlikely that all of that interest rate exposure will be hedged through formal instruments. As such, interest rate fluctuations will potentially have a larger impact on the Company's results than that seen to date. Interest rate changes may also have an impact on the ultimate size of the debt incurred in the Stage 2 Financing and in the long-term ability of the Company to service and pay down that debt. As with foreign exchange hedges, the Company does not currently have formal hedging instruments in place, but may choose to do so in the future.

## **12. CRITICAL ACCOUNTING POLICES AND ESTIMATES**

The Company's discussion and analysis of its financial condition and results of operations are based on its consolidated financial information, which has been prepared in accordance with IFRS as adopted by the EU. The preparation of this financial information requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities in the Company's financial information. On an ongoing basis, the Company evaluates its estimates and judgments. The Company bases its estimates on historical experience, known trends and events and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. The Company believes the following accounting policies to be most critical to the judgements and estimates used in the preparation of its consolidated financial information. For further information, see note 1 within each set of accounts comprised within the consolidated financial information included in Part 11 ("*Historical Financial Information*") of this Prospectus.

### **12.1 Exploration and Evaluation Assets**

Costs arising from exploration and evaluation activities, engineering design, land access, consents, product development and the agronomy programme and the associated direct costs, such as staff costs, are accumulated separately for each area of the Project and only capitalised where such costs are expected to be recouped through successful development. Capitalised expenditure is written off in the income statement when the above criteria do not apply or when the Directors assess that the carrying value may exceed the recoverable amount.

Once production commences, capitalised expenditure in respect of an area of interest will be amortised on a unit of production basis by reference to the Ore Reserves of that area of interest. Amortisation of all classes of intangible assets will be included within administrative expenses in the consolidated income statement.

At each reporting date, the Company assesses whether there is any indication that an asset may be impaired. Where an indication of impairment exists, the Company makes a formal estimate of the recoverable amount. Where the carrying amount of an asset exceeds its recoverable amount the asset is considered impaired and written down to its recoverable amount.

Recoverable amount is the greater of the fair value less costs to sell and value in use. It is determined for an individual asset unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets, in which case the recoverable amount is determined for the cash-generating unit to which the asset belongs. Estimates and judgments are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.



## ***12.2 Property, Plant and Equipment***

Property, plant and equipment are all stated at cost less depreciation less any recognised impairment losses. Cost includes expenditure that is directly attributable to the acquisition or construction of those items. Subsequent costs are included in the asset's carrying amount only when it is probable that future economic benefits associated with the item will flow to the Company and the costs can be measured reliably. All other costs, including repairs and maintenance costs are charged to the income statement in the period in which they are incurred. Depreciation is provided on all plant and equipment and is calculated on a straight line basis to allocate cost over the useful life of the asset, estimated as three years for computer equipment, fixtures and furniture and plant and machinery, as five years for motor vehicles, and for any leasehold improvements, as the period of the lease. The depreciation treatment applied to plant, machinery and equipment related to construction on the Project will be defined at the time each relevant item is added to the Project. Freehold land is not depreciated. Residual value and remaining useful life are reviewed and adjusted as appropriate at each balance sheet date. Gains or losses arising on disposals are determined by comparing the proceeds with the carrying asset amount and are recognised within the appropriate area in the income statement.

## ***12.3 Goodwill***

The Company tests annually whether goodwill has suffered any impairment, in accordance with the accounting policy. The recoverable amounts of cash-generated units will be determined based on value-in-use calculations. These calculations will require the use of estimates.

## ***12.4 Share-based Payments***

The Company has applied the requirements of IFRS 2: "Share-Based Payments". The Company issues equity settled share-based payments to certain directors, senior managers, employees and consultants. Equity settled share-based payments are measured at fair value (excluding the effect of non-market based vesting conditions) at the date of grant. The fair value determined at the grant date of the equity settled share-based payments is expensed on a straight line basis over the vesting period, based on the Company's estimate of shares that will eventually vest and adjusted for the effect of non-market based vesting conditions.

The grant by the Company of options over its equity instruments to the employees of subsidiary undertakings in the Company is treated as a capital contribution. The fair value of employee services received, measured by reference to the grant date fair value, is recognised over the vesting period as an increase to the investment in subsidiary undertakings, with a corresponding credit to equity. At each reporting date, the Company revises its estimates of the number of options that are expected to vest. It recognises the impact of the revision to original estimates, if any, in the income statement, with a corresponding adjustment to equity.

In determining the fair value of equity settled share-based payments and the related charge to the income statement, the Company makes assumptions about future events and market conditions. In particular, judgment must be made as to the likely number of shares that will vest and the fair value of each award granted. The fair value is determined using a valuation model which depends on further estimates, including the Company's future dividend policy, the timing with which options will be exercised and the future volatility in the price of similar companies. Such assumptions are based on publicly available information and reflect market expectations and advice taken from qualified personnel. Different assumptions about these factors to those made by the Company could materially affect the reported value of share-based payments.

## PART 11

### HISTORICAL FINANCIAL INFORMATION

*The financial information presented in this Part 11 has been prepared in accordance with IFRS. The Group's consolidated financial statements as at and for the year ended 31 December 2016 are presented on an audited basis and have been extracted without material adjustment from the audited accounts of the Group.*

#### Section A

##### Information incorporated by reference

The Existing Prospectus, which has been filed with the FCA and is available for inspection in accordance with paragraph 23 of Part 12 (“*Additional Information*”) of this Prospectus, contains financial information which is incorporated by reference into this Prospectus.

The tables below set out the various sections of the Existing Prospectus which are incorporated by reference into, and form part of, this Prospectus so as to provide certain information required pursuant to the Prospectus Rules, and only the parts of the documents identified in the tables below are incorporated into, and form part of, this Prospectus. To the extent that any part of any information referred to below itself contains information which is incorporated by reference, such information shall not form part of this Prospectus.

<b>Information in the Existing Prospectus incorporated by reference into this Prospectus</b>	<b>Page number in Existing Prospectus</b>
<b>For the nine month period ended 31 December 2015</b>	
Independent Auditors' Report to the Members of Sirius Minerals Plc Report on the Financial Statements	207
Consolidated Income Statement	209
Consolidated Statement of Comprehensive Income	210
Consolidated Statement of Financial Position	211
Consolidated Statement of Changes in Equity	212
Consolidated Statement of Cash Flows	213
Company Statement of Financial Position	214
Company Statement of Changes in Equity	215
Company Statement of Cash Flows	216
Notes to the Financial Statements	217 – 241
<b>For the year ended 31 March 2015</b>	
Independent Auditors' Report to the Members of Sirius Minerals Plc Report on the Financial Statements	242
Consolidated Income Statement	245
Consolidated Statement of Comprehensive Income	246
Consolidated Statement of Financial Position	247
Consolidated Statement of Changes in Equity	248
Consolidated Statement of Cash Flows	249
Company Statement of Financial Position	250
Company Statement of Changes in Equity	251
Company Statement of Cash Flows	252
Notes to the Financial Statements	253 – 280
<b>For the year ended 31 March 2014</b>	
Independent Auditors' Report to the Members of Sirius Minerals Plc Report on the Financial Statements	281
Consolidated Income Statement	283
Consolidated Statement of Comprehensive Income	284
Consolidated Statement of Financial Position	285

<b>Information in the Existing Prospectus incorporated by reference into this Prospectus</b>	<b>Page number in Existing Prospectus</b>
Consolidated Statement of Changes in Equity	286
Consolidated Statement of Cash Flows	287
Company Statement of Financial Position	288
Company Statement of Changes in Equity	289
Company Statement of Cash Flows	290
Notes to the Financial Statements	291 – 318

## **Section B**

### **Audited consolidated financial statements as at and for the year ended 31 December 2016**

#### **INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF SIRIUS MINERALS PLC REPORT ON THE FINANCIAL STATEMENTS**

##### **Our opinion**

In our opinion:

Sirius Minerals Plc's Group financial statements and Company financial statements (the "financial statements") give a true and fair view of the state of the Group's and of the Company's affairs as at 31 December 2016 and of the Group's loss and the Group's and the Company's cash flows for the year then ended;

The Group financial statements have been properly prepared in accordance with International Financial Reporting Standards ("IFRSs") as adopted by the European Union;

The Company financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union and as applied in accordance with the provisions of the Companies Act 2006; and

The financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

##### **What we have audited**

The financial statements, included within the Annual Report, comprise:

The consolidated and Company statements of financial position as at 31 December 2016;

The consolidated income statement and consolidated statement of comprehensive income for the year then ended;

The consolidated and Company statements of cash flows for the year then ended;

The consolidated and Company statements of changes in equity for the year then ended; and

The notes to the financial statements, which include a summary of significant accounting policies and other explanatory information.

The financial reporting framework that has been applied in the preparation of the financial statements is IFRSs as adopted by the European Union and, as regards the Company financial statements, as applied in accordance with the provisions of the Companies Act 2006, and applicable law.

In applying the financial reporting framework, the directors have made a number of subjective judgements, for example in respect of significant accounting estimates. In making such estimates, they have made assumptions and considered future events.

##### **OPINIONS ON OTHER MATTERS PRESCRIBED BY THE COMPANIES ACT 2006**

In our opinion, based on the work undertaken in the course of the audit:

The information given in the Strategic Report and the Directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and

The *Strategic report* and the *Directors' report* have been prepared in accordance with applicable legal requirements.

In addition, in light of the knowledge and understanding of the Group, the Company and their environment obtained in the course of the audit, we are required to report if we have identified any material misstatements in the Strategic report and the Directors' report. We have nothing to report in this respect.

##### **OTHER MATTERS ON WHICH WE ARE REQUIRED TO REPORT BY EXCEPTION**

###### **Adequacy of accounting records and information and explanations received**

Under the Companies Act 2006 we are required to report to you if, in our opinion:

We have not received all the information and explanations we require for our audit; or

Adequate accounting records have not been kept by the Company, or returns adequate for our audit have not been received from branches not visited by us; or

The Company financial statements are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

### **Directors' remuneration**

Under the Companies Act 2006 we are required to report to you if, in our opinion, certain disclosures of directors' remuneration specified by law are not made. We have no exceptions to report arising from this responsibility.

## **RESPONSIBILITIES FOR THE FINANCIAL STATEMENTS AND THE AUDIT**

### **Our responsibilities and those of the directors**

As explained more fully in the Statement of directors' responsibilities, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view.

Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland) ("ISAs (UK & Ireland)"). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors.

This report, including the opinions, has been prepared for and only for the Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

### **What an audit of financial statements involves**

We conducted our audit in accordance with ISAs (UK & Ireland). An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of:

- Whether the accounting policies are appropriate to the Group's and the Company's circumstances and have been consistently applied and adequately disclosed;

- The reasonableness of significant accounting estimates made by the directors; and

- The overall presentation of the financial statements.

We primarily focus our work in these areas by assessing the directors' judgements against available evidence, forming our own judgements, and evaluating the disclosures in the financial statements.

We test and examine information, using sampling and other auditing techniques, to the extent we consider necessary to provide a reasonable basis for us to draw conclusions. We obtain audit evidence through testing the effectiveness of controls, substantive procedures or a combination of both.

In addition, we read all the financial and non-financial information in the annual report to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report. With respect to the *Strategic report* and *Directors' report*, we consider whether those reports include the disclosures required by applicable legal requirements.

**Ian Morrison** (*Senior Statutory Auditor*)

for and on behalf of PricewaterhouseCoopers LLP

Chartered Accountants and Statutory Auditors

Leeds

24 March 2017

## CONSOLIDATED INCOME STATEMENT

for the year ended 31 December 2016

		31 December 2016	Nine-month period to 31 December 2015
	Note	£000s	£000s
<b>Revenue</b> .....		—	—
Administrative expenses.....	4	(11,872)	(7,422)
<b>Operating loss</b> .....		<b>(11,872)</b>	<b>(7,422)</b>
Finance income.....	5	1,489	99
Finance costs.....	6	(13,039)	(186)
<b>Loss before taxation</b> .....		<b>(23,422)</b>	<b>(7,509)</b>
Taxation.....	8	468	550
<b>Loss for the financial year</b> .....		<b>(22,954)</b>	<b>(6,959)</b>
<b>Loss per share:</b>			
Basic and diluted .....	9	(0.9p)	(0.3p)

## CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

for the year ended 31 December 2016

	31 December 2016	Nine-month period to 31 December 2015
	£000s	£000s
Loss for the financial year attributable to owners of the parent .....	(22,954)	(6,959)
<b>Other comprehensive income/(loss) for the year</b>		
Exchange differences on translating foreign operations.....	18	(135)
<b>Other comprehensive income/(loss) for the year</b> .....	18	(135)
<b>Total comprehensive loss for the year</b> .....	<b>(22,936)</b>	<b>(7,094)</b>

Total comprehensive loss shown above is fully attributable to equity shareholders of the parent in both years.

# **CONSOLIDATED STATEMENT OF FINANCIAL POSITION**

as at 31 December 2016

	Note	As at 31 December 2016 £000s	As at 31 December 2015 restated £000s
<b>ASSETS</b>			
<b>Non-current assets</b>			
Property, plant and equipment .....	10	6,138	1,849
Intangible assets .....	11	150,204	137,970
Restricted cash .....	16	55,283	—
<b>Total non-current assets .....</b>		<b>211,625</b>	<b>139,819</b>
<b>Current assets</b>			
Derivative financial instrument .....	23	1,041	—
Restricted cash .....	16	27,641	—
Other receivables .....	13	840	1,184
Bank deposits .....	25	322,188	—
Cash and cash equivalents .....	15	260,157	29,093
<b>Total current assets .....</b>		<b>611,867</b>	<b>30,277</b>
<b>TOTAL ASSETS .....</b>		<b>823,492</b>	<b>170,096</b>
<b>EQUITY AND LIABILITIES</b>			
<b>Equity</b>			
Share capital .....	18	10,412	5,737
Share premium account .....		590,723	240,874
Share-based payment reserve .....	17	6,114	7,624
Accumulated losses .....		(112,261)	(90,339)
Foreign exchange reserve .....		1,284	1,266
<b>Total equity .....</b>		<b>496,272</b>	<b>165,162</b>
<b>Current liabilities</b>			
Convertible loan .....	16	321,366	—
Loan from third parties .....	16	—	748
Trade and other payables .....	19	5,854	4,186
<b>Total liabilities .....</b>		<b>327,220</b>	<b>4,934</b>
<b>TOTAL EQUITY AND LIABILITIES .....</b>		<b>823,492</b>	<b>170,096</b>

**Thomas Staley**  
**Chief Financial Officer**

Company registration number: 04948435

## CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

for the year ended 31 December 2016

	Note	Share capital	Share premium account	Share-based payments reserve	Accumulated losses	Foreign exchange reserve	Equity shareholders' funds
		£000s	£000s	£000s	£000s	£000s	£000s
<b>At 1 April 2015 .....</b>		<b>5,362</b>	<b>216,586</b>	<b>13,290</b>	<b>(95,630)</b>	<b>7,028</b>	<b>146,636</b>
Foreign exchange reserve prior period adjustment..		—	—	—	5,627	(5,627)	—
<b>At 1 April 2015- Restated</b>		<b>5,362</b>	<b>216,586</b>	<b>13,290</b>	<b>(90,003)</b>	<b>1,401</b>	<b>146,636</b>
Loss for the period .....		—	—	—	(6,959)	—	(6,959)
Foreign exchange differences on translation of foreign operations .....		—	—	—	—	(135)	(135)
Total comprehensive loss for the period .....		—	—	—	(6,959)	(135)	(7,094)
Convertible loan .....		43	1,103	—	258	—	1,404
Share issue costs .....	18	—	(121)	—	—	—	(121)
Share-based payments ....	17	—	—	(5,666)	6,365	—	699
Exercised options .....	18	332	23,306	—	—	—	23,638
<b>At 31 December 2015- Restated .....</b>		<b>5,737</b>	<b>240,874</b>	<b>7,624</b>	<b>(90,339)</b>	<b>1,266</b>	<b>165,162</b>
Loss for the financial period .....		—	—	—	(22,954)	—	(22,954)
Foreign exchange differences on translation of foreign operations .....		—	—	—	—	18	18
Total comprehensive loss for the period .....		—	—	—	(22,954)	18	(22,936)
Share issue .....	18	4,629	347,281	—	—	—	351,910
Share-based payments ....	17	32	1,418	(1,510)	1,032	—	972
Exercised options .....	18	14	1,150	—	—	—	1,164
<b>At 31 December 2016 .....</b>		<b>10,412</b>	<b>590,723</b>	<b>6,114</b>	<b>(112,261)</b>	<b>1,284</b>	<b>496,272</b>

The share premium account is used to record the excess proceeds over nominal value on the issue of shares.

The share-based payment reserve is used to record the share-based payments made by the Group.

Foreign exchange reserve records exchange differences which arise on translation of foreign operations with a functional currency other than Sterling.



# **CONSOLIDATED STATEMENT OF CASH FLOWS**

for the year ended 31 December 2016

		<b>31 December 2016</b>	<b>Nine-month period to 31 December 2015</b>
	<b>Note</b>	<b>£000s</b>	<b>£000s</b>
<b>Cash outflow from operating activities</b> .....	20	<b>(15,896)</b>	<b>(5,307)</b>
<b>Cash flow from investing activities</b>			
Purchase of intangible assets .....		(12,108)	(15,533)
Purchase of property, plant and equipment .....		(4,346)	(1)
Purchases of bank deposits .....		(320,187)	—
Interest received .....		441	99
		—	—
<b>Net cash used in investing activities</b> .....		<b>(336,200)</b>	<b>(15,435)</b>
<b>Cash flow from financing activities</b>			
Repayment of borrowings .....		(748)	—
Proceeds from convertible loan .....		319,923	—
Purchases of restricted cash .....		(81,580)	—
Proceeds from issue of shares .....		371,445	23,637
Share issue costs .....		(18,370)	(121)
Convertible loan issue costs .....		(9,158)	—
Interest paid .....		(19)	(186)
<b>Net cash generated from financing activities</b> .....		<b>581,493</b>	<b>23,330</b>
Net (decrease)/increase in cash and cash equivalents .....		229,397	2,588
Cash and cash equivalents at the beginning of the year ....		29,093	26,640
Gain/(loss) from foreign exchange .....		1,667	(135)
<b>Cash and cash equivalents at end of the year</b> .....		<b>260,157</b>	<b>29,093</b>

# COMPANY STATEMENT OF FINANCIAL POSITION

as at 31 December 2016

	Note	As at 31 December 2016 £000s	As at 31 December 2015 £000s
<b>ASSETS</b>			
<b>Non-current assets</b>			
Property, plant and equipment .....	10	2	—
Intangible assets .....	11	—	—
Investments in subsidiaries .....	12	81,803	81,612
Restricted cash .....	16	55,283	—
<b>Total non-current assets .....</b>		<b>137,088</b>	<b>81,612</b>
<b>Current assets</b>			
Derivative financial instrument .....	23	1,041	—
Restricted cash .....	16	27,641	—
Other receivables .....	13	330	152
Loans to subsidiaries .....	14	90,078	67,975
Bank deposits .....	25	322,188	—
Cash and cash equivalents .....	15	258,493	25,665
<b>Total current assets .....</b>		<b>699,771</b>	<b>93,792</b>
<b>TOTAL ASSETS .....</b>		<b>836,859</b>	<b>175,404</b>
<b>EQUITY AND LIABILITIES</b>			
<b>Equity</b>			
Share capital .....	18	10,412	5,737
Share premium account .....		590,723	240,874
Share-based payment reserve .....	17	6,114	7,624
Accumulated losses .....		(186,601)	(80,037)
<b>Total equity .....</b>		<b>420,648</b>	<b>174,198</b>
<b>Current liabilities</b>			
Convertible loan .....	16	42,433	—
Loans from subsidiaries .....	14	370,252	—
Trade and other payables .....	19	3,526	1,206
<b>Total liabilities .....</b>		<b>416,211</b>	<b>1,206</b>
<b>TOTAL EQUITY AND LIABILITIES .....</b>		<b>836,859</b>	<b>175,404</b>

The financial statements on pages 50 to 90 were issued and approved by the board of directors on 24 March 2017 and signed on its behalf by:

**Thomas Staley**  
**Chief Financial Officer**

Company registration number: 04948435

# COMPANY STATEMENT OF CHANGES IN EQUITY

for the year ended 31 December 2016

	Note	Share capital	Share premium account	Share-based payments reserve	Accumulated losses	Equity shareholders' funds
		£000s	£000s	£000s	£000s	£000s
<b>At 1 April 2015</b> .....		<b>5,362</b>	<b>216,586</b>	<b>13,290</b>	<b>(83,055)</b>	<b>152,183</b>
Loss for the period .....		—	—	—	(3,604)	(3,604)
Convertible loan .....		44	1,103	—	257	1,404
Share issue .....		—	—	—	—	—
Share issue costs .....	18	—	(121)	—	—	(121)
Share-based payments .....	17	—	—	(5,666)	6,365	699
Exercised options .....	18	331	23,306	—	—	23,637
<b>At 31 December 2015</b> .....		<b>5,737</b>	<b>240,874</b>	<b>7,624</b>	<b>(80,037)</b>	<b>174,198</b>
Loss for the financial period .....		—	—	—	(107,596)	(107,596)
Share issue .....	18	4,629	347,281	—	—	351,910
Share-based payments .....	17	32	1,418	(1,510)	1,032	972
Exercised options .....	18	14	1,150	—	—	1,164
<b>At 31 December 2016</b> .....		<b>10,412</b>	<b>590,723</b>	<b>6,114</b>	<b>(186,601)</b>	<b>420,648</b>

The share premium account is used to record the excess proceeds over nominal value on the issue of shares.

The share-based payment reserve is used to record the share-based payments made by the Company.

# COMPANY STATEMENT OF CASH FLOWS

for the year ended 31 December 2016

		31 December 2016	Nine-month period to 31 December 2015
	Note	£000s	£000s
<b>Cash outflow from operating activities</b> .....	20	<b>(9,200)</b>	<b>(1,742)</b>
<b>Cash flow from investing activities</b>			
Purchase of intangible assets .....		—	—
Purchase of property, plant and equipment .....		(2)	—
Investments in subsidiary companies.....		—	(517)
Loans to subsidiary companies.....		(22,103)	(6,298)
Purchases of bank deposits.....		(320,212)	—
Interest received .....		439	—
<b>Net cash used in investing activities</b> .....		<b>(341,878)</b>	<b>(6,815)</b>
<b>Cash flow from financing activities</b>			
Proceeds from issue of shares.....		<b>371,445</b>	<b>23,637</b>
Share issue costs .....		(18,370)	(121)
Convertible loan issue costs.....		(9,158)	—
Loans from subsidiary companies .....		319,923	—
Purchase of restricted cash .....		(81,580)	—
Interest paid .....		—	(116)
<b>Net cash generated from financing activities</b> .....		<b>582,260</b>	<b>23,400</b>
Net increase in cash and cash equivalents.....		231,182	14,843
Cash and cash equivalents at the beginning of the year ....		25,665	10,822
Gain from foreign exchange .....		1,646	—
<b>Cash and cash equivalents at end of the year</b> .....		<b>258,493</b>	<b>25,665</b>

## **NOTES TO THE FINANCIAL STATEMENTS**

### **1. ACCOUNTING POLICIES**

#### **BASIS OF PREPARATION**

The financial statements of Sirius Minerals Plc (the Company) and its subsidiaries (the Group) have been prepared in accordance with International Financial Reporting Standards (IFRS) and IFRS IC Interpretations as adopted by the European Union (EU) and the Companies Act 2006 applicable to companies reporting under IFRS.

IFRS is subject to amendment and interpretation by the International Accounting Standards Board (IASB) and the International Financial Reporting Standards Interpretations Committee (IFRS IC) and there is an ongoing process of review and endorsement by the European Commission. The financial statements have been prepared on the basis of the recognition and measurement principles of IFRS that were applicable at 31 December 2016.

The consolidated financial statements for the period ended 31 December 2015 have been restated to reflect a prior year adjustment in respect of the recycling of foreign exchange reserves through accumulated losses. See page 11 for further details.

The preparation of financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Company's accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed in note 2.

The financial statements have been prepared under the historical cost convention, as modified by financial assets and financial liabilities (including derivatives) stated at fair value through profit or loss. The principal accounting policies set out below have been consistently applied to all periods presented.

The Company is a public limited company which is incorporated and domiciled in the UK. The address of its registered office is shown on page 95.

#### **GOING CONCERN**

During the year the Group recognised a total comprehensive loss of £22,936,000 compared to a loss of £7,094,000 for the nine-month period to 31 December 2015.

Cash and cash equivalents and bank deposits, which include cash held on deposit, as at 31 December 2016 were £582,345,000 compared to £29,093,000 as at 31 December 2015. Restricted cash, which is held to cover interest payments, as at 31 December 2016 was £82,924,000 compared to £nil as at 31 December 2015. Net assets have increased by £331,110,000 to £496,272,000. The increase in cash and cash equivalents and net assets is principally due to the successful completion of the Group's stage 1 financing in late November 2016. As a result of this fundraising, the Group is now able to commence significant development work on its polyhalite project in North Yorkshire (the 'Project') with latest cash flow forecasts indicating that the Group has sufficient assets to meet its planned liabilities as they fall due until 2019.

The Group has publicly announced its intention to conduct stage 2 of fund-raising in 2018 in order to raise sufficient further funds to complete development of the Project and reach first commercial production which will ultimately allow the Group to generate sufficient cash to sustain itself as a going concern for the foreseeable future. The directors are confident of a positive outcome to the stage 2 financing negotiations and have mandated a group of six financial institutions on the basis of a non-binding but mutually agreed term sheet. At the same time, the Infrastructure and Projects Authority (formally IUK) confirmed its interest in supporting the stage 2 financing for the Project.

Having assessed the principal risks and having regard for the above, the directors consider it appropriate to adopt the going concern basis of accounting in preparing its consolidated financial statements.

#### **NEW AND AMENDED STANDARDS ADOPTED BY THE GROUP**

There are no new standards, amendments to standards or interpretations that are effective for the first time for the financial year beginning after 1 January 2016 that have had a material impact on the Group or Company.

New standards, amendments to standards and interpretations not yet adopted – a number of new standards and amendments to standards and interpretations are effective for annual periods beginning after 1 January 2016, and have not been applied in preparing these consolidated financial statements. None of these are expected to have a significant effect on the consolidated financial statements of the Group or Company.

**IFRS 9 “Financial Instruments”** – IFRS 9 includes requirements for classification and measurement, impairment and hedge accounting. This standard replaces the classification and measurement models for financial instruments in IAS 39 with three classification categories: amortised cost, fair value through profit or loss and fair value through other comprehensive income. The standard is expected to become effective for periods ending on or after 1 January 2018. However, the Group is in the process of assessing the impact of this standard given the lack of complex financial instruments held by the Group and Company. This is not expected to have a material impact on the Group or Company.

**IFRS 15 “Revenue from Contracts”** – IFRS 15 deals with revenue recognition and establishes principles for reporting useful information to users of financial statements about the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity’s contracts with customers. The standard replaces IAS 18 “Revenue” and IAS 11 “Construction contracts” and related interpretations. The standard is effective for annual periods beginning on or after 1 January 2018, with earlier application permitted. Given that the Group has not yet recognised revenue and is not due to make their first commercial until after the effective date of the standard this is not expected to have a material impact on the Group or Company.

**IFRS 16 “Leases”** – IFRS 16 will require lessees to recognise a lease liability reflecting future lease payments and a “right-of use asset” for virtually all lease contracts. Under IAS 17, lessees are required to make a distinction between a finance lease (on balance sheet) and an operating lease (off balance sheet). The IASB has included an optional exemption for certain short term leases and leases of low value assets. However, this exemption can only be applied by lessees. The standard is effective for annual periods beginning on or after 1 January 2019. At this stage the Group and Company are not able to fully estimate the impact of the new rules on the Group’s and Company’s financial statements though it is not expected to have a material impact on the Group or Company. The Group will continue to perform a detailed assessment of the impact over the next twelve months.

## **PRIOR YEAR ADJUSTMENT**

A prior year adjustment has been made to foreign exchange reserves totalling £5,627,000, which have been recycled through accumulated losses. These relate to overseas subsidiaries that had been liquidated during the year ended 31 March 2015. The comparative period reserves have been restated to show this adjustment. See the *Consolidated statement of changes in equity for this restatement*.

## **BASIS OF CONSOLIDATION**

The Group’s consolidated financial statements incorporate the financial statements of the Company and entities controlled by the Company (its subsidiaries) for the year ended 31 December 2016. Control is achieved where the Company has power to govern the financial and operating policies of an investee entity so as to obtain benefits from its activities.

The results of the subsidiaries acquired or disposed of during the year are included in the consolidated income statement from the effective date of acquisition or up to the effective date of disposal, as appropriate.

Where necessary, adjustments are made to the financial statements of subsidiaries to bring the accounting policies used into line with those used by the Group.

All intra-group transactions, balances and any unrealised gains and losses arising from intra-group transactions are eliminated in preparing the consolidated financial statements.

As a consolidated income statement is published, a separate income statement for the parent Company is omitted from the Group financial statements by virtue of section 408 of the Companies Act 2006. The loss for the Company for the year was £107,596,000 (December 2015: £3,604,000).

## **BUSINESS COMBINATIONS AND GOODWILL**

On acquisition, the assets and liabilities and contingent liabilities of subsidiaries are measured at their fair values at the date of acquisition. Any acquisition costs are expensed as incurred. Any excess of cost of acquisition over the fair value of identifiable net assets acquired is recognised as goodwill.

Any deficiency of the cost of acquisition below the fair values of the identifiable net assets acquired (i.e. discount on acquisition) is credited to the income statement in the period of acquisition. Goodwill arising on consolidation is recognised as an asset and allocated to cash generating units for the purpose of impairment testing, and the allocation is made to those cash generating units or groups of cash generating units that are expected to benefit from the business combination in which the goodwill arose. Any goodwill recognised is stated at cost less accumulated impairment and any impairment is recognised immediately in the income statement and is not subsequently reversed.

## SEGMENT REPORTING

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision maker as required by IFRS 8 'Operating Segments'. The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the board of directors.

The accounting policies of the reportable segments are consistent with the accounting policies of the Group as a whole. Segment loss represents the loss incurred by each segment without allocation of foreign exchange gains or losses, interest payable and tax. This is the measure of loss that is reported to the board of directors for the purpose of resource allocation and the assessment of segment performance.

When assessing segment performance and considering the allocation of resources, the board of directors review information about segment assets and liabilities. For this purpose, all assets and liabilities are allocated to reportable segments with the exception of the assets and liabilities in relation to the Group's head offices.

## FOREIGN CURRENCIES

The presentation and functional currency of the Group is Sterling. Transactions denominated in a foreign currency are translated into Sterling at the rate of exchange ruling at the date of the transaction. At the balance sheet date, monetary assets and liabilities denominated in foreign currency are translated at the rate ruling at that date. All exchange differences are dealt with in the income statement.

On consolidation, the assets and liabilities of foreign operations which have a functional currency other than Sterling are translated into Sterling at foreign exchange rates ruling at the balance sheet date. The revenues and expenses of these subsidiary undertakings are translated at average rates applicable in the period. All resulting exchange differences are recognised as a separate component of equity.

The foreign exchange rates at the balance sheet date and the average rates for the period that were used in preparing the consolidated financial statements were:

	<u>Balance sheet date</u>	<u>Average rate</u>
Australian Dollars to Sterling.....	1.70 (December 2015: 2.03)	1.81 (December 2015: 2.07)
US Dollars to Sterling.....	1.23 (December 2015: 1.48)	1.35 (December 2015: 1.53)
Canadian Dollars to Sterling .....	1.66 (December 2015: 2.05)	1.79 (December 2015: 1.99)

## INVESTMENTS

Investments by the Company in respect of its subsidiaries are held at cost less any provision for impairment when required.

## **PROPERTY, PLANT AND EQUIPMENT**

Property, plant and equipment are stated at cost less depreciation less any recognised impairment losses. Cost includes expenditure that is directly attributable to the acquisition or construction of these items. Subsequent costs are included in the asset's carrying amount only when it is probable that future economic benefits associated with the item will flow to the Group and the costs can be measured reliably. All other costs, including repairs and maintenance costs are charged to the income statement in the period in which they are incurred. Depreciation is provided on all plant and equipment, and is calculated on a straight-line basis to allocate cost over the estimated useful lives, as follows:

Computer equipment	3 years
Fixtures and furniture	3 years
Plant and machinery	3 years
Motor vehicles	5 years
Leasehold improvements	Over the period of the lease.

Freehold land is not depreciated.

Residual value and remaining useful life of assets are reviewed and adjusted as appropriate at each balance sheet date. Gains or losses arising on disposals are determined by comparing the proceeds with the carrying asset amount and are recognised within the appropriate area in the income statement.

## **SOFTWARE**

Computer software is carried at cost less accumulated amortisation and impairments, and is amortised on a straight-line basis over three years. Amortisation of software is included within administrative expenses in the consolidated income statement.

## **EXPLORATION AND EVALUATION ASSETS**

Costs arising from exploration and evaluation activities are accumulated separately for each area of interest and only capitalised where such costs are expected to be recouped through successful development, or through sale, or where exploration and evaluation activities have not, at the reporting date, reached a stage to allow a reasonable assessment regarding the existence of economically recoverable reserves.

Expenditure capitalised comprises direct costs that have a specific connection with a particular area of interest.

Capitalised expenditure in respect of areas of interest is written off in the income statement when the above criteria do not apply or when the directors assess that the carrying value may exceed the recoverable amount.

Capitalised costs in respect of an area of interest that is abandoned are written off in the period in which the decision to abandon is made.

Once production commences, capitalised expenditure in respect of an area of interest is amortised on a unit of production basis by reference to the reserves of that area of interest. Amortisation of all classes of intangible assets is included within administrative expenses in the consolidated income statement.

## **DERIVATIVE FINANCIAL INSTRUMENTS**

The Group recognises derivative financial instruments in relation to its financing instruments when they meet the recognition criteria in IAS 39 – “Financial Instruments: Recognition and Measurement” either on a standalone basis or when embedded within non-derivative transactions. The Group does not use derivative financial instruments for speculative purposes.

Derivatives are measured at fair value at each reporting date with all changes in fair value being recognised within finance income or finance costs within the income statement.

## **RESTRICTED CASH**

Amounts held by the Group in bank accounts over which are disclosed as restricted cash are amounts in bank accounts which are not available for general use by the Group. Amounts are reclassified from restricted cash to cash and cash equivalents when the contractual restrictions expire.



## **LOANS AND OTHER RECEIVABLES**

Loans and other receivables are recognised initially at fair value and subsequently measured at amortised cost less provision for impairment. Provision for impairment is established when there is objective evidence that the Group will not be able to collect all amounts due according to the original terms of the loan or receivable. The amount of the impairment is the difference between the asset's carrying amount and the present value of the estimated future cash flows, discounted at the effective interest rate.

## **BANK DEPOSITS**

Amounts reported as bank deposits represent short term investments held by the Group which it intends to hold until maturity, at which point it will receive cash from the counterparty. These amounts are recorded at amortised cost using the effective interest method.

## **CASH AND CASH EQUIVALENTS**

Cash and cash equivalents include various instant access deposits and short-term fixed deposits with original maturities of three months or less.

## **TRADE AND OTHER PAYABLES**

Trade payables are initially measured at fair value, and subsequently measured at amortised cost, using the effective interest rate method.

## **CONVERTIBLE DEBT INSTRUMENT**

Convertible debt is assessed according to the substance of the contractual arrangements. The conversion element of each agreement is split out of the host loan (which is recognised as a liability held at amortised cost) and is bifurcated into liability or equity element on the basis of the contractual characteristics of the conversion terms in comparison to the requirements of IAS 32, "Financial Instruments: Presentation". Conversion features of convertible loans denominated in the Group's functional currency of Sterling are typically classified as equity amounts and not re-measured while conversion features of convertible loans denominated in a currency other than Sterling are classified as derivative financial instruments. The Group has made a policy election for transaction costs that are directly attributable to the issuance of the convertible debt instrument to be measured at fair value and deducted from the initial carrying value of the host loan. These transaction costs are amortised in line with the host loan and recognised in the income statement.

At inception each element of the instrument is assigned a fair value based on appropriate valuation techniques with the aggregate fair value over the whole instrument being equal to the funds raised.

At inception the conversion element is separated from the host loan and is assigned a fair value based on an appropriate valuation technique. The initial carrying amount of the host loan is equal to the funds raised less the fair value attributable to the conversion option at inception.

Debt elements that are derivative instruments are fair valued at each measurement date with any movement in fair value being recorded in the income statement. Debt elements that are held at amortised cost are measured using the effective interest rate method at each measurement date with any movements being recorded in the income statement.

On conversion, the fair value of the host debt contract is re-measured. The portion being converted is extinguished in liabilities and recorded in equity as share capital and the share premium account.

## **LOAN COMMITMENTS**

Loan commitments are a financial instrument, to be accounted for in accordance with IAS 39 "Financial Instruments: Recognition and Measurement". IAS 39 specifically excludes loan commitments from recognition and measurement prior to drawdown. Once drawdown of the loan commitment occurs, the loan will be initially recognised at fair value plus directly attributable transaction costs and is subsequently re-measured at amortised cost using the effective interest rate method per IAS 39. See note 23 for further details of the loan commitment.

## **EQUITY INSTRUMENTS**

An equity instrument is any contract that evidences a residual interest in the assets of the Group after deducting all of its liabilities. Equity instruments issued by the Group are recorded at the proceeds received, net of any direct issue costs.

## **SHARE-BASED PAYMENTS**

The Group has applied the requirements of IFRS 2 “Share-based Payments”.

The Group issues equity settled share-based payments to certain directors, senior managers, employees and consultants. Equity settled share-based payments are measured at fair value (excluding the effect of non-market based vesting conditions) at the date of grant. The fair value determined at the grant date of the equity settled share-based payments is expensed on a straight line basis over the vesting period, based on the Group’s estimate of shares that will eventually vest and adjusted for the effect of non-market based vesting conditions.

The grant by the Group of options over its equity instruments to the employees of subsidiary undertakings in the Group is treated as a capital contribution. The fair value of employee services received, measured by reference to the grant date fair value, is recognised over the vesting period as an increase to investment in subsidiary undertakings, with a corresponding credit to equity.

At each reporting date, the entity revises its estimates of the number of options that are expected to vest. It recognises the impact of the revision to original estimates, if any, in the income statement, with a corresponding adjustment to equity.

## **EMPLOYEE BENEFITS**

Provision is made in the financial statements for all employee benefits. Liabilities for wages and salaries including non-monetary benefits and annual leave obliged to be settled within twelve months of the balance sheet date, are recognised within accruals.

The Group pays into a defined contribution plan on a mandatory basis. The Group has no further payment obligations once the contributions have been paid. The contributions are recognised as employee benefit expense when they are due. Prepaid contributions are recognised as an asset to the extent that a cash refund or a reduction in the future payments is available.

## **LEASES**

Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to the income statement on a straight-line basis over the period of the lease.

## **RESEARCH AND DEVELOPMENT EXPENDITURE**

Research expenditure is expensed to the Income Statement and development costs, that the recognition criteria of IAS 38, are capitalised in the Statement of Financial Position.

## **FINANCE INCOME/FINANCE COSTS**

Finance income is recognised in the income statement over the period in which it falls due. Finance expenses are recognised in the income statement as they become payable.

## **TAXATION**

Current tax is provided at amounts expected to be paid (or recovered) using the tax rates and laws that have been enacted or substantially enacted by the balance sheet date. Research and Development tax credits are recognised within current tax.

Deferred taxation is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, if the deferred tax arises from the initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting, nor taxable profit or loss, it is not accounted for. Deferred tax is determined using tax rates and laws that have been enacted (or substantially enacted) by the balance sheet date and are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income tax assets and liabilities relate to income taxes levied by the same taxation authority on either the taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

## **2. CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS**

The critical accounting estimates and judgements made by the Group regarding the future or other key sources of estimation, uncertainty and judgement that may have a significant risk of giving rise to a material adjustment to the carrying values of assets and liabilities within the next financial year are:

### **IMPAIRMENT OF INTANGIBLE ASSETS**

At each reporting date, the Group assesses whether there is any indication that any of its intangible assets may be impaired. Where an indication of impairment exists (or, on an annual basis in the case of Goodwill), the Group makes a formal estimate of recoverable amount. Where the carrying amount of an asset exceeds its recoverable amount (estimated as the value-in-use of the asset) the asset is considered impaired and is written down to its recoverable amount.

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances based on the Group's latest approved forecasts.

### **GOODWILL**

The Group tests annually whether goodwill has suffered any impairment, in accordance with the accounting policy. The recoverable amounts of cash-generated units will be determined based on value-in-use calculations. These calculations will require the use of estimates (see note 11).

### **SHARE-BASED PAYMENTS**

In determining the fair value of equity settled share-based payments and the related charge to the income statement, the Group makes assumptions about future events and market conditions. In particular, judgement must be made as to the likely number of shares that will vest and the fair value of each award granted. The fair value is determined using a valuation model which is dependent on future estimates, including the Group's future dividend policy, the timing with which options will be exercised and the future volatility in the price of similar fertilizer companies. Such assumptions are based on publicly available information and reflect market expectations. Different assumptions about these factors to those made by the Group could materially affect the reported value of share based payments.

### **ACCOUNTING FOR ROYALTY CONTRACT**

As explained more fully in note 23 the Group entered into a royalty purchase agreement during the year. Significant judgment is required in determining how the agreement should be accounted for. Based on the precise contractual terms of the agreement, the Group has concluded that the agreement should be accounted for as a financial instrument, to be accounted for in accordance with IAS 39 "Financial Instruments: Recognition and Measurement" rather than being treated as the permanent disposal of an interest in the Project. Furthermore, the Group has concluded that prior to drawdown occurring, the agreement is in substance a loan commitment, and therefore no recognition of it is necessary in the financial statements until drawdown occurs.

### **FAIR VALUATION OF DERIVATIVE FINANCIAL INSTRUMENTS**

The Group is required to exercise judgment in appropriately estimating the fair value of derivative financial instruments. Derivative financial instruments held by the Group do not have observable market prices and so management are required to apply appropriate valuation models in calculating these fair values. In making its estimates, management give priority to inputs based on actual market data and transactions, although these valuations nevertheless require some level of subjective assessment for unobservable inputs and the use of different valuation assumptions could have a significant impact upon the Group's financial results.

## **3. SEGMENTAL ANALYSIS**

Management has determined the operating segments by considering the business from both a geographic and activity perspective. The Group is currently organised into one business division: the UK segment which consists of its North Yorkshire polyhalite project related activities and the corporate operations. This division is the segment for which the Group reports information internally to the board of directors. The Group's operations are predominantly in the United Kingdom. However the Group has a number of non-UK based entities who are either dormant or whose operations are insignificant in the context of the Group.

As a result of the disclosure requirements required under IFRS 8 “Operating Segments”, the disclosures are already included in the primary statements.

#### 4. OPERATING LOSS IS STATED AFTER CHARGING:

	31 December 2016	Nine month- period to 31 December 2015
	£000s	£000s
Auditors’ remuneration		
Fees payable to the Company’s auditor for the audit of the Company and consolidated financial statements (including £73,000 in respect of the Company (December 2015: £61,000)).....	88	73
Fees payable to the Company’s auditors and their associates for other services to the Group		
– The audit of the Company’s subsidiaries pursuant to legislation.....	37	—
– Tax compliance .....	—	13
– Other tax services .....	69	90
– Other assurance services.....	320	—
Depreciation of property, plant and equipment .....	57	84
Amortisation of intangible assets .....	—	5
Operating lease charges.....	240	177
Foreign exchange gains.....	(4,158)	(31)

#### 5. FINANCE INCOME

	31 December 2016	Nine-month period to 31 December 2015
	£000s	£000s
Bank interest received .....	448	99
Fair value gain on derivative financial instrument (see note 22).....	1,041	—
	<b>1,489</b>	<b>99</b>

#### 6. FINANCE COSTS

	31 December 2016	Nine-month period to 31 December 2015
	£000s	£000s
Bank interest paid .....	1	—
Foreign exchange rate translation loss on convertible loan .....	4,437	—
Fair value loss on embedded derivative.....	5,744	—
Interest on convertible loan .....	2,839	172
Loan interest on loan from third parties (see note 16) .....	18	14
	<b>13,039</b>	<b>186</b>

## 7. STAFF NUMBERS AND COSTS (INCLUDING DIRECTORS)

	31 December 2016	Nine-month period to 31 December 2015
	Number	Number
<b>Group</b>		
Average monthly number of staff (including directors) .....	65	62

	31 December 2016	Nine-month period to 31 December 2015
	Number	Number
<b>Company</b>		
Average monthly number of staff (including directors) .....	15	18

	31 December 2016	Nine-month period to 31 December 2015
	£000s	£000s
<b>Group</b>		
Wages and salaries .....	6,304	3,526
Social security .....	973	450
Pension .....	31	—
Other benefits .....	88	91
Compensation for loss of office .....	373	73
Relocation .....	69	11
	<b>7,838</b>	<b>4,151</b>

At the year end, £3,541,000 (December 2015: £1,831,000) was capitalised as intangible exploration costs.

	31 December 2016	Nine-month period to 31 December 2015
	£000s	£000s
<b>Company</b>		
Wages and salaries .....	1,506	910
Social security .....	285	111
Pension .....	13	—
Other benefits .....	20	16
Compensation for loss of office .....	—	—
Relocation .....	5	1
	<b>1,829</b>	<b>1,038</b>

Directors emoluments during the period were:

	Wages and Salaries	Other Benefits	Total
	£000s	£000s	£000s
Year ended 31 December 2016			
RJ Scrimshaw .....	50	—	50
CN Fraser .....	360	12	372
J Lodge .....	33	—	33
L Hardy .....	16	—	16
Lord Hutton .....	25	—	25
N Harwerth .....	31	—	31
SG Pycroft .....	9	—	9
KEF Clarke CBE .....	25	—	25
	549	12	561

During the year, there were pension contributions of £3,000 to pension schemes for the directors (December 2015: nil). Details of the share options granted to the directors during the period are given in note 18. Other benefits include health insurance and tax due on benefits.

Highest paid director:

	<b>31 December 2016</b>	<b>Nine-month period to 31 December 2015</b>
	<b>£000s</b>	<b>£000s</b>
Total emoluments and amounts (excluding shares receivable under long-term incentive schemes) .....	<b>372</b>	279

Share options held by the directors at the period end were:

	Grant date	Number of options (000s)	Exercise price £	Vesting date	Expiry date
CN Fraser	26 September 2012*	10,000	0.3000	26 September 2014	26 September 2017
	26 September 2012*	10,000	0.4500	26 September 2015	26 September 2018
Lord Hutton	30 January 2012	1,800	0.3000	30 January 2015	29 January 2022
KEF Clarke CBE	23 December 2013	1,800	0.3000	23 December 2016	23 December 2023

\*These share options are held by related parties to the directors.

Key management are those persons having authority and responsibility for planning, controlling and directing the activities of the Group. The directors are considered to be the key management personnel of the Group.

Key management personnel received the following compensation during the period:

	31 December 2016	Nine-month period to 31 December 2015
	£000s	£000s
Short-term employee benefits.....	561	417
	<b>561</b>	<b>417</b>

## 8. TAXATION

	31 December 2016	Nine-month period to 31 December 2015
	£000s	£000s
Loss on ordinary activities before taxation .....	(23,422)	(7,509)
Loss on ordinary activities multiplied by the standard rate of corporation taxation in the UK of 20% (2015: 21%).....	(4,684)	(1,502)
<i>Taxation effects of:</i>		
Expenses not deductible for tax purposes .....	15	20
Trading losses utilised .....	—	(26)
Trading losses not utilised .....	4,669	1,508
Research and development tax credit .....	(468)	(550)
Tax credit for the year .....	<b>(468)</b>	<b>(550)</b>

The standard rate of corporation tax in the UK changed from 21% to 20% with effect from 1 April 2015. Accordingly, the Company's profits for this accounting year are taxed at an effective rate of 20%. From 1 April 2016, the rate remained at 20%.

Changes to the UK corporation tax rates were substantively enacted as part of the Finance Bill 2015 (on 26 October 2015) and Finance Bill 2016 (on 7 September 2016). These include reductions to the main rate to reduce the rate from 19% from 1 April 2017 and to 17% from 1 April 2020. Deferred taxes at the balance sheet date have been measured using these enacted tax rates and reflected in these financial statements.

Taxation in the Consolidated Comprehensive Income Statement includes a tax credit of £468,000 in relation to a Research and Development claim.

The Group has a deferred tax liability of £4,344,000 (2015: £4,599,000) in relation to the intangible asset created on acquisition of York Potash. The Group also recognises a deferred tax asset of £4,344,000 (2015: £4,599,000) in relation to taxable losses.

The Group has unused tax losses of £69,597,000 (December 2015: £50,596,000).

## 9. LOSS PER SHARE

	31 December 2016	Nine-month period to 31 December 2015
	£000s	£000s
Loss for the purposes of basic earnings per share being net loss attributable to equity shareholders of the parent .....	(22,954)	(6,959)
Loss for the purpose of diluted earnings per share .....	<b>(22,954)</b>	<b>(6,959)</b>
	<b>2016</b>	<b>2015</b>
	Number (000's)	Number (000's)
Number of shares		
Weighted average number of ordinary shares for the purpose of basic and diluted earnings per share .....	<b>2,472,762</b>	<b>2,230,602</b>
	<b>2016</b>	<b>2015</b>
	Number (000's)	Number (000's)
Number of shares		
Weighted average number of ordinary shares for the purposes of diluted earnings per share .....	<b>2,480,858</b>	<b>2,231,795</b>
Basic and diluted loss per share .....	(0.9)p	(0.3)p

Diluted loss per share are calculated by dividing the loss attributable to ordinary shareholders by 2,480,858,000 (2015: 2,231,795,000) ordinary shares, being the average number of ordinary shares in issue during the year adjusted by the dilutive effect of employee share schemes and convertible loan options.

For the year ended 31 December 2016, options over 1,343,090,000 shares (2015: 45,450,000) were excluded from this calculation because their effect was anti-dilutive for continuing operations.



## 10. PROPERTY, PLANT AND EQUIPMENT

	Freehold property	Computer equipment	Furniture & fixtures	Plant & machinery	Motor vehicles	Leasehold improvements	Total
Group	£000s	£000s	£000s	£000s	£000s	£000s	£000s
<b>Cost</b>							
At 1 April 2015.....	1,765	221	196	90	110	130	2,512
Additions .....	—	1	—	—	—	—	1
At 31 December 2015 .....	1,765	222	196	90	110	130	2,513
Additions .....	4,328	12	6	—	—	—	4,346
<b>At 31 December 2016.....</b>	<b>6,093</b>	<b>234</b>	<b>202</b>	<b>90</b>	<b>110</b>	<b>130</b>	<b>6,859</b>
<b>Accumulated Depreciation</b>							
At 1 April 2015.....	—	158	183	81	72	86	580
Charge expensed to income statement.....	—	31	13	3	16	21	84
At 31 December 2015 .....	—	189	196	84	88	107	664
Charge expensed to income statement.....	—	19	3	3	17	15	57
<b>At 31 December 2016.....</b>	<b>—</b>	<b>208</b>	<b>199</b>	<b>87</b>	<b>105</b>	<b>122</b>	<b>721</b>
<b>Net book value</b>							
<b>At 31 December 2016.....</b>	<b>6,093</b>	<b>26</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>8</b>	<b>6,138</b>
At 31 December 2015 .....	1,765	33	—	6	22	23	1,849
At 1 April 2015.....	1,765	63	13	9	38	44	1,932

	Computer equipment	Furniture & fixtures	Leasehold improvements	Total
Company	£000s	£000s	£000s	£000s
<b>Cost</b>				
At 1 April 2015.....	31	28	37	96
At 31 December 2015 .....	31	28	37	96
Additions .....	—	2	—	2
<b>At 31 December 2016.....</b>	<b>31</b>	<b>30</b>	<b>37</b>	<b>98</b>
<b>Accumulated Depreciation</b>				
At 1 April 2015.....	30	28	32	90
Charge expensed to income statement.	1	—	5	6
At 31 December 2015 .....	31	28	37	96
<b>At 31 December 2016.....</b>	<b>31</b>	<b>28</b>	<b>37</b>	<b>96</b>
<b>Net book value</b>				
<b>At 31 December 2016.....</b>	<b>—</b>	<b>2</b>	<b>—</b>	<b>2</b>
At 31 December 2015 .....	—	—	—	—
At 1 April 2015.....	1	—	5	6

Operating lease expenditure of £240,000 (December 2015: £177,000) relating to the lease of property is charged to the income statement (see note 4).

## 11. INTANGIBLE ASSETS

	Exploration costs and rights	Goodwill	Software	Total
Group Cost	£000s	£000s	£000s	£000s
At 1 April 2015.....	173,412	9,079	79	182,570
Additions .....	16,254	—	—	16,254
At 31 December 2015 .....	189,666	9,079	79	198,824
Additions .....	12,234	—	—	12,234
<b>At 31 December 2016.....</b>	<b>201,900</b>	<b>9,079</b>	<b>79</b>	<b>211,058</b>
<b>Accumulated provision for permanent diminution in value</b>				
At 1 April 2015.....	(58,339)	(2,436)	(74)	(60,849)
Amortisation .....	—	—	(5)	(5)
At 31 December 2015 .....	(58,339)	(2,436)	(79)	(60,854)
<b>At 31 December 2016.....</b>	<b>(58,339)</b>	<b>(2,436)</b>	<b>(79)</b>	<b>(60,854)</b>
<b>Net book value</b>				
<b>At 31 December 2016.....</b>	<b>143,561</b>	<b>6,643</b>	<b>—</b>	<b>150,204</b>
At 31 December 2015 .....	131,327	6,643	—	137,970
At 1 April 2015.....	115,073	6,643	5	121,721

### GOODWILL

The goodwill acquired in January 2011 as part of the business combination relating to York Potash Limited has been allocated to the cash generating unit (CGU) of resource evaluation and exploitation in the geographical location of the UK, which is expected to benefit from the business combination.

Recoverable amount has been assessed using fair value less costs of disposals ('FVLCD') based on discounted cash flow techniques where the resulting estimate is based on the detailed long-term production plan.

The cash flow forecasts for FVLCD purposes are based on management's best estimates of expected future revenues and costs, including the future cash costs of production, capital expenditure, closure, restoration and environmental costs in line with estimates made in the Group's published definitive feasibility study for the Sirius Minerals polyhalite project in NorthYorkshire. For the purposes of determining FVLCD from a market participant's perspective, the cash flows incorporate management's price and cost assumptions in the short and medium term. In the longer term, operating margins are assumed to remain constant where appropriate, as it is considered unlikely that a market participant would prepare detailed forecasts over a longer term.

The cash flow projections are based on long-term plans covering the expected life of the operation. The mineral resource of 2.6 billion tonnes of polyhalite determines an expected mine life of more than 50 years. The valuations are particularly sensitive to changes in assumptions about selling prices, volumes of production and operating costs. Long-term average selling prices are forecast taking account of market data in respect of potash and management's current expectations. Forecasts of volumes of production and operating costs are based on management's current expectations.

Discount rates represent an estimate of the rate the market would apply having regard to the time value of money and the risks specific to the asset for which the future cash flow estimates have not been adjusted. A discount rate of 10%, (December 2015 10%) which is considered to be appropriate for a project of this nature and size, has been applied to the pre-tax cash flows.

No reasonably possible change in the key assumptions on which York Potash Limited's recoverable amount is based would cause its value to fall short of its carrying amount as at 31 December 2016.

## IMPAIRMENT

There were no impairment charges in the year.

	<b>Software</b>
<b>Company</b>	<b>£000s</b>
<b>Cost</b>	
At 1 April 2015.....	10
Additions.....	—
At 31 December 2015 .....	10
Additions.....	—
As at 31 December 2016.....	10
<b>Accumulated provision for permanent diminution in value</b>	
At 1 April 2015.....	(9)
Amortisation.....	(1)
At 31 December 2015 .....	(10)
Amortisation.....	—
At 31 December 2016 .....	(10)
<b>Net book value</b>	
<b>At 31 December 2016</b> .....	—
At 31 December 2015 .....	—
At 1 April 2015.....	1

## 12. INVESTMENTS IN SUBSIDIARIES

<b>Company</b>	<b>£000s</b>
At 1 January 2016.....	81,612
Additions.....	36,880
Impairment .....	(36,689)
<b>At 31 December 2016</b> .....	<b>81,803</b>

<b>Company</b>	<b>£000s</b>
At 1 April 2015.....	81,095
Additions.....	517
<b>At 31 December 2015</b> .....	<b>81,612</b>

The additions during the year consist of the derivative liability (see note 16) and share awards given to subsidiary employees.

The impairment during the year relates to the derivative liability that was initially recognised in the Company accounts.

<b>Name</b>	<b>Country of incorporation</b>	<b>Registered address</b>	<b>Activity</b>	<b>Percentage of ordinary share capital held by the Company</b>
York Potash Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Resource evaluation and exploration	100%
York Potash Processing & Ports Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Holds options to purchase land	100%
York Potash Holdings Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Corporate operations	100%
Sirius Minerals Holdings Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Corporate operations	100%
Sirius Minerals Finance Limited	United Kingdom	47 Esplanade St Helier JE1 0BD	Fundraising	100%
Sirius Exploration Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Dormant	100%
Sirius Resources Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Dormant	100%
Sirius Potash Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Dormant	100%
SACH 1 Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Corporate operations	100%
SACH 2 Limited	United Kingdom	3rd Floor Greener House 68 Haymarket London SW1Y 4RF	Corporate operations	100%
Auspotash Corporation Limited	Canada	102A-1075 Bay Street Suite 414 Toronto Ontario M5S 2B2	Dormant	100%
Sirius Minerals (Australia) Pty Limited	Australia	5 Infinity Court Coomera Qld 4209	Dormant	100%
Dakota Salts LLC	United States of America	811 East Interstate Avenue Bismarck North Dakota 58503	Resource evaluation and exploration	100%

### 13. OTHER RECEIVABLES

	31 December 2016	31 December 2015
<b>Group</b>	<b>£000s</b>	<b>£000s</b>
Other receivables.....	428	765
Prepayments.....	412	419
	<b>840</b>	<b>1,184</b>
	31 December 2016	31 December 2015
<b>Company</b>	<b>£000s</b>	<b>£000s</b>
Other receivables.....	220	10
Prepayments.....	110	142
	<b>330</b>	<b>152</b>

The directors consider that the carrying amount of other receivables approximate to their fair value.

During the period, no bad and doubtful debt charges have been recognised by the Group in the income statement (December 2015: £nil).

At the year end, no receivables were either impaired (December 2015: £nil) or past due but not impaired (December 2015: £nil).

### 14. LOANS BETWEEN SUBSIDIARIES

#### LOANS TO SUBSIDIARIES

<b>Company</b>	<b>£000s</b>	
At 1 January 2016 .....	67,975	
Additions .....	22,103	
	<hr/>	
<b>At 31 December 2016</b> .....	<b>90,078</b>	
	<hr/> <hr/>	
<b>Company</b>	<b>£000s</b>	
At 1 April 2015 .....	61,677	
Additions .....	6,298	
	<hr/>	
<b>At 31 December 2015</b> .....	<b>67,975</b>	
	<hr/> <hr/>	
	<b>31 December 2016</b>	<b>31 December 2015</b>
	<hr/>	<hr/>
<b>Company</b>	<b>£000s</b>	<b>£000s</b>
Sirius Minerals Holdings Limited.....	90,078	67,975
	<hr/>	<hr/>
	<b>90,078</b>	<b>67,975</b>
	<hr/>	<hr/>

The loans to subsidiaries are non-interest bearing and repayable on demand.

The directors consider that the carrying amount of the loans to subsidiaries approximate to their fair value.

## LOANS FROM SUBSIDIARIES

Company	£000s
At 1 January 2016	—
Additions .....	370,252
<b>At 31 December 2016.....</b>	<b>370,252</b>

	31 December 2016	31 December 2015
Company	£000s	£000s
Sirius Minerals Finance Limited.....	370,252	—
	<b>370,252</b>	<b>—</b>

An intercompany loan is in place from Sirius Minerals Finance Limited to the Company for the gross proceeds of the convertible loans of US\$400 million and any additional amounts, on-lent to the Company for investment and further on-lending into the Group.

The intercompany loan, has a stated interest rate of 8.5% payable on the outstanding principle (reduced from time to time following conversions by the bondholders). The terms of the intercompany loan mirror the terms of the external bonds such that the liability recognised by the Company in its own financial statements, reflects a principle amount (up to the par value of any unconverted bonds and any accrued interest) which will match the external liability to bondholders (£318,135,000 as at 31 December 2016) and an amount in respect of a make-whole cash payment which would become payable to bondholders who elect to convert prior to 28 November 2018 (£52,117,000 as at 31 December 2016).

Since these amounts are payable on demand by the Company to Sirius Minerals Finance Limited, IFRS 13 requires that the maximum make-whole payment is recognized by the Company as a current liability in its own financial statements. The make-whole component of the liability will unwind through the income statement over the period to 28 November 2018, as the commitment decreases.

## 15. CASH AND CASH EQUIVALENTS

	31 December 2016	31 December 2015
	£000s	£000s
<b>Group</b>		
Cash at bank.....	260,157	29,093
	<b>260,157</b>	<b>29,093</b>

	31 December 2016	31 December 2015
Company	£000s	£000s
Cash at bank.....	258,493	25,665
	<b>258,493</b>	<b>25,665</b>

## 16. LOANS

	31 December 2016	31 December 2015
	£000s	£000s
<b>Group</b>		
Convertible loan.....	321,366	—
Loan from third parties .....	—	748
	<b>321,366</b>	<b>748</b>
	31 December 2016	31 December 2015
	£000s	£000s
<b>Company</b>		
Convertible loan.....	42,433	—
Loan from subsidiaries .....	370,252	—
	<b>412,685</b>	<b>—</b>

On 28 November 2016 the Group issued \$400million of 7 year, 8.5% quarterly coupon USD-denominated convertible loans at par, receiving gross proceeds of £319,923,000 and incurring transaction costs of £11,577,000 which have been net off the carrying value of the loan. The key terms of the convertible loans are that at any date subsequent to 8 January 2017 up until maturity a bondholder may convert their bonds into ordinary shares in the Company at a conversion price of \$0.31 per share.

If a bondholder elects to convert prior to 28 November 2018 then, as well as receiving ordinary shares in the Company, they will also receive a make-whole cash payment equal to the total value of coupon payments that they would have been owed had they held their bonds until 28 November 2018. The Group also has a call option to redeem all bonds at par should the Company's share price exceed certain thresholds from 28 November 2018 onwards. Bondholders may not request early cash-repayment of their bonds except under certain protective clauses relating to changes of ownership in the Group.

Under the terms of the convertible loan, the Group has also been required to set aside an amount in an escrow bank account in respect of all coupon payments due until 28 November 2019 and so this amount of £82,924,000 (2015: £nil) has been disclosed on the Group's statement of financial position as restricted cash as the Group is not able to use the cash for any purpose other than the payment of quarterly coupons.

Due to the conversion terms of the bonds leading to the issuance of a fixed number of ordinary shares in the Company in return for the extinguishment of the bonds whose value is variable in terms of the Company's functional currency of Sterling, the Group has accounted for the bonds as a host loan instrument containing an embedded derivative liability in respect of the conversions features. The split of the convertible loan between the host loan and the embedded derivative is detailed in the table below.

	28 November 2016				31 December 2016
	Initial recognition	Fair value change	Interest	Foreign exchange loss / (gain)	Total
			£000s		
<b>Convertible loan</b>					
Gross proceeds of					
Convertible loan issue.....	319,923				
Transaction costs					
capitalised on host loan					
instrument .....	(11,577)				
<b>Net proceeds of convertible loan issue</b>	<b>308,346</b>				
Host loan liability .....	271,657	—	2,839	4,437	278,933
Embedded conversion					
derivative.....	36,689	5,744	—	—	42,433
<b>Convertible loan liability</b>	<b>308,346</b>	<b>5,744</b>	<b>2,839</b>	<b>4,437</b>	<b>321,366</b>

In the Company's own financial statements, no host loan exists since the bonds have been legally issued by a subsidiary company. However, since any conversion of these bonds will lead to issuance of ordinary shares in the Company, a derivative liability equal to the value of the embedded derivative in the convertible loan reported in the consolidated accounts has been recognised in the Company's own statement of financial position. Upon initial recognition of the derivative liability the Company recognised an increase in the value of its investment in the subsidiary company which legally issued the bonds. The Company, Sirius Minerals Plc, have guaranteed the bonds and interest payments which have been legally issued by a subsidiary company.

#### Fair value estimation

In order to estimate the fair value of the embedded derivative at inception and year-end, the Group estimated the fair value of the cash flows due under the host loan at the prevailing discount rate that would likely apply to any debt issued by the Group which was not convertible. Based on the pricing terms obtained on the convertible bonds, management have estimated a discount rate that for the loan component based on bond yield data of comparable entities with similar credit profiles at the measurement dates.

The effect of using a discount rate that was one percentage point higher/(lower) at 31 December 2016 would have been an increase/(decrease) in the finance cost recognised in the income statement of £13,085,000/(£13,961,000).

In estimating the fair value at 31 December 2016, the Group incorporated the mid-price of the bonds' quoted market price of 102.9 (28 November 2016: 100.0). Therefore the fair value of the Group's convertible loan bonds as at 31 December 2016 was £334,679,000 compared to the stated carrying value of £321,366,000.



## 17. SHARE-BASED PAYMENTS

The total expense recognised within the income statement in relation to equity settled share based payment transactions in the year is £884,000 (December 2015: £927,000).

At the year-end, the share-based payment reserve was made up as follows:

	31 December 2016	31 December 2015
	£000s	£000s
Equity settled share-based payments – directors .....	2,612	3,368
Equity settled share-based payments – senior managers .....	2,714	3,427
Equity settled share-based payments – employees .....	—	22
Equity settled share-based payments – consultants .....	—	19
Equity settled share-based payments – previous employees and advisers .....	788	788
	<b>6,114</b>	<b>7,624</b>

Movements in the share-based payment reserve during the year and prior year are as follows:

	£000s
<b>At 1 April 2015</b> .....	<b>13,290</b>
Charge in the year .....	927
Shares issued to employees .....	(228)
Lapsed share options .....	(6,365)
<b>At 31 December 2015</b> .....	<b>7,624</b>
Charge in the year .....	844
Capitalised share-based payment charges .....	127
Shares issued to employees .....	(1,437)
Lapsed share options .....	(1,044)
<b>At 31 December 2016</b> .....	<b>6,114</b>

## 18. SHARE CAPITAL

	31 December 2016	31 December 2015
	£000s	£000s
<b>Allotted and called up</b>		
4,164,514,405 (2015: 2,294,695,991) ordinary shares of 0.25p each .....	<b>10,412</b>	<b>5,737</b>

	Number of shares (thousands)	Ordinary shares (£000s)	Share premium (£000s)	Total (£000s)
<b>At 1 April 2015</b> .....	<b>2,145,020</b>	<b>5,362</b>	<b>216,586</b>	<b>221,948</b>
Issued during the year .....	149,676	375	24,288	24,663
<b>At 31 December 2015</b> .....	<b>2,294,696</b>	<b>5,737</b>	<b>240,874</b>	<b>246,611</b>
Issued during the year .....	1,869,818	4,675	349,849	354,524
<b>At 31 December 2016</b> .....	<b>4,164,514</b>	<b>10,412</b>	<b>590,723</b>	<b>601,135</b>

On 13 May 2016, the Company announced the issue of 12,649,417 ordinary shares of 0.25p each as a part of the employee incentive award. The award consists of the Short Term Incentive Scheme (STI) and Long Term Incentive Scheme (LTI).

On 19 July 2016, the Company received notices of exercise in options in respect of the financing which was announced on 12 August 2013 at the conversion price of 19.50p. As a result, the Company issued 5,975,000 ordinary shares.

On 1 September 2016, the Company announced the receipt of an exercise notice in relation to 250,000 share options granted to a former employee in August 2011. As a result, the Company issued 250,000 0.25p ordinary shares at a strike price of 16.30p.

On 28 November 2016, the Company announced the issue of 1,850,895,290 ordinary shares as a result of the firm placing and placing and open offer. The issue price of these shares was 20p. The related transaction costs amounting to £18,370,000 have been netted off the share premium account with the proceeds received.

During the period, the movement in share options over shares in the Company was as follows:

	Number of options	Weighted average exercise price	Weighted average share price at exercise
	000s	£	£
At 31 December 2015.....	67,916	0.2437	—
Granted during the period .....	2,500	0.3400	—
Forfeited/lapsed .....	(5,050)	(0.2167)	—
Revaluation .....	1,815	—	—
Exercised during the period.....	(6,225)	0.0516	0.192
<b>At 31 December 2016.....</b>	<b>60,956</b>	<b>0.3825</b>	
Exercisable at 31 December 2016.....	55,554	0.3406	

The revaluations reflect the impact of the open offer, on 28 November 2016, on the Company's existing share options. In order to reflect the impact of the open offer on the Company's existing share options the board of directors approved certain market standard adjustments to the Company's outstanding share options. See note 21 for further details.

Details of the share options granted during the year are as follows:

	Tranche 1
Recipient	Senior Manager
Grant date .....	25 Oct 2016
Share price at date of grant (£) .....	0.2625
Exercise price (£) .....	0.3400
Volatility rate.....	90.55%
Expected life (years).....	10
Risk free rate .....	1.79%
Dividend yield.....	0.00%
Vesting date .....	26 Oct 2019
Number of options (000s).....	2,500
Fair value of options at date of grant (£000s) .....	£562

The fair values of the options are calculated by use of the Black Scholes model. The inputs into the model are noted in the table above. Expected volatility was determined by calculating the historical volatility of the share price of the Company over the previous 730 days.

The options generally vest if the option holders are still employed by or engaged with the Company on the vesting dates. Some of the options carry additional performance related conditions which must be satisfied in order for them to vest. The performance related conditions relate to the timing of completion of stage 1 and stage 2 financing and of the first commercial ore sale.

The options outstanding at 31 December 2016 had a weighted average remaining contractual life of 3.0 years (December 2015: 4.0 years).

The fair value of the options determined at the grant date is expensed on a straight line basis over the vesting period.

The total expense recognised within the income statement in the period in relation to share options is £210,000 (December 2015: £1,137,000).

#### Warrants

There were no warrants issued during the year.

#### Share awards

During the period, the movement in share awards in relation to shares in the Company was as follows:

	Number of shares	Weighted average exercise price
	000s	£
At 31 December 2015 .....	18,186	—
Granted during the period .....	11,858	—
Awarded during the period .....	(11,507)	—
Forfeited during the period .....	(8,680)	—
<b>At 31 December 2016 .....</b>	<b>9,857</b>	<b>—</b>
Exercisable at 31 December 2016 .....	—	—

The fair values of the share awards are measured by multiplying the number of shares under the award by the closing share price of the Company, on the day before the date of grant.

The shares generally vest if the holders are still employed by or engaged with the Company on the vesting dates. Some of the shares carry additional performance related conditions which must be satisfied in order for them to vest.

The fair value of the share awards determined at the grant date is expensed on a straight line basis over the vesting period.

The aggregate of the fair values of the share awards granted during the year is £2,709,000 of which £955,000 was expensed to the income statement (December 2015: £nil). The fair value of the shares that were issued during the period is £1,897,000 (December 2015: £229,000) and the fair value of the share awards that were forfeited during the period is £1,112,000 (December 2015: £38,000).

The total expense recognised within the income statement in the period in relation to share awards is £762,000 (December 2015: £271,000).

## 19. TRADE AND OTHER PAYABLES

	31 December 2016	31 December 2015
<b>Group</b>	<b>£000s</b>	<b>£000s</b>
Trade payables .....	243	174
Taxation and social security .....	170	597
Other payables .....	41	34
Accruals .....	5,400	3,381
	<b>5,854</b>	<b>4,186</b>
	31 December 2016	31 December 2015
<b>Company</b>	<b>£000s</b>	<b>£000s</b>
Trade payables .....	120	15
Taxation and social security .....	89	516
Accruals .....	898	675
Accrued convertible loan issue costs .....	2,419	—
	<b>3,526</b>	<b>1,206</b>

## 20. CASH OUTFLOW FROM OPERATING ACTIVITIES

	31 December 2016	Nine-month period to 31 December 2015
Group	£000s	£000s
Loss before tax.....	(23,422)	(7,509)
Amortisation .....	—	5
Depreciation.....	57	84
Exchange differences charged to profit and loss .....	(4,986)	—
Finance expense .....	11,550	87
Loan conversion into shares.....	—	172
Share-based payments.....	844	699
Tax credit.....	468	550
<b>Operating cash flow before changes in working capital.....</b>	<b>(15,489)</b>	<b>(5,912)</b>
Decrease in receivables .....	344	229
(Decrease)/increase in payables.....	(751)	376
<b>Net cash outflow from operating activities.....</b>	<b>(15,896)</b>	<b>(5,307)</b>

	31 December 2016	Nine-month period to 31 December 2015
Company	£000s	£000s
Loss before tax.....	(107,596)	(3,601)
Amortisation .....	—	1
Depreciation.....	—	6
Exchange differences charged to profit and loss .....	(4,959)	—
Finance expense .....	63,744	116
Impairment.....	36,689	—
Loan conversion into shares.....	—	172
Share based payments.....	780	699
<b>Operating cash flow before changes in working capital.....</b>	<b>(11,342)</b>	<b>(2,607)</b>
(Increase)/decrease in receivables .....	(178)	18
(Decrease)/increase in payables.....	(99)	847
Increase in accrued convertible loan issue costs .....	2,419	—
<b>Net cash outflow from operating activities.....</b>	<b>(9,200)</b>	<b>(1,742)</b>

## 21. RELATED PARTY TRANSACTIONS

On 27 April 2016, Elizabeth Noel Harwerth, non-executive director, purchased 49,608 of the Company's 0.25p ordinary shares at an average price of 18.12p each.

On 28 April 2016, Jane Ann Lodge, non-executive director, purchased 100,000 of the Company's 0.25p ordinary shares at an average price of 18.35p each.

On 11 May 2016, Chris Fraser was awarded 833,340 of the Company's 0.25p ordinary shares at an average price of 18.25p each. This was part of the short term incentive (STI) award. In addition, Chris Fraser was also awarded with 1,239,006 of the Company's 0.25p ordinary shares as a part of the long term incentive (LTI) award, these shares however only vest once certain conditions have been met.

During the period, the Company loaned £22,103,000 to its subsidiaries for working capital purposes. The Company had a loan receivable balance of £90,078,000 outstanding from its subsidiaries.

On 12 August 2016 5,975,000 options over ordinary shares at an exercise price of 19.5p per share were exercised that were granted as part of the financing which was announced on 12 August 2013.

On 5 September 2016, 250,000 share options over ordinary shares granted to a former employee in August 2011 were exercised at an exercise price of 16.3p per share.

On 28 November 2016, following the admission of the firm placing and placing and open offer shares, the following directors/persons discharging managerial responsibilities (PDMRs) have acquired shares in the open offer and in the following amounts:

<b>Name</b>	<b>Role</b>	<b>Shares acquired</b>
Russell Scrimshaw	Non-executive chairman	2,557,142
Keith Clarke CBE	Non-executive director	227,208
Elizabeth Noel Harwerth	Non-executive director	9,644
Lord John Hutton	Non-executive director	2,285
Jane Lodge	Non-executive director	16,000
Thomas Staley	CFO (PDMR)	42,400
Nicholas King	General Counsel (PDMR)	36,282

On 28 November 2016, in order to reflect the impact of the open offer on the Company's existing share options the board of directors approved certain market standard adjustments to the Company's outstanding share options. As a result of the adjustments the number of share options outstanding in the Company increased from 59,141,234 to 60,855,229 and the average option exercise price reduced from 34 pence to 33 pence per option.

After the adjustments the following directors/PDMRs have the following options at the following exercise prices:

<b>Name</b>	<b>Role</b>	<b>Options</b>	<b>Exercise Price</b>
Chris Fraser	Managing Director & CEO	10,289,814	29.2p
		10,289,814	43.7p
Keith Clarke CBE	Non-executive director	1,852,167	29.2p
Lord John Hutton	Non-executive director	1,852,167	29.2p
Thomas Staley	CFO (PDMR)	1,543,472	29.2p
		1,543,472	29.2p
Nicholas King	General Counsel (PDMR)	1,028,981	29.2p
Simon Carter	Development Director (PDMR)	2,572,453	34p

On 28 November 2016, Sirius Minerals Finance Limited (a subsidiary of the Company) loaned £319,923,000 to Sirius Minerals Plc (the Company). The value of that loan on 31 December 2016 was £370,252,000 (see note 16).

## 22. FINANCIAL INSTRUMENTS

### Classification of financial instruments

IFRS 7 "Financial Instruments: Disclosures" requires financial instruments to be grouped into a fair value hierarchy based on the lowest level input that is significant to the fair value measurement.

The three levels of the hierarchy are:

- Level 1 – Quoted prices (unadjusted) based on active markets for identical assets or liabilities;
- Level 2 – Inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (that is, prices) or indirectly (that is, derived from prices);
- Level 3 – Inputs for the asset or liability that are not based on observable market data.

### Measurement of financial instruments

The derivatives that are a part of the Convertible Loan and Royalty Financing Agreement have both been assessed to be a level 2 financial liability.

This is because the derivatives themselves are not traded on an active market. However their fair values are determined by valuation techniques that use observable market data, e.g. bond prices, equity forwards and credit spreads.

### Financial instruments by category

31 December 2016					
Group	Cash and cash equivalents	Loans and receivables	At fair value through profit and loss	Financial liabilities at amortised cost	Total
			£000s		
<b>Financial assets</b>					
Derivative financial instrument .....	—	—	1,041	—	1,041
Restricted cash.....	—	82,924	—	—	82,924
Other receivables (excluding prepayments) .....	—	428	—	—	428
Bank deposits .....	—	322,188	—	—	322,188
Cash and cash equivalents.....	260,157	—	—	—	260,157
	<b>260,157</b>	<b>405,540</b>	<b>1,041</b>	<b>—</b>	<b>666,738</b>
<b>Financial liabilities</b>					
Convertible loan .....	—	—	(42,433)	(278,933)	(321,366)
Trade and other payables.....	—	—	—	(5,854)	(5,854)
	<b>—</b>	<b>—</b>	<b>(42,433)</b>	<b>(284,787)</b>	<b>(327,220)</b>
<b>Net financial assets/(liabilities) .....</b>	<b>260,157</b>	<b>405,540</b>	<b>(41,392)</b>	<b>(284,787)</b>	<b>339,518</b>

31 December 2015					
Group	Cash and cash equivalents	Loans and receivables	At fair value through profit and loss	Financial liabilities at amortised cost	Total
			£000s		
<b>Financial assets</b>					
Other receivable (excluding prepayments) .....	—	765	—	—	765
Cash and cash equivalents.....	29,093	—	—	—	29,093
	<b>29,093</b>	<b>765</b>	<b>—</b>	<b>—</b>	<b>29,858</b>
<b>Financial liabilities</b>					
Loan from third parties.....	—	—	—	(748)	(748)
Trade and other payables.....	—	—	—	(4,186)	(4,186)
	<b>—</b>	<b>—</b>	<b>—</b>	<b>(4,934)</b>	<b>(4,934)</b>
<b>Net financial assets/(liabilities) .....</b>	<b>29,093</b>	<b>765</b>	<b>—</b>	<b>(4,934)</b>	<b>24,924</b>

31 December 2016

Company	Cash and cash equivalents	Loans and receivables	At fair value through profit and loss	Financial liabilities at amortised cost	Total
			£000s		
<b>Financial assets</b>					
Derivative financial instrument .....	—	—	1,041	—	1,041
Restricted cash.....	—	82,924	—	—	82,924
Other receivables (excluding prepayments) .....	—	220	—	—	220
Loans to subsidiaries.....	—	90,078	—	—	90,078
Bank deposits .....	—	322,188	—	—	322,188
Cash and cash equivalents.....	258,493	—	—	—	258,493
	<b>258,493</b>	<b>495,410</b>	<b>1,041</b>	<b>—</b>	<b>754,944</b>
<b>Financial liabilities</b>					
Convertible loan .....	—	—	(42,433)	—	(42,433)
Loan from subsidiaries.....	—	—	(52,117)	(318,135)	(370,252)
Trade and other payables.....	—	—	—	(3,526)	(3,526)
	—	—	<b>(94,550)</b>	<b>(321,661)</b>	<b>(416,211)</b>
<b>Net financial assets/(liabilities) .....</b>	<b>258,493</b>	<b>495,410</b>	<b>(93,509)</b>	<b>(321,661)</b>	<b>338,733</b>

31 December 2015

Company	Cash and cash equivalents	Loans and receivables	At fair value through profit and loss	Financial liabilities at amortised cost	Total
			£000s		
<b>Financial assets</b>					
Other receivables (excluding prepayments) .....	—	10	—	—	10
Loans to subsidiaries.....	—	67,975	—	—	67,975
Cash and cash equivalents.....	25,665	—	—	—	25,665
	<b>25,665</b>	<b>67,985</b>	<b>—</b>	<b>—</b>	<b>93,650</b>
<b>Financial liabilities</b>					
Trade and other payables.....	—	—	—	(1,206)	(1,206)
	—	—	—	<b>(1,206)</b>	<b>(1,206)</b>
<b>Net financial (liabilities)/assets .....</b>	<b>25,665</b>	<b>67,985</b>	<b>—</b>	<b>(1,206)</b>	<b>92,444</b>

**Capital management**

The Group's and Company's objectives when managing capital are to safeguard the Group's and Company's ability to continue as a going concern, to provide returns for shareholders and to maintain an optimal capital structure to reduce the cost of capital. The Group and Company define capital as being share capital plus reserves. The board of directors monitors the level of capital as compared to the Group's and Company's commitments and adjusts the level of capital as it is determined to be necessary, by issuing new shares. The Group and Company are not subject to any externally imposed capital requirements.



The Group's credit risk is primarily attributable to its other receivables, cash and cash equivalents, restricted cash, bank deposits and loan to a third party. The Group has implemented policies that require appropriate credit checks. The amount of exposure to any individual counterparty is reviewed regularly by the Board.

## Interest rate risk

The Group's cash and cash equivalents earned interest from various instant access, term and notice bank deposits and money market funds, predominantly in Sterling and US Dollars. Cash and cash equivalents of the Group and Company are disclosed above under credit risk. The impact of a movement of 5% in the rate of interest on the Group's and Company's cash and cash equivalents will have no material impact to the Group and Company's results and financial positions as at 31 December 2015 and 31 December 2016.

The Group actively maintains cash balances that are designed to ensure that there are sufficient available funds for operations and planned expansions. The Group monitors its levels of working capital to ensure that it can meet its payments as they fall due. The following table shows the contractual maturities of the Group and Company's financial liabilities:

	31 December 2015		
Group	Trade & other payables	Accruals	Total
		£000s	
Amount due within 1 year or less.....	805	3,381	4,186
<b>Total contractual cash flows .....</b>	<b>805</b>	<b>3,381</b>	<b>4,186</b>

	<b>31 December 2016</b>			
<b>Company</b>	<b>Trade &amp; other payables</b>	<b>Accruals</b>	<b>Loans from subsidiaries</b>	<b>Total</b>
		<b>£000s</b>		
Amount due within 1 year or less .....	209	3,317	27,632	31,158
Amount due within 1-5 years .....	—	—	110,527	110,527
Amount due after 5 years.....	—	—	380,344	380,344
<b>Total contractual cash flows .....</b>	<b>209</b>	<b>3,317</b>	<b>518,503</b>	<b>522,029</b>

### Foreign currency exchange rate risk

The impact of a movement of 5% in foreign exchange rates when translating the Group's financial assets and liabilities into Sterling would be £720,000 (December 2015: £5,000) to the Group's results and £728,000 (December 2015: £1,457,000) to the Group's financial position as at 31 December 2016.

31 December 2015		
Group	Cash and cash equivalents	Total
	£000s	
Sterling .....	28,406	28,406
Euros .....	324	324
US Dollars.....	287	287
Canadian Dollars .....	48	48
Australian Dollars .....	24	24
South African Rand .....	4	4
	<b>29,093</b>	<b>29,093</b>

31 December 2016							
Company	Cash and cash equivalents	Bank deposits	Restricted cash	Derivative asset	Convertible loan	Loans from subsidiaries	Total
	£000s						
Sterling .....	156,768	200,095	—	—	—	—	356,863
Euros .....	23	—	—	—	—	—	23
US Dollars .....	101,699	122,093	82,924	1,041	(42,433)	(370,252)	(104,928)
Australian Dollars..	3	—	—	—	—	—	3
	<b>258,493</b>	<b>322,188</b>	<b>82,924</b>	<b>1,041</b>	<b>(42,433)</b>	<b>(370,252)</b>	<b>251,961</b>

31 December 2015		
Company	Cash and cash equivalents	Total
	£000s	
Sterling .....	25,601	25,601
Euros .....	39	39
US Dollars.....	24	24
Australian Dollars .....	1	1
	<b>25,665</b>	<b>25,665</b>

#### Operating lease commitments

The Group leases various offices under operating lease agreements. The lease terms are between two and five years and, the majority of agreements are renewable at the end of the lease period, at market rate. The lease expenditure charged to the income statement during the year is disclosed in note 5.

The future aggregate minimum lease payments under operating leases agreements are:

<b>Group</b>	<b>31 December 2016</b>	<b>31 December 2015</b>
	<b>£000s</b>	<b>£000s</b>
No later than 1 year.....	185	196
Later than 1 year and no later than 5 years.....	249	227
	<b>434</b>	<b>423</b>
<b>Company</b>	<b>31 December 2016</b>	<b>31 December 2015</b>
	<b>£000s</b>	<b>£000s</b>
No later than 1 year.....	75	22
Later than 1 year and no later than 5 years.....	132	—
	<b>207</b>	<b>22</b>

### 23. ROYALTY FINANCING AGREEMENT

On 25 October 2016 the Group entered into a royalty financing agreement with Hancock British Holdings Limited (“Hancock”). Under the agreement Hancock will pay consideration of USD 250 million in return for future royalty payments amounting to 5% of gross revenues on the first 13 million tonnes of product sold in each calendar year and a further 1% of gross revenues on sales in excess of 13 million tonnes, for the life of the project.

Drawdown of the USD 250 million consideration is subject to certain conditions precedent being met, principally the Group giving notice to Hancock that it has expended USD 630 million of the proceeds of the Group’s November 2016 stage 1 financing and that all material permits, commercial arrangements and authorisations for the project remain in place.

The royalty purchase represents a loan commitment and therefore falls outside of the scope of IAS 39 “Financial Instruments: Recognition and Measurement”. As such no accounting entries are recognised in the financial statements prior to receipt of the consideration.

The agreement also commits Hancock to subscribe for 200 million new ordinary shares in the Company for a consideration of USD 50 million at the time of drawdown of the royalty consideration.

The fair value attaching to the equity subscription component of the agreement has been recognised as a financial asset, representing the expected market value of the shares Hancock will subscribe for compared to the agreed consideration in USD, and will be subject to re-measurement at each balance sheet date until settlement.

The Group had the following undrawn committed borrowing facilities at 31 December 2016:

	<b>31 December 2016</b>	<b>31 December 2015</b>
	<b>£000s</b>	<b>£000s</b>
<b>Expiry:</b>		
Between 3-4 years.....	203,175	—
	<b>203,175</b>	<b>—</b>

### 24. POST BALANCE SHEET EVENT

On 2 February 2017, Thomas Jay Staley was appointed as the Company’s Finance Director.

## 25. BANK DEPOSITS

<b>Group</b>	<b>31 December 2016</b>	<b>31 December 2015</b>
	<b>£000s</b>	<b>£000s</b>
Bank deposits .....	322,188	—
	<b>322,188</b>	<b>—</b>
	<b>31 December 2016</b>	<b>31 December 2015</b>
	<b>£000s</b>	<b>£000s</b>
Bank deposits .....	322,188	—
	<b>322,188</b>	<b>—</b>

Bank deposits are amounts sitting in deposit accounts with notice terms exceeding three months.

## PART 12

### ADDITIONAL INFORMATION

#### 1. PERSONS RESPONSIBLE

The Directors, whose names appear in this Prospectus, and the Company accept responsibility for the information contained in the Prospectus. To the best of the knowledge of the Directors and the Company (who have taken all reasonable care to ensure that such is the case), the information contained in this Prospectus is in accordance with the facts and does not omit anything likely to affect the import of such information.

#### 2. INCORPORATION AND REGISTERED OFFICE

The Company was incorporated as a private company limited by shares in England and Wales under the name Charco 935 Limited with registered number 4948435 on 30 October 2003. The Company changed its name to Sirius Explorations Limited on 9 December 2003 and to Sirius Exploration Limited on 16 July 2004. On 22 March 2005, the Company was re-registered as a public limited company and its name was changed to Sirius Exploration plc. On 28 September 2010, the company name was changed to Sirius Minerals plc.

The registered office of the Company is 3rd Floor, Greener House, 68 Haymarket, London, SW1Y 4RF, United Kingdom (telephone number +44 20 3327 3660).

The principal legislation under which the Company operates and under which the Shares were created, is the Companies Act.

#### 3. SHARE CAPITAL

##### 3.1 *Issued and Fully Paid Share Capital*

The issued and fully paid share capital of the Company as at 21 April 2017 (being the latest practicable date prior to publication of this Prospectus) was, and expected to be immediately following Admission is, 4,164,514,405 Shares. The expected market capitalisation of the Company immediately following Admission is £1,030,717,315 million.<sup>1</sup>

As at 21 April 2017 (being the latest practicable date prior to publication of this Prospectus), there were 32,809 American Depositary Receipts (ADRs) in the Company's Level 1 ADR programme for which Deutsche Bank Trust Company Americas acts as the Depositary. Each ADR evidences an American Depositary Share representing 50 Shares. The ADR programme thus represents 1,640,450 Shares or approximately 0.0394 per cent. of the issued share capital.

The Shares are currently admitted to trading on AIM. Upon Admission, the admission of the Shares to trading on AIM will be cancelled.

##### 3.2 *Changes to Share Capital*

The following summarises the changes that have occurred in the share capital of the Company from 1 January 2013 to 21 April 2017 (being the latest practicable date prior to publication of this Prospectus):

- On 1 January 2013 the issued share capital of the Company was £3,358,958 divided into 1,343,583,310 Shares.
- Between 1 January 2013 and 30 June 2013, the Company issued and allotted 4,397,022 Shares (i) to satisfy director and employee incentive awards and (ii) pursuant to the exercise of share options granted in March 2010;
- Between 1 July 2013 and 31 December 2013, the Company issued and allotted 137,986,794 Shares pursuant to the exercise of (i) convertible securities and (ii) share options granted under a convertible security financing announced on 12 August 2013 (the **2013 Convertible Security Financing**);
- Between 1 January 2014 and 30 June 2014, the Company issued and allotted 388,182,972 Shares pursuant to the exercise of share options and convertible securities issued under the 2013 Convertible Security Financing, a placing and to satisfy incentive awards;

<sup>1</sup> Based on the Company's share price at close on 21 April 2017, being the latest practicable date prior to the publication of this Prospectus.

- Between 1 July 2014 and 31 December 2014, the Company issued and allotted 22,106,792 Shares pursuant to the exercise of share options and convertible securities issued under the 2013 Convertible Security Financing, a placing and to satisfy incentive awards;
- Between 1 January 2015 and 30 June 2015, the Company issued and allotted 274,014,023 Shares pursuant to the exercise of share options and convertible securities issued under the 2013 Convertible Security Financing;
- Between 1 July 2015 and 31 December 2015, the Company issued and allotted 124,473,785 Shares pursuant to the exercise of warrants issued under the placing on 6 March 2014 and the exercise of convertible securities issued under the 2013 Convertible Security Financing;
- Between 1 January 2016 and 30 June 2016, the Company issued and allotted 12,649,417 Shares to satisfy employee incentive awards;
- Between 1 July 2016 and 2 September 2016, the Company issued and allotted 6,225,000 Shares pursuant to the exercise of share options granted under the 2013 Convertible Security Financing and to satisfy an employee incentive award; and
- On 28 November 2016, the Company issued and allotted 1,850,895,290 Shares pursuant to the 2016 Firm Placing and Placing and Open Offer.

### 3.3 *Convertible Bonds*

Following completion of the 2016 Convertible Bond Offering, Sirius Minerals Finance Limited, a wholly owned subsidiary of the Company incorporated in Jersey, has outstanding senior, unsecured US\$400 million convertible bonds due 2023 (the **Convertible Bonds**) that are guaranteed by the Company and will be convertible into redeemable preference shares of Sirius Minerals Finance Limited which will be automatically transferred to the Company (without any further action being required to be taken by the relevant bondholder) on and as at the relevant conversion date and in consideration therefor exchanged into fully paid Shares of the Company. The initial conversion price for the Convertible Bonds is US\$0.31 (based on a reference share price of £0.20, converted into U.S. dollars at the prevailing U.S. dollar to pound sterling spot rate at the time of pricing, and an initial conversion premium of 25.0 per cent. above the reference share price) which implies that there were approximately 1,300,390,117 Shares underlying the Convertible Bonds as at the issue date of the Convertible Bonds, although the number of Shares underlying the Convertible Bonds may change from time to time as the conversion price will be subject to adjustment pursuant to customary anti-dilution provisions dealing with, among other things, share consolidations, share splits, capital distributions, rights issues and bonus issues. The Convertible Bonds bear interest from (and including) 29 November 2016 at the rate of 8.5 per cent. per annum, payable quarterly in arrear in equal instalments.

Other key terms of the Convertible Bonds include:

- early redemption at the option of Sirius Minerals Finance Limited of all, but not some only, of the Convertible Bonds prior to their maturity if:
  - the value of the Shares underlying each US\$200,000 in principal amount of Convertible Bonds is at least (A) for any redemption on or after 19 December 2018 up to but excluding 19 December 2021, US\$350,000 and (B) for any redemption on or after 19 December 2021, US\$300,000; or
  - at any time, 85 per cent. or more of the aggregate principal amount of the Convertible Bonds originally issued have been converted or purchased and cancelled;
- the transfer by Sirius Minerals Finance Limited to an escrow account (which is to be secured for the benefit of the bond trustee for itself and the bondholders) of a sum equal to the full amount of interest payable on each of the first twelve interest payment dates under the Convertible Bonds with such amounts to be released from the escrow account in certain limited circumstances, including to pay interest on the Convertible Bonds; and
- the payment of a make-whole amount (being the amount of all interest that would otherwise have been received under the relevant Convertible Bonds up to and including 28 November 2018) to any holder whose Convertible Bonds are converted before 28 November 2018.

The Convertible Bonds also benefit from a capital markets style negative pledge (subject to certain exceptions, including for project finance indebtedness and existing security interests), events of default (including a cross acceleration, subject to a US\$15 million threshold and a project finance indebtedness carve out) and a tax gross-up in respect of any Jersey or UK withholding (subject to

certain customary exceptions and an issuer tax call). In addition, the Convertible Bonds will benefit from certain other provisions dealing with change of control and free float events.

The Convertible Bonds are listed on the Channel Islands Securities Exchange and on the Open Market (*Freiverkehr*) of the Frankfurt Stock Exchange.

### **3.4 Miscellaneous**

As at the date of this Prospectus, there are no warrants outstanding.

Save as disclosed above and in paragraph 8 (“*Employee Share Plans*”) of this Part 12:

- no share or loan capital of the Company or any of its subsidiaries has within the period covered by the Historical Financial Information set out in this Prospectus (other than intra-group issues by wholly owned subsidiaries) been issued or been agreed to be issued fully or partly paid, either for cash or for a consideration other than cash and no such issue is now proposed;
- no commissions, discounts, brokerages or other special terms have been granted by the Company or any of its subsidiaries within the period covered by the Historical Financial Information set out in this Prospectus in connection with the issue or sale of any share or loan capital of any such company; and
- no share or loan capital of the Company or any of its subsidiaries is under option or agreed, conditionally or unconditionally, to be put under option.

### **3.5 Form of Shares**

The Shares are in registered form and, subject to the provisions of the CREST Regulations, the Directors may permit the holding of shares in any class of shares in uncertificated form and title to such shares may be transferred by means of a relevant system (as defined in the CREST Regulations). Where Shares are held in certificated form, share certificates will be sent to the registered members by first class post.

The Shares are registered with the ISIN number GB00B0DG3H29.

## **4. SUMMARY OF THE ARTICLES OF ASSOCIATION**

The following is a summary of the Articles of the Company which were adopted pursuant to a special resolution passed on 28 September 2010 and which are available for inspection as set out in paragraph 23 (“*Documents Available for Inspection*”) of this Part 12.

The Articles include provisions, *inter alia*, to the following effect:

### **4.1 Objects**

The objects of the Company, in accordance with section 31(1) of the Companies Act, are unrestricted.

### **4.2 Limited liability**

The liability of the members is limited to the amount, if any, unpaid on the Shares respectively held by them.

### **4.3 Rights attaching to Shares**

- Voting rights of members – on a show of hands, every member or authorised corporate representative present has one vote and every proxy present has one vote. On a poll, every member present in person or by proxy has one vote for every share of which he is a holder. In the case of joint holders, the vote of the person whose name stands first in the register of members and who tenders a vote is accepted to the exclusion of any votes tendered by any other joint holders.
- Dividends – subject to the rights attached to any shares issued on any special terms and conditions, dividends shall be declared and paid according to the nominal amounts (excluding any premium) paid up on the shares in respect of which the dividend is paid, but no amount paid up on a share in advance of calls should be treated for these purposes as paid up on the share.
- Return of capital – if the Company is in liquidation, the liquidator may, with the sanction of a special resolution of the Company and any other authority required by any applicable statutory provision (i) divide among the members in specie or kind the whole or any part of the assets



of the Company; or (ii) vest the whole or any part of the assets in trustees upon such trusts for the benefit of members as the liquidator shall think fit, but no member shall be compelled to accept any assets upon which there is any liability.

- Capitalisation of reserves – the Board may, with the authority of an ordinary resolution of the Company (i) resolve to capitalise any sum standing to the credit of any reserve account of the Company or any sum standing to the credit of profit and loss account not required for the payment of any preferential dividend (whether or not it is available for distribution); and (ii) appropriate that sum as capital to the holders of Shares in proportion to the nominal amount of the Shares or debentures of the Company of a nominal amount equal to that sum and allot the shares or debentures credited as fully paid to those members, or as they may direct, in those proportions or in paying up the whole or part of any amounts which are unpaid in respect of any issued shares in the Company held by them respectively.

#### **4.4 *Transfer of Shares***

A member may transfer all or any of his shares in any manner which is permitted by any applicable statutory provision and is approved by the Board.

A member may transfer all or any of his certificated shares by an instrument of transfer in any usual form, or in such other form (whether or not by written instrument) as the Board may approve. Any written instrument of transfer shall be signed by or on behalf of the transferor and, except in the case of a fully paid share, by or on behalf of the transferee. The Board may, in its absolute discretion, refuse to register any instrument of transfer of any certificated share which is not fully paid up (but not so as to prevent dealings in listed shares from taking place on an open and proper basis). The Board may also refuse to register any instrument of transfer of a certificated share unless it is left at the registered office, or such other place as the Board may decide, for registration, accompanied by the certificate for the shares to be transferred and such other evidence (if any) as the Board may reasonably require to prove the title of the intending transferor and it is in respect of only one class of share. If the Board refuses to register a transfer of a certificated share it shall, within ten business days send to the transferee notice of the refusal. Unless otherwise agreed by the Board in any particular case, the maximum number of persons who may be entered on the register as joint holders of a share is four.

#### **4.5 *Alteration of share capital***

The Company may exercise the powers conferred by the applicable statutory provisions to:

- increase its share capital by allotting new shares;
- reduce its share capital, any capital redemption reserve and any share premium account in any way;
- sub-divide or consolidate and divide all or any of its share capital;
- reconvert stock into shares;
- redenominate all or any of its shares and reduce its share capital in connection with such redenomination;
- issue redeemable shares; and
- purchase all or any of its own shares including any redeemable shares.

#### **4.6 *Variation of rights***

All or any of the rights for the time being attached to any class of shares may from time to time (whether or not the Company is being wound-up) be varied in such manner as those rights may provide or (if no such provision is made) either with the consent in writing of the holders of three-fourths in nominal value of the issued shares of that class or with the authority of a special resolution passed at a separate general meeting of the holders of those shares. At any separate general meeting, the quorum is two members present in person or by proxy holding at least one-third in nominal amount of the issued shares of the class in question (but at any adjourned meeting, the quorum is one member present in person or by proxy holding shares of the class).

#### **4.7 *Disclosure of interests in shares***

If the holder of, or any person appearing to be interested in, any share has been given a notice requiring any of the information mentioned in section 793 of the Companies Act (section 793 notice) and, in respect of that share (a default share), has been in default for a period of 14 days after the

section 793 notice has been given in supplying to the Company the information required by the section 793 notice, the following restrictions shall apply: (i) if the default shares in which any one person is interested or appears to the Company to be interested represent less than 0.25 per cent. of the issued shares of the class, the holders of the default shares shall not be entitled, in respect of those shares, to attend or to vote, either personally or by proxy, at any general meeting of the Company; or (ii) if the default shares in which any one person is interested or appears to the Company to be interested represent at least 0.25 per cent. of the issued shares of the class, the holders of the default shares shall not be entitled, in respect of those shares:

- to attend or to vote, either personally or by proxy, at any general meeting of the Company; or
- to receive any dividend or other distribution; or
- to transfer or agree to transfer any of those shares or any rights to them.

#### **4.8 *Uncertificated shares – general powers***

In relation to any uncertificated share, the Company may utilise the relevant system in which it is held to the fullest extent available from time to time in the exercise of any of its powers or functions under any applicable statutory provision or the Articles or otherwise in effecting any action. Any provision in the Articles in relation to uncertificated shares which is inconsistent with any applicable statutory provision shall not apply. Conversion of shares held in certificated form into shares held in uncertificated form, and vice versa, may be made in such a manner as the Board may, in its absolute discretion, think fit (subject always to applicable statutory provisions and requirements of the relevant system concerned). For the purpose of effecting any action by the Company, shares held by a person in uncertificated form and in certificated form shall not be treated as separate classes of shares.

#### **4.9 *Directors***

- The directors (other than alternate directors) shall not, unless otherwise determined by an ordinary resolution of the Company, be less than two nor more than 12 in number.
- At each annual general meeting one-third of the directors then in office shall retire from office. Each director shall retire from office once every three years but shall be eligible for re-election.
- The directors shall be paid fees at rates to be determined by the Board (or any duly authorised committee of the Board).
- The Board may grant special remuneration to any director who performs any special or extra services to or at the request of the Company.
- The Board may exercise all the powers of the Company to manage the business of the Company.
- For the purposes of section 175 of the Companies Act, the directors shall have the power to authorise any matter which would or might otherwise give rise to a breach of the duty of a director under that section to avoid a situation in which he has, or can have a direct or indirect interest that conflicts or may conflict with the interests of the Company. Authorisation of such a matter may only be effective if:
  - The matter in question shall have been proposed for consideration at a meeting of the directors in accordance with the Board's normal procedures or in such other manner as the directors may determine,
  - Any requirement as to the quorum at the meeting of the directors at which the matter is considered is met without counting the director in question and any other interested director (together, the interested directors), and
  - The matter was agreed without the interested directors voting or would have been agreed to if the votes of the interested directors had not been counted.
  - Any authorisation so given (i) shall extend to any actual or potential conflict of interest which may reasonably be expected to arise out of the matter so authorised, and (ii) shall be subject to such conditions or limitations as the directors may have determined whether at the time such authorisation is given or subsequently, and (iii) may be terminated by the directors at any time.

#### **4.10 General meetings**

An annual general meeting shall be held in accordance with the applicable statutory provisions. Other general meetings shall be held whenever the Board thinks fit or on the requisition of shareholders in accordance with the Companies Act.

Subject to the applicable statutory provisions, an annual general meeting shall be called by at least 21 clear days' notice and all other general meetings shall be called by not less than 14 clear days' notice or by not less than such minimum notice period as is permitted by the applicable statutory provisions.

The requisite quorum for general meetings of the Company shall be two qualifying persons, representing different members and entitled to vote on the business to be transacted at the meeting. A qualifying person is an individual who is a member of the Company, a corporate representative, or a proxy.

#### **4.11 Borrowing powers**

The Board may exercise all the powers of the Company to borrow money and to mortgage or charge all or any part of its undertaking, property and assets (both present and future) and uncalled capital and to issue debentures and other securities, whether outright or as collateral security for any debt, liability or obligations of the Company or of any third party.

#### **4.12 Dividends**

- Declaration of dividends – the Company may, by ordinary resolution, declare a dividend to be paid to the members, according to their respective rights and interests in the profits, and may fix the time for payment of such dividend, but no dividend shall exceed the amount recommended by the Board.
- Fixed and interim dividends – the Board may pay such interim dividends as appear to the Board to be justified by the financial position of the Company and may also pay any dividend payable at a fixed rate at intervals settled by the Board whenever the financial position of the Company in the opinion of the Board, justifies its payment. If the Board acts in good faith, none of the directors shall incur any liability to the holders of shares conferring preferred rights for any loss such holders may suffer in consequence of the payment of an interim dividend on any shares having non-preferred or deferred rights.
- Dividends not to bear interest – no dividend or other monies payable by the Company on or in respect of any share shall bear interest as against the Company unless otherwise provided by the rights attached to the share.
- Calls or debts may be deducted from dividends – the Board may deduct from any dividend or other monies payable to any person (either alone or jointly with another) on or in respect of a share all such sums as may be due from him (either alone or jointly with another) to the Company on account of calls or otherwise in relation to shares of the Company.
- Dividends in specie – with the authority of an ordinary resolution of the Company and on the recommendation of the Board, payment of any dividend may be satisfied wholly or in part by the distribution of specific assets and in particular of paid-up shares or debentures of any other company.
- Unclaimed dividends – any dividend unclaimed for a period of 12 years after having become due for payment shall be forfeited and cease to remain owing by the Company.

#### **4.13 Forfeiture of shares**

If the whole or any part of any call or instalment remains unpaid on any share after the due date for payment, the Board may give a notice to the holder requiring him to pay so much of the call or instalment as remains unpaid, together with any accrued interest.

If the requirements of a notice are not complied with, any share in respect of which it was given may (before the payment required by the notice is made) be forfeited by a resolution of the Board. The forfeiture shall include all dividends declared and other monies payable in respect of the forfeited share and not actually paid before the forfeiture.

Every share which is forfeited or surrendered shall become the property of the Company and (subject to the applicable statutory provisions) may be sold, re-allotted or otherwise disposed of, upon such

terms and in such manner as the Board shall decide either to the person who was before the forfeiture the holder of the share or to any other person.

#### **4.14 Communications by the Company**

Subject to the applicable statutory provisions, a document or information may be sent or supplied by the Company to any member in electronic form to such address as may from time to time be authorised by the member concerned or by making it available on a website and notifying the member concerned (by post or other permitted means) of the presence of a document or information on the website. Before communicating with a member by means of its website, the Company must have asked each member, individually, to agree that the Company may send or supply documents or information to him by means of a website and the Company must either have received a positive response or the person must be deemed to have so agreed pursuant to the relevant provisions in the Companies Act.

#### **4.15 Directors' indemnity, insurance and defence**

As far as the applicable statutory provisions allow, the Company may indemnify every person who is or was a director or other officer of the Company, out of the assets of the Company, against all costs, charges, expenses, losses and liabilities incurred by him from time to time in relation to the affairs of the Company or the actual or purported execution and/or discharge of the duties of his office and/or the exercise of his powers or discretions, including any liability suffered or incurred by him in disputing, defending, investigating or providing evidence in connection with any actual, threatened, or alleged claims, demands or proceedings whether civil or criminal provided that no indemnification shall be provided to the extent that (i) any provision of the Articles would be treated as void under the Companies Act, or (ii) liability arises from an act or omission of the director shown to have been in bad faith.

### **5. DIRECTORS AND SENIOR MANAGEMENT**

The biographies of the Directors and Senior Management are set out in Part 8 ("*Directors, Senior Management and Corporate Governance*") of this Prospectus.

The business address of each of the Directors and each member of Senior Management is: 3rd Floor, Greener House, 68 Haymarket, London, SW1Y 4RF, United Kingdom.

In addition to their directorships of the Company and other members of the Group, the Directors and members of Senior Management hold, or have held, the following directorships and are or were members of the following partnerships, within the past five years:

<b>Name</b>	<b>Current directorships/ partnership</b>	<b>Past directorships/ partnerships</b>
<b>Directors</b>		
Russell Scrimshaw .....	Genome.One Pty Limited Garvan Institute for Medical Research Torrus Capital Pty Limited Australian Philanthropic Fund, The Scrimshaw Foundation Scrimshaw Nominees Pty Ltd Waterford Retirement Village Pty Ltd	Fortescue Metals Group Ltd Cleveland Mining Co Ltd
Chris Fraser <sup>(1)</sup> .....	Sigiriya Capital Pty Ltd C&J Fraser Investments Pty Ltd Desmo Super Pty Ltd	Panocean (China) Ltd Recursos Sigiriya Pty Ltd Li Jin Capital Pte Ltd Bicarb Sequestration Pty Ltd CO2 Energy Storage Pty Ltd Iberian Resources Group
Thomas Staley <sup>(1)</sup> .....	N/A	N/A
Noel Harwerth .....	GE Capital Bank Limited Standard Life Plc The London Metal Exchange British Horseracing Authority	Harwerth Consulting Limited London First Alent Limited Avocet Mining plc

<b>Name</b>	<b>Current directorships/ partnership</b>	<b>Past directorships/ partnerships</b>
	Limited CHAPS Clearing Company Limited UK Export Finance Agency	LME Holdings Limited Logica Limited Sumitomo Mitsui Banking Corporation Europe Limited International Tax and Investment Center RSA Insurance Group plc Dominion Diamond Corporation
Keith Clarke CBE.....	Tidal Lagoon plc Tidal Lagoon (Swansea Bay) plc Keith Clarke Consulting Limited The Forum for the Future Future Cities Catapult Institute of Civil Engineering	The Engineering and Technology Board The British Standards Institution Metronet Rail BCV Holdings Limited Metronet Rail SSL Holdings Limited
Lord Hutton.....	Arix Bioscience plc Arthurian Life Sciences Limited Nuclear Industry Association Simple Space Ltd Circle Holdings (UK) Plc Cartesius Advisory Network, Swiss Incorporation Byhiras Group Ltd Cuban Mountain Coffee Company Independent Public Pensions Commission	Pension Quality Mark Limited The HMS Victory Preservation Company The Social Market Foundation MYCSP Limited Royal United Services Institute
Jane Lodge .....	Devro PLC DCC PLC Costain Group Plc Bromsgrove School Foundation Ives Ventures Limited Ives Estates Limited	Moorgate Industries Limited <sup>(2)</sup> The Black Country Living Museum Trust
Louise Hardy .....	Ebbsfleet Development Corporation, Department for Communities and Local Government Defence Infrastructure Organisation, Ministry of Defence North West Cambridge Developments	University of Warwick Engineering School
<b>Senior Management</b>		
Simon Carter.....	N/A	N/A
Nicholas King .....	N/A	Meta Abo Brewery Share Company (Ethiopian)
J.T. Starzecki.....	N/A	Zen Ventures Inc.

**Note:**

(1) Chris Fraser and Thomas Staley are also members of Senior Management.

(2) Currently in administration.

Save as disclosed in this paragraph 5, at the date of this Prospectus, none of the Directors and members of the Senior Management has at any time within at least the past five years:

- been director or partner of any companies or partnerships; or
- had any convictions in relation to fraudulent or indictable offences (whether spent or unspent); or
- been adjudged bankrupt or entered into an individual voluntary arrangement; or

- been a director of any company at the time of, or within 12 months preceding, any receivership, compulsory liquidation, creditors' voluntary liquidation, administration, company voluntary arrangement or any composition or arrangement with that company's creditors generally or with any class of its creditors; or
- been a partner in a partnership at the time of, or within 12 months preceding, any compulsory liquidation, administration or partnership voluntary arrangement of such partnership; or
- had his assets form the subject of any receivership or been a partner of a partnership at the time of, or within 12 months preceding, any assets thereof being the subject of a receivership; or
- been subject to any official public incrimination, criticisms and/or sanctions by any statutory or regulatory authority (including any designated professional body); or
- ever been disqualified by a court from acting as a director of a company or from acting in the management or conduct of the affairs of any company.

## 6. DIRECTORS' AND SENIOR MANAGEMENT'S INTERESTS IN THE COMPANY

### 6.1 Existing interests

The following table sets out the interests (including beneficial interests) of the Directors and the members of the Senior Management (as well as their immediate families) in the share capital of the Company and the interests of persons connected (within the meaning of section 252 of the Companies Act) with the relevant Director or member of Senior Management, the existence of which was known to or could, with reasonable due diligence, be ascertained by the relevant Director or member of Senior Management, as at 21 April 2017 (being the latest practicable date prior to the date of publication of this Prospectus) and expected to be immediately following Admission:

Name	Number of Shares	Percentage of Shares
Chris Fraser.....	123,747,368	2.97
Russell Scrimshaw.....	43,523,979	1.05
Thomas Staley.....	572,400	0.01
Keith Clarke CBE.....	852,207	0.00
Noel Harwerth.....	79,109	0.02
Louise Hardy.....	0	0.00
Lord Hutton.....	30,856	0.00
Jane Lodge.....	386,953	0.01
Nicholas King.....	372,366	0.01
Simon Carter.....	0	0.00
J.T. Starzecki.....	1,333,713	0.03

The following tables and paragraphs set out details of the share awards expected to be held by the Directors and members of the Senior Management as at close of business on 21 April 2017 (being the latest practicable date prior to the date of publication of this Prospectus) under the Share Plans (described in paragraph 8 ("*Employee Share Plans*") of this Part 12) and expected to be immediately following Admission.

### 6.1.1 Share Plans

Name	Plan <sup>(1)</sup>	Date of grant	Number of Shares (subject to option)	Exercise price (£)	Exercise period
Chris Fraser .....	IOS	26 September 2012 <sup>(2)</sup>	10,289,814	0.292	26 September 2014 to 26 September 2017
	IOS	26 September 2012 <sup>(2)</sup>	10,289,814	0.437	26 September 2015 to 26 September 2018
Thomas Staley .....	IOS	20 January 2015	1,543,472	0.292	20 January 2016 to 20 January 2018
	USOP	20 January 2015	1,233,555	0.292	20 January 2018 to 20 January 2025
	CSOP	20 January 2015	309,917	0.292	20 January 2018 to 20 January 2025
Lord Hutton .....	USOP	30 January 2012	1,852,167	0.292	30 January 2015 to 29 January 2022
Keith Clarke CBE .....	USOP	23 December 2013	1,852,167	0.292	23 December 2016 to 22 December 2023
Nicholas King .....	IOS	3 December 2012	514,491	0.292	3 December 2014 to 2 December 2022
	USOP	3 December 2012	376,560	0.292	3 December 2015 to 2 December 2022
	CSOP	3 December 2012	137,930	0.292	3 December 2015 to 2 December 2022
Simon Carter .....	USOP	25 October 2016	2,497,919	0.34	25 October 2019 to 25 October 2026
	CSOP	25 October 2016	74,534	0.34	25 October 2019 to 25 October 2026

**Notes:**

(1) Abbreviations as indicated in paragraph 8 (“*Employee Share Plans*”) of this Part 12.

(2) Options held by related parties.

Awards under the CSOP and the USOP normally become exercisable on the third anniversary of the date of grant, subject to the satisfaction of the performance condition. Awards cease to be exercisable on the tenth anniversary of the date of grant. Awards under the IOS are granted under individual option agreements and become exercisable on the vesting date specified in the option agreement. Awards cease to be exercisable on the expiry date set out in the option agreement.

### 6.1.2 Milestone Awards

In addition to the awards listed above, Thomas Staley and Nicholas King are entitled to be issued 2,000,000 Shares each on completion of agreed milestones subject to their continued employment. One of these milestones has been met and, accordingly, 1,000,000 Shares have vested to each of them, to be issued at a later date. Simon Carter is entitled to be issued 7,000,000 Shares on completion of agreed milestones subject to his continued employment. The number of Shares to be issued on completion of each milestone is set out in their employment contracts.

### 6.1.3 Jointly Owned Equity Awards

The following Directors and members of the Senior Management hold Jointly Owned Equity Awards over the following numbers of Shares.

Name	Date of grant	Number of Shares
Chris Fraser .....	13 May 2016	826,004
Nicholas King .....	13 May 2016	240,780
JT Starzecki .....	13 May 2016	305,805

In addition, the Company has recently determined additional Jointly Owned Equity Awards over the following numbers of shares. These will be issued into the Sirius Minerals plc Employee Benefit Trust (EBT) at the next trading opportunity. The Shares will vest subject to achievement of certain Company performance conditions.

Name	Number of Shares
Chris Fraser .....	1,479,452
Thomas Staley .....	602,740
Nicholas King .....	602,740
JT Starzecki .....	602,740

Under the rules of the Sirius Minerals plc Share Based Incentive Plan and the terms of the individual Jointly Owned Equity Award agreements and Jointly Owned Equity option agreements under which each Jointly Owned Equity Award was or will be granted (the **JOE Award Terms**), each Director and member of the Senior Management listed above owns, or will own, jointly with the trustee of the EBT, the number of Shares set out next to his or her name.

Pursuant to the JOE Award Terms, each participant's interest (the **Employee's Interest**) in the jointly owned shares is based on the growth in value of the shares above a hurdle value of £0.20. The Jointly Owned Equity Awards vest in three equal portions subject to the meeting of certain operational performance conditions, and once vested the participants may realise the value of the vested portion of their Jointly Owned Equity Awards by instructing the trustee of the EBT to sell such number of the jointly owned Shares as is comprised in the vested portion of the Employee's Interest, and to account to him/her for the proceeds of sale.

The interests of the Directors and members of the Senior Management together represent approximately 4.1 per cent. of the issued share capital of the Company as at 21 April 2017 (being the latest practicable date prior to the date of publication of this Prospectus) and are expected to be the same immediately following Admission.

Save as set out in this paragraph 6.1, no Director nor any member of the Senior Management has any interest in the share or loan capital of the Company and, save as provided in this paragraph 6.1, there is no person to whom any capital of any member of the Group is under award or option or agreed unconditionally to be put under award or option.

## 6.2 Significant Shareholders

As at 21 April 2017 (being the latest practicable date prior to the date of publication of this Prospectus), in so far as it is known to the Company by virtue of the notifications made pursuant to the Companies Act and/or Chapter 5 of the Disclosure and Transparency Rules, the name of each person (other than a Director) who directly or indirectly is interested in voting rights representing 3 per cent. or more of the total voting rights in respect of the Company's issued share capital, and the amount of such person's holding, is as follows:

Name	Number of Shares	Percentage of Shares
Nortrust Nominees Limited TDS ACCT	310,620,913	7.46
State Street Nominees Limited OM02 ACCT	300,418,844	7.21
Pershing Nominees Limited PERNY ACCT	296,191,404	7.11
Hargreaves Lansdown (Nominees) Limited 15942 ACCT	237,819,934	5.71
Barclayshare Nominees Limited	233,885,599	5.62
Hargreaves Lansdown (Nominees) Limited HLNOM ACCT	197,759,108	4.75
Chase Nominees Limited	190,005,068	4.56
Hargreaves Lansdown (Nominees) Limited VRA ACCT	180,191,197	4.33
DB London (Investor Services) Nominee Limited	162,000,000	3.89
HSDL Nominees Limited	143,994,424	3.46
TD Direct Investing Nominees (Europe) Limited SMKTNOMS ACCT	141,794,670	3.40

Save as disclosed in this paragraph 6.2, the Company is not aware of any holdings of any person (other than a Director) of voting rights (within the meaning of Chapter 5 of the Disclosure and Transparency Rules) representing 3 per cent. or more of the voting rights in respect of the issued ordinary share capital of the Company as at 21 April 2017 (being the latest practicable date prior to the date of publication of this Prospectus).

There are no differences between the voting rights enjoyed by the Shareholders described above and those enjoyed by any other Shareholder in the Company.

As at 21 April 2017 (being the latest practicable date prior to the date of publication of this Prospectus), the Company was not aware (i) of any persons who, directly or indirectly, jointly or severally, exercise or could exercise control or ownership over the Company, or (ii) of any arrangements, the operation of which may at a subsequent date result in a change in control of the Company.

## 7. REMUNERATION AND BENEFITS

### 7.1 Executive Directors' service contracts

#### 7.1.1 General terms

Each of the Executive Directors, Chris Fraser and Thomas Staley, has a service agreement with the Company, pursuant to which Chris Fraser is paid an annual base salary of £475,000, and Thomas Staley is paid an annual base salary of £330,000. Salaries are reviewed, but not necessarily increased,



annually. Each Executive Director is eligible to participate, at the discretion of the Remuneration Committee, in the Company's annual bonus plan and Share Plans.

Each Executive Director's benefit package includes a relocation benefit being the costs associated with relocating back to Australia at the conclusion of his employment, and private medical insurance for the benefit of them and their immediate family. The Company also provide life insurance cover equal to four times base salary.

In addition to normal public holidays, Chris Fraser is entitled to 28 working days' paid holiday in each complete holiday year and Thomas Staley is entitled to 25 working days' paid holiday in each complete holiday year.

#### *7.1.2 Termination provisions*

Each of the Executive Director's service agreements can be terminated by him or the Company subject to the terminating party giving six months' written notice or payment in lieu of notice. In addition, his employment is terminable with immediate effect if he: (i) commits acts of gross misconduct or gross incompetence; (ii) is convicted of any criminal offence which in the reasonable opinion of the Board may be thought to bring him or the Company into disrepute; or (iii) becomes incapacitated by illness or injury of any kind which prevents him from performing his duties for a period of six consecutive months or any periods aggregating six months in any period of 12 months during his employment. On termination of his contract, Chris Fraser is entitled to a payment equal to a minimum of one month of his then base salary for every year of employment by the Company, pro-rated for any part year of service, and Thomas Staley is entitled to a payment equal to a notice period of six months.

### **7.2 Non-executive Directors' terms of appointment**

#### *7.2.1 General terms*

The following Directors have agreed terms of appointment with the Company as follows:

<b>Name</b>	<b>Position</b>	<b>Date of appointment</b>	<b>Date of expiry of current appointment period</b>
Russell Scrimshaw .....	Non-Executive Chairman	19 December 2010	19 December 2017
Noel Harwerth .....	Senior Independent Director	27 July 2015	27 July 2017
Keith Clarke CBE .....	Independent Non-Executive Director	23 December 2013	23 December 2017
Louise Hardy .....	Independent Non-Executive Director	12 May 2016	12 May 2017
Lord Hutton .....	Independent Non-Executive Director	18 January 2012	18 January 2018
Jane Lodge .....	Independent Non-Executive Director	27 July 2015	27 July 2017

Russell Scrimshaw as Chairman of the Board is entitled to receive an annual fee of £180,000.

Each of Keith Clarke CBE, Louise Hardy, Noel Harwerth, Lord Hutton and Jane Lodge is entitled to receive an annual fee of £45,000. Non-executive directors will also be entitled to receive an additional fee if they are appointed to serve on the Audit Committee, Remuneration Committee or Nominations Committee, at an annual rate of £4,000 per committee, or £8,000 if they are chairing a committee. For her role as Senior Independent Director, Noel Harwerth is entitled to receive an annual fee of £8,000.

In addition, the Chairman and the Non-Executive Directors are entitled to be reimbursed for reasonable expenses properly incurred arising from the performance of their duties as a director of the Company.

#### *7.2.2 Termination provisions*

The appointment of each of the Non-Executive Directors and the Chairman is terminable by either the non-executive Director or the Company on three months' notice. The non-executive directors are not entitled to compensation on termination of their respective contracts.

A non-executive Director's appointment shall also terminate if the Non-Executive Director is not re-elected at any annual general meeting.

### 7.3 Directors' remuneration

Under the terms of their respective service agreements, letters of appointment and applicable incentive plans, the remuneration and benefits to the directors of the Company who served during 2016, in respect of the year ended 31 December 2016, were as follows:

Name	Position	Basic Salary or Fees	Gain/Loss on Warrant Exercise	Share Payment	Benefits in kind/ Other Benefits	Total
		£				
Russell Scrimshaw.....	Chairman	50,000	N/A	N/A	N/A	50,000
Chris Fraser.....	Chief Executive Officer	360,000	N/A	287,000	12,000	674,000
Thomas Staley.....	Chief Financial Officer	220,000	N/A	183,000	N/A	403,000
Noel Harwerth.....	Senior Independent Director	31,000	N/A	N/A	N/A	31,000
Keith Clarke CBE.....	Independent Non-Executive Director	25,000	N/A	N/A	N/A	25,000
Lord Hutton.....	Independent Non-Executive Director	25,000	N/A	N/A	N/A	25,000
Jane Lodge.....	Independent Non-Executive Director	33,000	N/A	N/A	N/A	33,000
Louise Hardy.....	Independent Non-Executive Director	16,000	N/A	N/A	N/A	16,000
Stephen Pycroft <sup>(1)</sup> .....	Non-Executive Director	9,000	N/A	N/A	N/A	9,000

#### Notes:

(1) Stephen Pycroft resigned as a member of the Board of Directors on 12 May 2016.

For the financial year ended 31 December 2016, the aggregate remuneration (including salaries, fees, pension contributions, bonus payments and benefits in kind) granted to the Directors by the Company was £1.2 million.

### 7.4 No conflicts

There are no potential conflicts of interest between each of the Directors' duties to the Company and their respective private interests and any other duties. No Director or officer has a family relationship with any other Director or officer. There is no interest, including any conflicting interest that is material to the Company.

### 7.5 Senior Management's remuneration

The aggregate amount of remuneration paid (including any contingent or deferred compensation), and all benefits in kind granted to each member of the Senior Management (excluding the Executive Directors) by the Company and its subsidiaries for services in all capacities for the financial year ended 31 December 2016 was £1.9 million (excluding exchange rate fluctuations for U.S. dollar salary payments).

### 7.6 Other arrangements

There is no arrangement under which a Director and a member of Senior Management have waived or agreed to waive future emoluments nor have there been any such waivers during the financial year immediately preceding the date of this Prospectus.

There are no outstanding loans or guarantees granted or provided by any member of the Group to, or for the benefit of, any of the Directors and members of the Senior Management.

Simon Carter and Thomas Staley have relocated from Australia to the UK for their roles in the Company. They are entitled (provided that they fulfil the relevant eligibility criteria under their respective contracts) to additional benefits as a result of their relocation, such benefits being the costs associated with relocating them and their families back to Australia or New Zealand (in the case of Simon Carter).

Other than as described in paragraphs 7.1 ("*Executive Directors' service contract*"), 7.2 ("*Non-executive Directors' terms of appointment*"), and 7.3 ("*Directors' remuneration*") of this Part 12, no benefit, payment or compensation of any kind is payable to any Director or member of Senior Management upon termination of his or her employment.

## 8. EMPLOYEE SHARE PLANS

The Company operates the following employee share plans and employee share incentive arrangements (the **Share Plans**):

- the Sirius Minerals plc Company Share Option Plan;
- the Sirius Minerals plc Unapproved Share Option Plan;
- the Sirius Minerals plc Share Based Incentive Plan;

- the Sirius Minerals plc Incentive Option Scheme; and
- the Sirius Minerals plc Milestone Awards.

A summary of the key provision of each of the Share Plans is set out below.

### **8.1 The Sirius Minerals plc Company Share Option Plan (CSOP)**

#### *General*

The CSOP is a share option scheme administered by the Board under which eligible employees may be granted options (**Options**) over Shares on a tax-favoured basis. The Board has discretion to determine whether, and if so when, the CSOP will operate. CSOP options may be satisfied using new issue and/or existing shares.

#### *Eligibility*

All employees of the Company and those Directors who devote a minimum of 25 hours per week to their duties and who, in the case of an option granted under the CSOP only, are not precluded from participating in the CSOP due to the material interests exclusion under Part 4 of Schedule 4 of the Income Tax (Earnings and Pensions) Act 2003, are eligible to participate in the CSOP.

#### *Grant of Options*

The Board may, at its discretion, grant an Option to any eligible employee until the tenth anniversary of the date of adoption of the CSOP (28 March 2011). No Option may be granted during a close period of the Company. Options are not transferable (other than on the death of a participant), assignable or chargeable and will lapse immediately in the event of any breach of the transfer prohibition. Benefits under the CSOP are not pensionable. No consideration will be payable by participants on the grant of an Option. Until a participant acquires any Shares subject to an award, the participant has no rights to the Shares subject to an Option, including voting or dividend rights.

#### *Performance Conditions*

The exercise of an Option may be subject to performance conditions or any other conditions determined by the Board. Any performance conditions must be objective and stated in writing at the date of grant of the Option.

#### *Option Price*

The price per Share payable on exercise of an Option (the **Option Price**) will be determined by the Board at the time of grant, but will not be less than the higher of: (i) the market value of a Share on the date of grant of the option determined in accordance with Part VIII of the Taxation of Chargeable Gains Act 1992 and agreed in advance with HMRC Shares and Assets Valuation; and (ii) in the case of an option to subscribe for Shares, the nominal value of a Share. The Option Price may be adjusted (in accordance with the applicable legislation) to take account of any variation in the Company's ordinary share capital.

#### *Individual Limits*

An individual's overall participation under the CSOP will be limited so that the aggregate market value (calculated at the date of grant of the Option) of the Shares comprised in subsisting Options granted under the CSOP and any other HMRC tax-advantaged company share option plan established by the Company or by an associated company (except savings-related schemes) cannot exceed £30,000.

#### *Plan Limits*

There is no limit in the CSOP on the number of shares available under the CSOP.

#### *Exercise of Options*

An Option may be exercised in whole or in part in respect of no fewer than the lesser of (i) 25 per cent. of the Shares over which the Option was originally granted and (ii) the total number of Shares over which the Option remains exercisable at that time on or after the third anniversary of the date of grant, provided that the participant is still a director or employee of a participating company or associated company and provided that any conditions to which the options are subject are satisfied. Options will lapse on the tenth anniversary of the date of grant. Following the date of exercise, Shares must be issued or transferred to the participant within 30 days.

### *Leavers*

Options may be exercised, subject to the satisfaction of any conditions imposed, during the period of six months after the date of cessation if the participant ceases to be an employee by reason of illness, injury, disability, redundancy or retirement, a relevant transfer within the meaning of the Transfer of Undertakings (Protection of Employment) Regulations 2006, or a participant holding office or being employed in a company which is, and then ceases to be, controlled by the Company. If the participant ceases to be an employee for any other reason, the Option will lapse on the cessation of employment. On the death of a participant, any option held can be exercised by the participant's personal representatives within 12 months of the date of the participant's death and any conditions imposed will be waived.

### *Corporate Events*

Options may normally be exercised early if: (i) any person obtains control of the Company as a result of a general offer to acquire Shares; (ii) a person (or a group of persons acting in concert) becomes bound or entitled to acquire Shares by serving a notice under sections 979-982 of the Companies Act; or (iii) a scheme of arrangement in connection with the acquisition of Shares is sanctioned. Alternatively, with the consent of the acquiring company, options may be exchanged for equivalent rights to acquire shares in the acquiring company, provided that the replacement options are offered on the same terms as the original options and issued within six months of the relevant event or, in the case of a section 979 notice, within the period during which the acquiring company is bound or entitled to acquire the Shares. Options may also be exercised early in the event of a voluntary winding-up of the Company.

### *Rights Attaching to Shares*

Shares issued to satisfy Options under the CSOP will rank equally in all respects with other Shares of the same class in issue on the date of allotment. They will not rank for any rights attaching to Shares by reference to a record date preceding the date of allotment. Where Shares are transferred on the exercise of an option, optionholders are entitled to all rights attaching to the Shares by reference to a record date after the transfer date, but will not be entitled to rights before that date.

### *Variation of Capital*

In the event of a variation in the equity share capital of the Company, including a capitalisation or rights issue, sub-division, consolidation or reduction, the Board may adjust the number of Shares subject to the Option and/or the Option Price, provided that the total option price must remain substantially the same, the exercise price is not reduced below its nominal value, and, following the adjustment the Shares continue to satisfy the requirements of Part 4 of Schedule 4 of the Income Tax (Earnings and Pensions) Act 2003.

### *Amendments*

The rules of the CSOP may be amended by the Board in any respect. However, no amendment can be made (i) which would materially affect participants in relation to options granted before the amendment was made; and (ii) to a provision of the plan rules required by legislation which would make the terms on which options were granted materially more difficult to satisfy. In addition, any amendments to provisions required by legislation must be notified in the Company's return for the tax year. The Company has to give written notice of any amendments to participants.

## **8.2 The Sirius Minerals plc Unapproved Share Option Plan (USOP)**

Other than as set out below, all provisions of the CSOP summary apply to the USOP. Apart from any National Insurance election required for the exercise of an Option, there will be no need to seek HMRC approval or agreement for anything done under the USOP, and references to Part 4 of Schedule 4 of the Income Tax (Earnings and Pensions) Act 2003 and to events occurring by reference to HMRC approval or agreement can be ignored. Shares under the USOP will not be acquired on a tax-favoured basis.

### *Eligibility*

There are no eligibility requirements for participants under the USOP.

### *Individual limit*

The individual limit noted above does not apply to the USOP.

#### *Company reorganisation*

The rules in relation to replacement options noted above do not apply to the USOP.

### **8.3 The Sirius Minerals plc Share Based Incentive Plan (SBIP)**

The SBIP is a discretionary share plan. Under the SBIP, the Board, or a duly authorised committee of it, may grant awards over Shares (**Awards**) to selected employees and executive directors of the Group.

Awards may take the form of:

- nil-cost options over Shares (**SBIP Options**);
- conditional rights to acquire Shares (**Conditional Share Awards**); or
- jointly-owned equity awards, under which an employee acquires Shares jointly with the trustee of the Company's employee benefit trust, where the employee has an interest in the future growth in value of the jointly-owned Shares. In addition, the trustee may grant the employee a nil-cost option (**JOE Award Option**) to acquire the trustee's interest in the Shares (the interest and any applicable JOE Award Option comprising a **JOE Award**).

Awards may be satisfied by the issue of new shares or by the transfer of shares held in treasury or held by the trustee.

#### *Eligibility*

All individuals who are employees of the Group at the date the Award is made are eligible to participate in the SBIP. Participation is at the discretion of the Board.

#### *Grant of Awards*

Awards may be granted at any time (unless restrictions on dealings in Shares have been imposed by statute or other regulatory rules) until the tenth anniversary of the date of adoption of the SBIP (25 May 2015).

No payment is required for the grant of an Award and Awards are not transferrable (other than on the death of a participant), assignable or chargeable. Benefits under the SBIP are not pensionable.

#### *Performance Conditions*

Awards may be subject to performance conditions or any other conditions determined by the Board. Any targets or conditions must be objective.

The performance targets applying to an Award may be varied, substituted or waived if the Board considers a target no longer appropriate, provided the Board considers that the new performance condition is reasonable in the circumstances and, except in the case of waiver, produces a fairer measurement of performance and is not materially less difficult to satisfy than the original condition.

#### *Limits*

There is no limit on the number or quantum of Awards which may be made to an individual and there is no limit on the number of Shares which may be issued under the SBIP.

#### *Vesting and Exercise*

Awards will normally vest on the latest of the vesting date determined at the time of grant of the Award and the date on which the Board determines that any performance target or other conditions have been satisfied.

SBIP Options that have vested can be exercised at any time during the exercise period set by the Board, with any unexercised part of a vested SBIP Option remaining exercisable at any time. An individual becomes entitled to the shares to the extent that a Conditional Share Award has vested, and becomes entitled to exercise/realise his rights to the extent that a JOE Award has vested based on the terms of the relevant JOE Award documentation.

#### *Leavers*

Except in certain circumstances as set out below, an Award will lapse immediately upon a participant ceasing to be employed by or holding office with the Group.

In addition, an Award will not vest and an SBIP Option may not be exercised if a participant has given or received notice to terminate such office or employment.

If a participant ceases to be employed because of his death, illness, injury, disability, redundancy, retirement with the agreement of his employer, being employed by a company which ceases to be a Group company or a relevant transfer within the meaning of the Transfer of Undertakings (Protection of Employment) Regulations 2006, his Award will vest immediately. The proportion of the Award which will vest will be determined as set out in the relevant Award documentation.

The time period in which the Awards are then to be exercised will usually be six months after the date of cessation of employment (12 months in the case of death) or such other dates as the Board may specify but which may not be later than the original dates specified in the relevant Award document. Awards will lapse at the end of this period.

If a participant ceases to hold office or employment outside of the circumstances set out above, the Board may in its absolute discretion determine that his Award will vest at such a level and, where applicable, will remain exercisable for such a period as the Board may determine.

#### *Corporate Events*

SBIP Options may normally be exercised early if:

- any person obtains control of the Company as a result of a general offer to acquire Shares;
- a person (or a group of persons acting in concert) becomes bound or entitled to acquire Shares by serving a notice under section 979-982 of the Companies Act 2006; or
- a scheme of arrangement in connection with the acquisition of Shares is sanctioned.

If the Board is aware that a corporate event is likely to occur, it may determine that the Awards will vest immediately prior to the event taking place.

Alternatively, if there is a corporate event resulting in a new person or company acquiring control of the Company, the Board may, with the consent of the acquiring company, decide that Awards will not vest or lapse but will be replaced by equivalent new awards over shares in the new acquiring company.

SBIP Options may also be exercised early in the event of a voluntary winding-up of the Company.

#### *Rights Attaching to Shares*

Shares issued and/or transferred under the SBIP will rank equally in all respects with other shares of the same class in issue at the date of issue or transfer. They will not rank for any rights attaching to shares by reference to a record date prior to the date of such issue or transfer.

#### *Variation of Capital*

In the event of a variation of share capital of the Company or in the event of a demerger or other distribution, special dividend or distribution, the Board may make such adjustments to Awards granted under the SBIP, including the number of shares subject to Awards and the SBIP Option exercise price (if any), as it considers to be fair and reasonable.

#### *Amendments*

The rules of the SBIP may be amended by the Board in any respect, so long as this does not adversely affect the rights of existing participants, except where the affected participant has approved the amendment.

### **8.4 The Sirius Minerals plc Incentive Option Scheme (IOS)**

#### *General*

The IOS is a share option scheme administered by the Board under which participants may be granted options (**Incentive Options**) entitling the holder to subscribe for and be issued Shares. The Board has discretion to determine whether, and if so when, the IOS will operate. Incentive Options have been granted under individual option agreements setting out their terms. Incentive Options are not transferable.

#### *Incentive Option Price*

The price per Share payable on exercise of an Incentive Option will be determined by the Board at the time of grant.

#### *Plan Limit*

There is no limit in the IOS option agreements on the number of shares available under the IOS, nor on the number of shares subject to IOS options which may be granted to any individual.

### *Vesting and Exercise*

Incentive Options will normally vest on the vesting date determined by the Board at the time of grant. Incentive Options that have vested can be exercised in whole or in part at any time during the exercise period set by the Board and will lapse on the expiry date specified in the option agreement. Following the date of exercise, Shares must be issued or transferred to the participant as soon as possible.

### *Leavers*

Except in certain circumstances as set out below, an Incentive Option will lapse immediately upon a participant ceasing to be employed by or holding office with the Group.

If a participant ceases to be employed because of his death, illness, injury, disability, redundancy, retirement, being employed by a company which ceases to be a Group company or a relevant transfer within the meaning of the Transfer of Undertakings (Protection of Employment) Regulations 2006, his Incentive Options will vest in full immediately.

Incentive Options can then be exercised at any time until the expiry date specified in the option agreement, or within 12 months in the case of death. Incentive Options will lapse at the end of this period.

### *Corporate Events*

Incentive Options may normally be exercised early if:

- any person obtains control of the Company as a result of a general offer to acquire Shares;
- a person (or a group of persons acting in concert) becomes bound or entitled to acquire Shares by serving a notice under section 979-982 of the Companies Act 2006; or
- a scheme of arrangement in connection with the acquisition of Shares is sanctioned.

### *Rights Attaching to Shares*

Shares issued to satisfy Incentive Options under the IOS will rank equally in all respects with other Shares of the same class then in issue.

### *Variation of Capital*

In the event of a variation in the share capital of the Company, the Board may adjust the number of Shares subject to the Incentive Option and/or the exercise price as it considers to be fair and reasonable.

## **8.5 The Sirius Minerals plc Milestone Awards**

The Company has granted “Milestone Awards” to Thomas Staley, Nicholas King and Simon Carter. As set out in their employment contracts, the participants will receive, subject to their continued employment, a set number of Shares on the completion of agreed commercial, financial and operational milestones for the Company.

## **8.6 The Sirius Minerals plc Employee Benefit Trust**

The Company has established the EBT to facilitate and encourage the ownership of Shares by or for the benefit of employees of the Group. The trustee of the EBT may acquire Shares by subscription or purchase, funded by way of contributions from or loans made by the Company and may distribute the shares it acquires under the Share Plans and other employee share incentive arrangements operated by the Company. The EBT currently holds 4,772,732 Shares, which are held jointly by the trustee and JOE Award holders under the JOE Awards.

The beneficiaries of the EBT are the employees and former employees of the Group and the spouses and dependants of such employees and former employees. The EBT trust deed may be amended by the Company and the trustee (as appropriate) but no amendment will have the effect of causing the EBT to cease to be an employees’ share scheme within the meaning of section 1166 of the Companies Act, or an employee trust within the meaning of section 86 of the Inheritance Tax Act 1984.

The trustee is Sanne Fiduciary Services Limited, which is incorporated in Jersey and is non-resident for UK tax purposes. The general operation of the EBT is monitored by the remuneration committee which is comprised solely of non-executive Directors.

## 9. PRINCIPAL SUBSIDIARIES AND SUBSIDIARY UNDERTAKINGS

Sirius Minerals plc is the principal operating and holding company of the Group. The following table shows the principal subsidiaries and subsidiary undertakings of the Company which it considers are likely to have a significant effect on the assessment of its own assets and liabilities, financial position or profits and losses.

Name	Country of incorporation/ residence	Proportion of capital held (percentage)	Principal Activity
York Potash Limited .....	UK	100	Resource evaluation and exploration
York Potash Processing & Ports Limited ..	UK	100	Hold options to purchase land
York Potash Holdings Limited .....	UK	100	Corporate operations
Sirius Minerals Holdings Limited .....	UK	100	Corporate operations
Sirius Minerals Finance Limited .....	Jersey	100	Corporate operations
Sirius Exploration Limited .....	UK	100	Dormant
Sirius Resources Limited .....	UK	100	Dormant
Sirius Potash Limited .....	UK	100	Dormant
SACH 1 Limited .....	UK	100	Corporate operations
SACH 2 Limited .....	UK	100	Corporate operations
Dakota Salts LLC .....	U.S.	100	Resource evaluation and exploration
Sirius Minerals (Singapore) Pte Limited ...	Singapore	100	Corporate operations
Sirius Minerals (Australia) Pty Limited ....	Australia	100	Corporate operations
Auspotash Corporation Limited <sup>(1)</sup> .....	Canada	100	Holds investments

**Note:**

(1) As at 31 December 2015, this entity has ceased operations.

## 10. PROPERTIES AND ASSETS

The Group occupies the following properties:

Property Location	Current Use	Owned/ Leased	Lease End
3rd Floor, Greener House, 66-68 Haymarket, London SW1Y 4RF .....	Office	Leased	28 September 2019
Prospect House, Dunslow Road, Seamer Scarborough YO11 3YU .....	Office	Leased	29 February 2032
5-6 Manor Court, Manor Garth, Scarborough YO11 3TU .....	Office	Leased	28 June 2017
7-10 Manor Court, Manor Garth, Scarborough YO11 3TU .....	Office	Leased	28 June 2017
Units 5 and 5A, Ground Floor Unit, 5 Plaxton Park, Cayton Low Road, Scarborough YO11 3BY .....	Storage	Leased	24 December 2020
Woodsmith mine, Sneatonthorpe, Whitby, YO22 5HZ .....	Mine site awaiting building works/ construction	Owned	N/A

Besides the properties set out above, please refer to paragraph 9 (“*Leases, Licences and Permitting*”) of Part 7 (“*Business Description*”) of this Prospectus for details of the Group’s existing and/ or planned material tangible fixed assets. There are no major encumbrances on any of the Group’s properties or material tangible fixed assets.



Apart from the requirement to fulfil various conditions relating to the grant of planning permissions in connection with the Project, the Company is not aware of any environmental issues that will affect the Group's utilisation of the tangible fixed assets.

## **11. MATERIAL CONTRACTS**

Set out below is a summary of (i) each material contract (other than a contract entered into in the ordinary course of business) to which a member of the Group is or has been a party within the two years immediately preceding the date of this Prospectus which is, or may be, material; and (ii) any other contract (other than a contract entered into in the ordinary course of business) that has been entered into by a member of the Group which contains any provision under which it has any obligation or entitlement which is material to the Group as at the date of this Prospectus.

### ***11.1 Mineral Rights Agreements***

Typically, mineral rights (other than gold, silver and coal reserves) are owned by the freehold owners of the relevant land unless a previous owner excluded the mineral rights from a subsequent sale of the land. All offshore mineral rights are held by the Crown. The Group benefits from mineral rights agreements which provide it with rights to all evaporates, including potash, polyhalite, halite and inter-mingled minerals, below a depth of 800 metres from the surface within the Project's area of interest both onshore and offshore. Individually, each mineral rights agreement is not material to the Company's ability to mine polyhalite, given its ability to mine in other neighbouring areas; however, taken together they form the basis of the Company's rights to all evaporates in the Project area as described in this Prospectus.

#### ***11.1.1 Dove's Nest Farm Overage Payment Agreement***

The above-ground mining facilities to be constructed as part of the Project development will be located at the Woodsmith mine head site, which sits 3.5 kilometres southwest of Whitby. The part of the mine head site, which was formerly known as Dove's Nest Farm, was split into the Northern Land and the Southern Land. Pursuant to a land purchase and option agreement, YPL purchased the freehold Northern Land from the land owners on 14 December 2012 and the freehold Southern Land on 24 October 2013. Although YPL is now the freehold owner of the Woodsmith mine head site, it is required under the terms of the Overage Payment Agreement to make royalty payments to the previous land owners in connection with mineral rights under what was formerly the Dove's Nest Farm site.

Pursuant to the Overage Payment Agreement, additional mineral rights payments are to be calculated and agreed between the parties, acting in good faith, and paid by YPL in quarterly instalments (based on the royalty rate per hectare of the relevant surface area). The terms governing the mineral rights follow similar template terms as agreed between YPL and other small mineral rights owners, as described in paragraph 11.1.2 ("Small Mineral Owners Mineral Lease Agreement") of this Part 12.

In addition, pursuant to the Overage Payment Agreement, YPL has:

- (a) undertaken not to make any disposal of any part of the property at any time without first procuring that the person to whom the disposal is being made has executed a deed of covenant, containing obligations on such person to comply with any covenants on YPL as outlined in the Overage Payment Agreement;
- (b) applied for a restriction against YPL's title to the property at the Woodsmith mine site to ensure that no disposal of the registered estate nor any registered charges be effected without the written consent of the previous owners of the Woodsmith mine site.
- (c) The previous owners have agreed to provide their written consent for the registration of a disposal at the Land Registry immediately upon receipt of a deed of covenant properly executed by the person to whom the disposal is being made. YPL has agreed to provide for any legal costs or disbursements incurred by the previous land owners in connection with any deed of covenant, the entry and withdrawal of each restriction against the title to the property and any written consent required for each disposal.

#### ***11.1.2 Small Mineral Owners Mineral Lease Agreement***

YPL has agreed a form of mineral lease with approximately 445 small mineral owners and is in the process of entering into the mineral leases with each small mineral owner.

Under the agreed form mineral lease, YPL as tenant must pay to the mineral owner as landlord until the end of the term or earlier determination of the lease, the “certain rent” from the date of the lease until the quarter end date following the first date upon which any sale product is available for sale from the Project. The term is 70 years from the date of the lease and the “certain rent” is an annual amount equal to the amount of the option fee last paid by YPL under existing option agreements with the small mineral owners referred to above. From the sale commencement date, the amount payable by YPL to the landlord is the greater of (i) the “certain rent” comprising of an annual amount of £1,250 plus £75 per hectare of the lease surface area; and (ii) the royalty for each payment period (being the period starting on a payment day and ending the day before the next payment day). The royalty is payable in respect of any sale product attributable to the minerals in the lease area and is tied to the gross sale receipts received by YPL in the three months immediately before the relevant payment day.

The “certain rent” is subject to review on each review date, such review date being (i) each anniversary of the commencement date of the lease (if the sale commencement date has not occurred); or (ii) the sale commencement date and each anniversary of the sale commencement date during the term of the lease, as relevant. In reviewing the “certain rent”, the parties must take into consideration the retail price index figure at the relevant time.

In consideration of the “certain rent”, any royalty payable and the covenants provided by YPL to the landlord, the landlord demises to YPL all the minerals in the lease area, comprising all the evaporites including potash and polyhalite (the demised minerals), together with the rights necessary or convenient for obtaining the benefit of the rights granted by the lease.

The covenants given by YPL include: (i) keeping the landlord indemnified against all losses in respect of damage or losses occasioned directly or indirectly to the lease area or of YPL’s working of the demised minerals or YPL’s exercise of its rights; (ii) effecting and maintaining public liability insurance covering all public liability claims howsoever arising in connection with the lease for an amount not less than that determined by an independent risk assessor (and reviewed every 5 years) provided the minimum is not less than £10 million; and (iii) prior to exercising its rights, setting up either a company limited by guarantee or a trust whose mandate shall be to hold and operate a fund financed by YPL which is intended to survive the closure of the mine to meet the costs of claims by the landlord in respect of damaging subsidence or damage or injury to person or property arising from or attributable to *inter alia*, the extraction of the demised minerals.

After expiry of the sixtieth year of the term of the lease but before the expiry of the sixty-ninth year, YPL may serve written notice to the landlord for a further lease of the demised minerals and the associated rights. The new lease shall be a term of 60 years from the date of the expiry of the term of the prior lease and shall be upon the same terms and conditions but without an option to further renew the lease.

The landlord may forfeit the lease if the “certain rent” or the royalty remains unpaid 60 days after YPL receives notice that it is overdue. YPL may terminate the lease at certain points during the term and/ or on the occurrence of certain events, such as at the expiration of the fifth year of the term, any subsequent fifth anniversary, or the exhaustion of the demised minerals.

To date 438 small mineral owners have entered into a mineral lease in the form described above and YPL is pursuing a further seven small mineral owner leases and has extended the relevant option periods in order to do so. To the extent that any of the small mineral owners do not enter into the form of mineral lease described above, the Company will exercise its existing option which provides for a lease to be granted on substantially the same terms, save that the option to renew the lease granted under the existing option is for a further period of 70 years.

#### *11.1.3 Crown Offshore Minerals Agreement*

YPL has a lease of rights to work all of the minerals from a specified part of the bed of the sea at Hundale. The rights are granted by Her Majesty the Queen and The Crown Estate Commissioners (as long as the reversionary interest in the rights and minerals forms part of The Crown Estate) (together referred to herein as the **Crown Estate**) and include (i) the exclusive right to enter the relevant property and to search for and work by underground methods only and to raise, convert, extract, sell and dispose of all the minerals such as potash, polyhalite, salt and intermingled minerals; (ii) the right to use voids formed within the property for backfilling and storage of mine and processing waste; and (iii) the right to constrict, install and operate all engineering, mechanical, mining or structural work and equipment on and under the property and to lower the seabed for the sole purpose of and only to the extent necessary to exercise the abovementioned rights.

The term of the lease is 70 years from 26 July 2016. The rent payable under the lease is and is subject to annual review and will be increased on each anniversary of the term start date according to a specified formula on each review date. The rent will also increase by a fixed amount upon either the fourth anniversary of the term start date or the completion of the first mine shaft intended for use to exercise the abovementioned rights. A royalty, the amount of which is linked to the amounts received or receivable by YPL from the sale of or other dealing which are attributable to the minerals sold, is also payable under the lease for each period of six months ending on each rent payment date.

YPL may terminate the lease on each fifth anniversary of the term start date by giving at least 12 months' written notice to the Crown Estate, provided that (i) rental payments remain due; (ii) no rights granted under the lease are being exercised; and (iii) YPL is complying with its obligations under the lease. The Crown Estate has a right to terminate the lease where (A) rents remain unpaid for 21 days past their due date; (B) YPL is in material breach of any covenant or condition under the lease; (C) YPL or the Company as guarantor ceases to exist or becomes insolvent; or (D) there is a change of control in respect of YPL to which the Crown Estate has not given its prior written consent (YPL must obtain the Crown Estate's prior written consent to any change of control of YPL or the Company). Such Crown Estate's consent shall not be unreasonably withheld, where in the Crown Estate's reasonable opinion, YPL and the Company will continue to have both the financial strength and technical expertise to properly comply with YPL's obligations. The Crown Estate's consent in respect of a change of control or an assignment is not effective unless given as a formal licence executed as a deed.

YPL must pay and indemnify the Crown Estate against *inter alia*, all rates and taxes payable at any time during the tenancy by the owner or occupier of (or otherwise due in respect of) the property, the works on or under the property and the exercise of the rights (excluding taxes (other than VAT)) payable on rents and the reversionary interest. YPL must also indemnify the Crown Estate against claims and losses connected with: (i) the exercise of rights; (ii) the state of repair and condition of the works on or under the property; (iii) any act, neglect or default of YPL (or anyone deriving title/authority through YPL); (iv) YPL's breach of covenants or other provisions of the lease; or (v) the presence or state of repair of the works on or under the property or alterations.

In addition, YPL must effect and maintain third party and public liability insurance in respect of the rights and the works on or under the property. YPL must also (i) use its best endeavours to develop and exploit the minerals; (ii) exercise its rights to the Crown Estate's satisfaction in accordance with best practice; and (iii) obtain the best available price on the sale of minerals.

The Company has also provided usual covenants in favour of the Crown Estate relating to, *inter alia*, making good to the Crown Estate on demand on a full indemnity basis all losses, damages, costs and expenses arising from YPL's default of its obligations.

#### *11.1.4 Large Landowners Mineral Rights Leases*

Between 29 September 2016 and 7 December 2016 YPL entered into eight leases with large landowners over land containing minerals such as potash, polyhalite, salt and intermingled minerals in the County of North Yorkshire. The material terms of the leases (which were entered into through the exercise of option agreements between YPL and the large landowners) are broadly similar. Under four of the leases, a royalty is payable in respect of any sale product attributable to the minerals mined in the area covered by the lease. The calculation of the royalty is linked to the gross sales receipts received in the three months immediately before the relevant payment date.

The land areas subject to the leases vary, ranging from approximately 490 hectares to approximately 2,600 hectares.

Material obligations of YPL are that it has to obtain planning permission for the extraction of the demised minerals and that YPL must consult with all relevant statutory bodies affected by the development. YPL must also indemnify and keep indemnified the grantor against all losses arising directly or indirectly from its exercise of the rights in the lease. YPL must obtain and maintain a public liability policy with a reputable insurance company for a sum not less than £10 million in respect of any one claim arising from its exercise of the rights granted to it by the lease.

The leases substantially follow the form of lease to be entered into with the small mineral owners referenced in paragraph 11.1.2 ("*Small Mineral Owners Mineral Lease Agreement*") above have been entered into, such that the terms are materially consistent across all eight leases.

## 11.2 MTS Option Agreements

The MTS is an integral part of the Project infrastructure, and will carry the mined polyhalite from 360 metres underground at the mine site to the MHF at Wilton International on a high capacity conveyor system in a 37 kilometre underground tunnel. YPL has option agreements in place with the majority of known landowners to acquire long leasehold interests along the MTS route to allow the construction of the underground system to transport minerals and other materials in connection with its mining activities. YPL is in the process of carrying out title due diligence in readiness to convert the options into leases. The options and associated leases relate to a linear route for the MTS and as such these agreements are material to ensuring continuity for construction of the MTS.

### 11.2.1 Main MTS Landowners Freehold and Leasehold Option Agreements

YPL has four option agreements relating to freehold and leasehold land to be used for the construction and operation of the MTS access shafts and extracted mineral storage and disposal facilities relating to land at Whitby, Tockett's Lythe, Lockwood Beck and Low Moor, Egton sites. The material terms of the option agreements are broadly similar, and in consideration of an initial option sum, YPL has been granted options to (i) purchase freehold land for a specified purchase price and/or (ii) take a lease of land for a specified rent subject to the terms in the option agreements. In addition to payment of the initial option sum to the various grantors, YPL must pay each grantor a sum equal to the initial option sum on each anniversary of the date of the agreement, or, in the case of the option relating to the site at Tockett's Lythe, on the first and second anniversary of the date of the agreement. The only option agreement that does not require payment of an ongoing option fee is the option relating to the site at Lockwood Beck.

In order to exercise an option, YPL has to obtain planning consent for the MTS (which it has done) and serve on a grantor an option notice in the form scheduled to the agreement, together with *inter alia*, a lease plan which shall show the area to be demised by the lease and the lease term commencement date.

With the exception of the option agreement relating to a site at Whitby in North Yorkshire (the **Whitby Option Agreement**), the option period under each agreement is the period of three years from and including the date of each agreement. The option periods under the four option agreements end between April and October 2017. In the event that YPL has not secured funding for the MTS on or before 29 September 2016, it may serve notice on the grantor stating the same and upon service of the notice, the option period will be automatically extended for a further five years (four years for the Lockwood Beck option agreement). An extended option amount is payable under the option agreements relating to the sites at Tockett's Lythe and Lockwood Beck. As YPL had not secured funding on or before 29 September 2016, YPL served notice to extend the option period for a further five years.

YPL may terminate the agreements at any time by giving at least six months' notice to the grantor, provided that on the date of service of the notice to terminate, an option notice has not been served. In the case of one agreement (option to purchase freehold land at another site in Whitby), the grantor also has the right of termination if YPL has not paid the annual option fee within 21 days of its due date for payment and certain other conditions relating to non-payment are satisfied.

Other material obligations of YPL are that it must use reasonable endeavours to submit an application for planning consent within 12 months of the date of the agreement (which YPL has done and planning consent has been obtained); further, YPL must send to the grantor full copies of such application and any planning decision notice relating to the MTS as soon as reasonably practicable. Under the Tockett's Lythe agreement, YPL also has to indemnify the grantor in relation to any monies that the grantor must pay to the Rural Payments Agency and/ or Natural England under a separate agreement relating to the site at Tockett's Lythe that arises directly from the exercise of the option.

Under the Lockwood Beck option agreement, when certain conditions (such as YPL fulfilling all the required statutory obligations for planning consent) are satisfied, the grantor also has the right to buy back part of the option land after the option is exercised and require YPL to purchase additional parts of the property on the terms of the agreement.

The Whitby Option Agreement is structured slightly differently in that the grantor may exercise a put option requiring YPL to take a lease of the land and YPL may exercise a call option to take a lease of the land. The call and put option periods begin on the date of the planning authority's decision and the Construction Commencement Date respectively; the end date of the options are tied to *inter*

*alia*, the date that YPL publicly announces the abandonment of the MTS or the date of completion of construction of the MTS.

#### *11.2.2 MTS Landowner Option Agreements*

YPL has entered into option agreements with an agreed form of lease and a deed of variation with approximately 46 land owners (each a landlord) who own land that YPL intends to use in relation to the Project. YPL is in the process of conducting title due diligence and will continue to do so in the second quarter of 2017 in readiness to convert the options into leases. For the purposes of each lease, the Project is comprised of mining and processing facilities to be linked by infrastructure and conduits to enable minerals, mine and processing residues to be transported from the mine head to the MHF along a dedicated and exclusive route. Under the agreed form lease, the key payments to be made by YPL to the landlord are a fixed premium on the date of the lease and a balancing payment within 28 days of completion of construction of a tunnel within the leased land so that it is ready to be used for the transport of minerals to the materials handling facility. In consideration of these payments, the landlord will grant rights to YPL for 70 years beginning on the commencement date of the lease. The main right granted to YPL under the lease is a right of vertical and lateral support from the Landlord's land for the property used to build the abovementioned tunnel.

As soon as practicable following the completion of construction, YPL must inform the landlord of the variation date, such variation date to be 180 days after the completion of construction. On the variation date, the landlord, the landlord's chargee (any lender that is also a party to the lease) and YPL will enter into the agreed deed of variation. The main variation under the deed relates to the definition of property in the lease; under the deed of variation, the property will mean the volume of subterranean land containing the built tunnel, such volume to be measured from the geometric centre of the built tunnel and in accordance with the measurements specified in the deed of variation.

Under the lease, YPL's material obligations are to indemnify and keep indemnified the landlord against all environmental proceedings to the extent that they arise from the rights of YPL or obligations upon YPL created by the lease, and all reasonable and proper costs relating to remediation works. YPL must also effect and throughout the lease maintain a policy of insurance with a reputable insurance company, the minimum level of cover to be not less than £10 million in respect of each and every claim. In addition, within six months of the date of the lease YPL must set up either a company limited by guarantee or a trust whose mandate shall be to hold and operate the compensation fund, such fund to be financed by YPL and which is intended to survive the end of the lease to meet the costs of claims by the landlord in relation to damage or injury to person or property arising from the construction of the tunnel and related infrastructure.

YPL may renew the lease by serving written notice on the landlord not less than six months before the end of the contractual term. If YPL serves a renewal notice, the landlord is to grant and YPL is to accept the grant of a new lease. The new lease will be granted for 60 years from and including the day following the last day of the contractual term and will not contain a right for YPL to renew on the same terms or a right for the landlord to terminate the lease.

YPL may terminate the lease by serving a tenant break notice at any time on the landlord. The lease shall terminate six months after service of such notice. If no works in connection with construction have occurred by the last day of the tenth year calculated from the date of the lease, the landlord may terminate the lease by serving a landlord break notice at any time thereafter (but not after completion of construction of the tunnel). The lease shall terminate six months after service of a landlord break notice (the **Break Date**), but if at the Break Date the completion of construction of the tunnel has occurred then the landlord break notice shall be of no effect.

#### *11.3 MHF and Harbour Facilities Option Agreements*

The MHF will consist of the plant and equipment necessary for a simple and cost-effective granulation process for producing bulk volumes of POLY4. It will be located at the existing Wilton International multi-occupancy chemical manufacturing centre in Redcar, Teesside, thus avoiding the need for additional development (such as the expansion of the power grid) in the NYMNP. In addition, the Project benefits from the mine being located in close proximity to an existing harbour and the Bran Sands development is well located for handling the bulk export of POLY4. Finished products will be transported approximately 3.5 kilometres from the MHF on a covered conveyor system to the riverside and new quay harbour facilities. The MHF and the harbour facilities will be located on land for which the Company or its subsidiaries has an option to acquire the freehold and which the Company expects to acquire prior to constructing the MHF and harbour facilities. The

MHF and the harbour facilities constitute key elements in the overall infrastructure of the Project and, accordingly, are considered material to the successful implementation of the Project by the Company.

#### *11.3.1 Option agreements in relation to MHF and MTS*

YPPPL has three option agreements relating to freehold land to be used to accommodate the buildings and plant required for processing the polyhalite ore for the MHF, along with the tunnel portal for the MTS. The material terms of the three option agreements are broadly similar, and in consideration for an option fee and/or fees in relation to the grant of rights, YPPPL has been granted options to (i) purchase freehold land for a specified purchase price; and (ii) receive a grant of easements and various rights in respect of that freehold land.

In order to exercise an option, YPPPL has to obtain planning consents (which it has done) and serve an option notice upon the grantor during a specified option period. The option period in each option agreement is different and in respect of one of the option agreements, the option period may be extended subject to certain conditions being met and payment of an extension fee. The option periods under the option agreements end between March and April 2017. YPPPL is in the process of exercising and/or extending these options prior to the relevant expiry of the option periods.

The termination rights vary across the option agreements but the main grounds for a grantor to terminate an option agreement include (i) the failure by YPPPL to exercise the option within the specified option period; (ii) the failure by YPPPL to pay any fees when due; (iii) an unrectified substantial breach by YPPPL; and (iv) standard insolvency events in respect of YPPPL. YPPPL may terminate the option agreements at any time by giving notice to the grantors, provided that on the date of service of the notice to terminate, an option notice has not been served.

YPPPL may require the grantors to enter into any planning agreement but must indemnify the grantors against all expenses and liabilities arising out of any such planning agreements. The grantors have agreed to grant YPPPL access to the freehold land to carry out any tests, inspections or surveys provided that YPPPL (i) gives notice to the grantors; and (ii) complies with the conditions specified in the option agreements. In relation to one of the option agreements, the grantor's mortgagees (who are also parties to the option agreement) must remove the restrictions on the freehold land as soon as practicable after the date of the option agreement.

#### *11.3.2 Option agreements in relation to harbour facilities at Bran Sands*

YPPPL has entered into an option agreement and an option deed relating to freehold land to be used for the construction and operation of a harbour facility. The material terms of the option agreement and the option deed are broadly similar, and in consideration for an option fee and/or fees in relation to the grant of rights, YPPPL has been granted options to purchase freehold land for a specified purchase price and/or to request assignment/surrender of two leases.

In order to exercise an option, YPPPL has to obtain the relevant consents, procure transfers of certain permits, serve an option notice upon the grantor during a specified option period and, with respect to the option deed, procure completion of a deed of variation relating to an earlier lease of land at Bran Sands between the grantor and the landlord under the earlier lease. The option periods in the option agreement and the option deed end on 31 March 2017 and 19 January 2019 respectively and the option agreement can be extended upon payment of an extension fee. Notice was served of an intention to exercise the option on 27 March 2017, following which YPPPL is dealing with the pre-conditions to completion and transfer of the freehold land to YPPPL.

The main grounds for the grantor to terminate the option agreements include (i) a material breach by YPPPL; (ii) standard insolvency events in respect of YPPPL; and (iii) failure by YPPPL to procure completion of the deed of variation and/or transfer of permits.

The Company is a guarantor for YPPPL's obligations under both option agreements.

YPPPL has provided typical covenants for agreements of this nature to the grantors, including that YPPPL shall pay and indemnify the grantors from and against all VAT chargeable under the agreements and losses in respect of dangerous substances and non-compliance with environmental law.

#### **11.4 Planning: S106 Agreements**

There are five S106 agreements containing planning obligations relating to the Project. These are:

- with NYMNPA relating to the mine which is to be developed as part of the Development (as defined below), dated 19 October 2015 – the main S106 agreement;
- with NYCC relating to the mine, dated 19 October 2015;
- with RCBC relating to the mine, dated 19 August 2015;
- with RCBC relating to the MHF, dated 13 August 2015; and
- with RCBC relating to the harbour, dated 27 June 2016.

These agreements regulate aspects of the Project's development and include obligations on the Company to pay monetary contributions to offset potential impacts of the development on the environment and to support the surrounding community by, among other things, contributing towards education of the labour force, provision of employment opportunities and improvements in public infrastructure, as well as for reinstatement security in the event mine operations cease. These agreements are summarised in turn.

##### **11.4.1 The Main S106 Agreement – Mine Permission**

###### **(a) Parties and General Provisions**

The main S106 agreement relating to the development as described in the application for planning permission and which is to be carried out pursuant to the planning permission is with NYMNPA. The other parties are the chargee of the land and all land owners bound by the obligations. YPL is a party as owner of some of the land bound at Woodsmith mine site (formerly known as Dove's Nest Farm) and also as the beneficiary of an option in relation to land bound.

The S106 agreement is made pursuant to section 106 of the Town and Country Planning Act 1990, section 1 of the Local Government Act 2011 and section 111 of the Local Government Act 1972.

All the obligations in the agreement bind the "DNF Obligation Land" which is identified on Plan 1 (as defined in and attached to the agreement) and is basically the Woodsmith mine site (formerly known as Dove's Nest Farm). The obligations in respect of reinstatement (see the twelfth bullet list item under paragraph (c) below) also apply to the "Lady Cross Obligation Land", which is the land at Lady Cross required for an interim shaft site.

All the obligations are enforceable by NYMNPA.

No person is liable for breach of any obligations contained in the agreement after they have parted with all their interests in the land to which the breach relates, without prejudice to any prior breach.

All payments to be made under the agreement are index-linked and such payments are further specified in paragraph (c) below. Many of these relate to certain periods of the construction and operation of the mine. These are; "the Construction Period", "Post Construction Period" and "Operational Period", which are all defined in the agreement. The Construction Period effectively commences on the completion of the preparatory site works and finishes upon the latest of several events having occurred, one of these being the MTS being operational. The Post Construction Period commences with the end of the Construction Period and runs for an equivalent length of time to the Construction Period. The Operational Period commences at the end of the Post Construction Period.

The commencement of construction is also defined in the agreement and excludes preparatory works.

The agreement contains expert determination provisions in the event of dispute and various administrative provisions, such as provisions relating to the service of notices, approvals, etc. There is also a good faith and cooperation clause.

###### **(b) Planning Obligations**

The planning obligations which bind the land are contained in schedules 1 and 2 to the agreement. The reciprocal obligations on NYMNPA are contained in schedule 3 to the agreement. The obligations are summarised below. For full details of these obligations reference should be made to the agreement itself.

###### **(c) Schedule 1**

- Notice provisions relating to the Commencement of Construction and various stages of the Development.

- Obligations to pay the Landscaping Ecology Compensation Contribution for impact on the special qualities of the national park: This is an annual contribution of £118,500 plus £118,500 for each year of the Construction Period that has been completed up to an annual maximum of £592,500. These annual payments are payable throughout the Construction, Post Construction and Operational Periods.
- Obligations to pay the Core Policy D Contribution for tree planting: This is an annual contribution of £135,000 plus £135,000 for each construction year (as defined in the agreement) that has been completed up to an annual maximum of £675,000. These annual payments are payable throughout the Construction, Post Construction and Operational Periods.
- Obligations to pay tourism contributions, as follows:
  - Welcome to Yorkshire Tourism Contribution of £200,000 payable within 28 days of Commencement of Construction and on each anniversary thereof until the end of the Post Construction Period;
  - NYMNPA Tourism Contribution (Construction) of £100,000 payable within 28 days of Commencement of Construction and on each anniversary thereof until the end of the Post Construction Period, this is subject to a periodic Tourism Impact Review (funded by YPL) and may be adjusted upwards;
  - NYMNPA Tourism Contribution (Operations) of £100,000 payable within 28 days of the end of the Post Construction Period and on each anniversary thereof until the end of the Operational Period;
  - Local Businesses Tourism Contribution of £50,000 payable within 28 days of Commencement of Construction and on each anniversary thereof until the end of the Post Construction Period;
  - VisitEngland Tourism Contribution of £50,000 payable within 28 days of Commencement of Construction and on each anniversary thereof until the end of the Post Construction Period;
  - VisitBritain Tourism Contribution of £50,000 payable within 28 days of Commencement of Construction and on each anniversary thereof until the end of the Post Construction Period;
  - Signage Contribution of £400,000 payable within 28 days after the third anniversary of Commencement of Construction or the date a signage scheme is agreed, whichever is the earlier; and
  - Whitby (SBC) Tourism Contribution of £50,000 payable within 28 days of Commencement of Construction and on each anniversary thereof until the expiry of ten years from the end of the Construction Period.
  - Archaeological data contribution of £22,500 is payable within 28 days of Commencement of Construction and then on each anniversary until the end of the Construction Period.
- Geological data contribution of £22,500 is payable within 28 days of Commencement of Construction and on each anniversary until the end of the Construction Period.
- Liaison Group: There is a requirement to establish a liaison group forum with NYMNPA involving other stakeholders.
- Police: £150,000 to be paid towards policing costs prior to Commencement of Construction and a requirement to use reasonable endeavours to enter into an agreement with the North Yorkshire Police with regard to the use of that sum.
- Scarborough Employment Opportunities, as follows:
  - £40,000 payable within 28 days of Commencement of Construction and on each anniversary of the Commencement of Construction to the end of the Construction Period.
  - An obligation to use reasonable endeavours to implement aspects of the Action Plan (as defined therein) set out in the York Potash Skills Strategy.
- Bridleway at Woodsmith mine site (formerly known as Dove's Nest Farm): Obligation to use reasonable endeavours to provide a new length of bridleway in the vicinity of the Woodsmith mine site as shown on a plan in the agreement, to be dedicated to the public in perpetuity.



- Ongoing Monitoring Contribution: Obligation to pay an ongoing monitoring contribution for monitoring compliance with the agreement, and the requirements of the related planning permission, being £100,000 payable annually on the anniversary of the issue of the planning permission until two years after the end of the Construction Period, and £50,000 payable annually on the anniversary on the last of the ongoing monitoring contribution payments, for the remainder of the Post Construction and Operational Periods.
- Security: There are obligations to put in place security arrangements at an early stage to secure the payment of the sums payable pursuant to the obligations and also the reinstatement of any land, which has been subject to above ground works, to its previous condition in the event of the cessation of the construction or operation of the mine. The reinstatement security applies to both the Woodsmith mine site surface site and the interim shaft site at Lady Cross which is within the national park.
- There is an Initial Monitoring Contribution payable consisting of £150,000 within 28 days of the issue of the planning permission which has been paid.
- The obligations on NYMNPA contained in schedule 3 to the agreement require NYMNPA to use the monies for the purposes for which they have been paid and in certain circumstances to repay them if they are not used for those purposes within a certain time. There are also provisions within schedule 3 to the agreement requiring NYMNPA to provide YPL with sufficient information in order to ascertain whether or not the monies have been used for the purposes for which they are paid and by when.

#### *11.4.2 NYCC S106 Agreement – Mine Permission*

##### *(a) Parties and General Provisions*

There is a separate S106 agreement with NYCC relating to the mine application. This relates to County Council functions, such as transport and education. The other parties are the chargee of the land which is bound by the obligations and YPL as owner of that land.

The S106 agreement is made pursuant to section 106 of the Town and Country Planning Act 1990, section 1 of the Local Government Act 2011 and section 111 of the Local Government Act 1972.

All the obligations in the agreement bind “the Obligation Land” which is identified on Plan A (as defined in and attached to the agreement) and is basically that part of the Woodsmith mine site (formerly known as Dove’s Nest Farm) owned by YPL.

All the obligations are enforceable by NYCC.

No person is liable for breach of any obligations contained in the agreement after they have parted with all their interests in the land to which the breach relates, without prejudice to any prior breach.

All payments to be made under the agreement are index-linked and none are payable prior to the Commencement of Construction, which is defined in the agreement and excludes preparatory works. Payments under the agreement are further specified in paragraph (c) below.

The agreement contains expert determination provisions in the event of dispute and various administrative provisions, such as provisions relating to the service of notices, approvals, etc. There is also a good faith and cooperation clause.

##### *(b) Planning Obligations*

The planning obligations which bind the land are contained in schedule 1 to the agreement. The reciprocal obligations on NYCC are contained in schedule 2 to the agreement. The obligations are summarised below. For full details of these obligations reference should be made to the agreement itself.

##### *(c) Schedule 1*

- Obligation to pay Rail Services Contribution of £500,000 within 12 months after Commencement of Construction and £500,000 on the first and second anniversary of the first operation of the new rail services for which it is to be used. A further maximum of £250,000 is payable per annum for three years if NYCC need further subsidy for the service concerned.
- Obligation to pay the Rail Infrastructure Contribution of a maximum of £4,550,000 towards infrastructure upgrades being:
  - £750,000 payable on Commencement of Construction;

- £50,000 payable within six months of the planning permission being issued for option appraisal; and
- up to £3,750,000 following the expiry of 12 months of Commencement of Construction for infrastructure works.
- Education obligations:
  - Obligation to pay NYCC STEM Contribution of £40,000 within 28 days of Commencement of Construction and £40,000 on the first anniversary thereof, for promotion of science, technology, engineering and mathematics education in primary and secondary schools by NYCC; and
  - Obligation to pay NYBEP Contribution of £37,500 within 28 days of Commencement of Construction and £37,500 on each anniversary thereof for nine years, for the promotion of science, technology, engineering and mathematics education in secondary schools and further education establishments by the North Yorkshire Business and Education Partnership.
- Establishment and administration of a traffic management liaison group and obligation to carry out road condition surveys.
- Obligation to install and maintain automatic traffic counters at specific locations.
- To pay up to £50,000 per annum towards highway repairs necessitated by heavy goods vehicle (HGV) traffic associated with the project.
- Obligation to agree, and comply with, a HGV Routing Scheme (as defined in the agreement).
- No polyhalite to be moved by road from the mine without NYCC's consent.
- Requirement to put in place security for the monetary contributions prior to Commencement of Construction.
- The obligations on NYCC contained in schedule 2 to the Agreement require NYCC to use the monies for the purposes for which they have been paid and in certain circumstances to repay them if they are not used for those purposes within a certain time. There are also provisions within schedule 2 to the agreement requiring NYCC to provide YPL with sufficient information in order to ascertain whether or not the monies have been used for the purposes for which they are paid and by when. The agreement also requires NYCC to pay all financial contributions it holds in respect of Mayfield Junction Works to YPL on the completion of those works by YPL.

#### *11.4.3 RCBC S106 Agreement – Mine Permission*

##### *(a) Parties and General Provisions*

There is also a separate S106 agreement with RCBC relating to the mine application. The other parties are the Homes and Communities Agency who own the land bound by the obligations, and York Potash Processing and Ports Limited who have an option to purchase the land bound.

The S106 agreement is made pursuant to section 106 of the Town and Country Planning Act 1990, section 1 of the Local Government Act 2011 and section 111 of the Local Government Act 1972.

All the obligations in the agreement bind “the Obligation Land” which is identified on Plan 1 (as defined in and attached to the agreement) and is basically the area of the MHF planning permission.

All the obligations are enforceable by RCBC.

No person is liable for breach of any obligations contained in the agreement after they have parted with all their interests in the land to which the breach relates, without prejudice to any prior breach.

All payments to be made under the agreement are index-linked and none are payable prior to the Commencement of Construction, which is defined in the agreement and excludes preparatory works. Payments under the agreement are further specified in paragraph (c) below.

The agreement contains expert determination provisions in the event of dispute and various administrative provisions, such as provisions relating to the service of notices, approvals, etc. There is also a good faith and cooperation clause.

##### *(b) Planning Obligations*

The planning obligations which bind the land are contained in schedule 1 to the agreement. The reciprocal obligations on RCBC are contained in schedule 2 to the agreement. The obligations are

summarised below. For full details of these obligations reference should be made to the agreement itself.

(c) Schedule 1

- Obligations in relation to employment and training are as follows:
  - to pay the RCBC STEM Contribution being £40,000 within 28 days of Commencement of Construction and £40,000 on the anniversary thereof;
  - to pay the NYBEP Contribution being £37,500 within 28 days of Commencement of Construction and £37,500 on each anniversary thereof for nine years;
  - to pay the RCBC Local Opportunity Contribution being £40,000 within 28 days of Commencement of Construction and on each anniversary thereof for four years;
  - to pay the RCBC Workshop and Coaching Contribution being £10,000 within 28 days of Commencement of Construction; and
  - to use reasonable endeavours to implement the Action Plan (as defined therein) from the York Potash Skills Strategy.
- Obligation to pay the RCBC Marketing Contribution being £80,000 within 28 days of Commencement of Construction and £80,000 on each anniversary thereof for four years.
- Obligation to pay the Mucky Lane Improvement Contribution of up to £56,000.
- Requirement to put in place security for the monetary contributions prior to Commencement of Construction.
- The obligations on RCBC contained in schedule 2 to the agreement require RCBC to use the monies for the purposes for which they have been paid and in certain circumstances to repay them if they are not used for those purposes within a certain time. There are also provisions within schedule 2 to the agreement requiring RCBC to provide YPL with sufficient information in order to ascertain whether or not the monies have been used for the purposes for which they are paid and by when.

*11.4.4 RCBC S106 Agreement – MHF Permission*

(a) Parties and General Provisions

There is a S106 agreement with RCBC relating to the MHF permission. The other parties are the Homes and Communities Agency who own the land bound by the obligations, and York Potash Processing & Ports Limited who have an option to purchase the land bound.

The S106 agreement is made pursuant to section 106 of the Town and Country Planning Act 1990, section 1 of the Local Government Act 2011 and section 111 of the Local Government Act 1972.

All the obligations in the agreement bind “the Obligation Land” which is identified on the plan and is basically the area of the MHF planning permission.

All the obligations are enforceable by RCBC.

No person is liable for breach of any obligations contained in the agreement after they have parted with all their interests in the land to which the breach relates, without prejudice to any prior breach.

All payments to be made under the agreement are index-linked and none are payable prior to the Commencement of Construction, which is defined in the agreement and excludes preparatory works. Payments under the agreement are further specified in paragraph (c) below.

The agreement contains expert determination provisions in the event of dispute and various administrative provisions, such as provisions relating to the service of notices, approvals, etc. There is also a good faith and cooperation clause.

(b) Planning Obligations

The planning obligations which bind the land are contained in schedule 1 to the agreement. The reciprocal obligations on RCBC are contained in schedule 2 to the agreement. The obligations are summarised below. For full details of these obligations reference should be made to the Agreement itself.

(c) Schedule 1

- Obligation to pay the Training and Development Contribution of £50,000 within 28 days of Commencement of Construction and £50,000 on each anniversary thereof for nine years.

- Obligation to pay the Expressways Contribution of £24,000 within 28 days of Commencement of Construction.
- The obligations on RCBC contained in schedule 2 to the agreement require RCBC to use the monies for the purposes for which they have been paid and in certain circumstances to repay them if they are not used for those purposes within a certain time. There are also provisions within schedule 2 to the agreement requiring RCBC to provide YPL with sufficient information in order to ascertain whether or not the monies have been used for the purposes for which they are paid and by when.

#### *11.4.5 RCBC – relating to the Harbour DCO*

##### *(a) Parties and General Provisions*

There is a S106 agreement (also known as a Development Consent Obligation) with RCBC relating to the harbour Development Consent Obligation. The other parties are the Homes and Communities Agency who own the land bound by the obligations, and York Potash Processing and Ports Limited who have an option to purchase the land bound.

All the obligations in the agreement bind “the Obligation Land” which is identified on the plan in the agreement and is basically the area of the MHF planning permission.

All the obligations are enforceable by RCBC.

No person is liable for breach of any obligations contained in the agreement after they have parted with all their interests in the land to which the breach relates, without prejudice to any prior breach.

All payments to be made under the agreement are index-linked and none are payable prior to the Commencement of Development, which is defined in the agreement and excludes preparatory works. Payments under the agreement are further specified in paragraph (c) below.

The agreement contains expert determination provisions in the event of dispute and various administrative provisions, such as provisions relating to the service of notices, approvals, etc. There is also a good faith and cooperation clause.

##### *(b) Planning Obligations*

The planning obligations which bind the land are contained in schedule 1 to the agreement. The reciprocal obligations on RCBC are contained in schedule 2 to the agreement. The obligations are summarised below. For full details of these obligations reference should be made to the agreement itself.

##### *(c) Schedule 1*

- Obligation to pay the Community Environmental Fund Contribution being £10,000 within 28 days of Commencement of Construction and £10,000 on each first, second, third and fourth anniversary thereof.
- Obligation to pay the Foxrush Farm Drainage Contribution of £5,000 within 28 days of Commencement of Development.
- Obligation to pay the Foxrush Farm Car Park Contribution of £30,000 within 28 days of Commencement of Development.
- Obligation to pay the Gateway Contribution of up to £215,000 within 28 days of Commencement of Development or receipt from RCBC of details of the purposes to which it is to be put, whichever is the later.
- Obligation to pay the Portrack Marsh Contribution of up to £200,000 within 28 days of Commencement of Development or receipt from Tees Valley Wildlife Trust of notice that expenditure on Portrack Marsh by them is about to be incurred, whichever is the later.
- Obligation to pay the Biodiversity Offsetting Contribution of £50,000 within 28 days of Commencement of Development or receipt from Tees Valley Local Nature Partnership of notice of commencement of the production of the Tees Estuary Habitat Strategy, whichever is the later.
- The obligations on RCBC contained in schedule 2 to the agreement require RCBC to use the monies for the purpose for which they have been paid, or to pay them to other bodies for that purpose, and in certain circumstances to repay them if they are not used for those purposes within a certain time. There are also provisions within schedule 2 to the agreement requiring

RCBC to provide YPL with sufficient information in order to ascertain whether or not the monies have been used for the purposes for which they are paid and by when.

### ***11.5 Customer Agreements: Offtake Agreements***

The Company has entered into the following Offtake Agreements, which the Company considers to be material:

#### ***11.5.1 January 2014 – U.S.-based Fortune 500 agribusiness***

In January 2014, the Company signed an Offtake Agreement with a U.S.-based Fortune 500 agribusiness for 0.5 mtpa of POLY4. In August 2015, this Offtake Agreement was amended and restated and the customer's volume commitment was tripled to 1.5 mtpa. The volume profile progressively builds up to reach the 1.5 mtpa level in the fifth year of production. The customer has an option to increase the volume commitment to 2 mtpa. The initial tenure of the agreement is for seven years, with the potential to extend the agreement for two further five year periods. The customer has the exclusive right to resell and distribute POLY4 through its North American distribution network. The delivery method under the agreement is free on board. Pricing is based on benchmark prices of certain underlying nutrients which POLY4 contains, calculated using a mutually agreed formula which includes as variables quoted prices for competing fertilizer products and half of the volumes under this agreement are subject to a floor price mechanism which guarantees a minimum sales price for YPL for that portion in the event the price calculation drops below the floor price. If the customer can reasonably demonstrate that YPL supplies a third party with the same quality of polyhalite in quantities over 500,000 tonnes per annum (over a full year period under a similar arm's length agreement) at a lower price than the base price agreed, YPL will reimburse the customer the price differential for that 12 month period. The agreement provides that a sales and marketing programme be created between the parties to establish an appropriate marketing plan for the customer's sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. Termination rights are available for a force majeure event of more than 30 business days' duration (or 60 aggregate business days in a calendar year). Termination is also available on insolvency of either party and a material breach of more than 30 business days' duration. The customer can terminate if certain Project milestones are more than six months behind schedule, on written notice to YPL, however this right is subject to an initial review process, involving mutual discussion between the parties and good faith negotiations to resolve any concerns regarding the review event. Neither party is liable for indirect, consequential, punitive or other special damages.

#### ***11.5.2 August 2014 – Leading Central American fertilizer distribution business***

In August 2014, YPL entered into an Offtake Agreement with a leading Central American fertilizer distribution business, whereby the customer has committed to purchase POLY4 for a five year term after first commercial production commences. The volumes step up from 0.15 mtpa in the first year to 0.25 mtpa in the fifth year. The customer has an option to increase the volume commitment by an additional 0.25 mtpa. The customer has the exclusive right to resell and distribute the Company's product in Central American markets and the non-exclusive right in certain South American markets for the duration of the agreement. The delivery method under the agreement is free on board. Pricing is based on a bespoke formula, including benchmark prices of certain underlying nutrients which POLY4 contains as well as other variables, and the volumes under this agreement are subject to a floor price mechanism which guarantees a minimum sales price for YPL in the event the price calculation drops below the floor price. The agreement provides for a steering committee to be established for both parties to work together to implement a marketing plan for sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. Furthermore, the agreement includes an event review mechanism by which any failed Project milestones may be addressed via good faith negotiation between the parties. The parties also agreed to consult and agree upon appropriate measures if a force majeure event of more than 15 days' duration (or 20 aggregate days in a 30 day period). Termination is available on insolvency of either party, a material breach of more than sixty business days' duration, or mutual agreement. Each party remains responsible for their respective payment or delivery obligations with regard to obligations incurred before termination. Neither party is liable for indirect, consequential, punitive or other special damages not based on direct economic losses.

#### *11.5.3 December 2014 – South American fertilizer distribution business*

In December 2014, YPL entered into an Offtake Agreement with a South American fertilizer distribution business for a period of seven years from first production with an option to extend the term by a further three years. The customer has committed to purchase 0.3 mtpa of POLY4 from a point in time when the mine is consistently producing 6.5 mtpa, with volumes of product to be purchased from first production until such time on a prorated basis. The customer has the option to increase the volume commitment to 0.45 mtpa. The customer has the non-exclusive right to resell and distribute the Company's product only in certain South American markets for the duration of the agreement. The delivery method under the agreement is free on board. Pricing is based on benchmark prices of certain underlying nutrients which POLY4 contains, calculated using a mutually agreed formula which includes as variables quoted prices for competing fertilizer products and certain mutually agreed assumptions regarding the respective percentages of relevant chemical elements in those products and the volumes under this agreement are subject to a floor price mechanism which guarantees a minimum sales price for YPL in the event the price calculation drops below the floor price. The agreement provides for a steering committee to be established for both parties to work together to implement a marketing plan for sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. The agreement includes an event review mechanism by which any failed Project milestones may be addressed via good faith negotiation between the parties. Termination is available on insolvency of either party and a material breach of more than 30 business days' duration. Neither party is liable for indirect, consequential, punitive or other special damages.

#### *11.5.4 December 2014 – Huaken*

In December 2015, the Company signed an Offtake Agreement with Huaken, a Chinese company, for use of POLY4 as a soil conditioner. The agreement is for a period of seven years from first production, and the volume commitment increases up to 0.5 million tonnes of POLY4 in coarse form in the seventh year after first commercial production begins with the volume commitments to increase over the initial six years. Huaken has the exclusive right to resell and distribute the Company's product throughout China, other than in the province of Yunnan and Sichuan, for the purposes of use only as a soil conditioner for the duration of the agreement. The delivery method under the agreement is cost, insurance and freight (CIF). Pricing is based on an individualised formula incorporating benchmark prices of competing products and assumptions (subject to inflation) as to the costs of certain underlying nutrients which POLY4 contains. The agreement provides for a steering committee to be established for both parties to work together to implement a marketing plan for sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. Termination rights are available for a force majeure event of more than 180 days duration, with YPL's liability capped at the amount paid for any product not supplied. Termination is also available on insolvency of either party and a material breach of more than 20 business days' duration. Huaken has the right to terminate with notice if YPL is not able to commence production on the date agreed, however this right is subject to an initial review, involving mutual discussion between the parties and good faith negotiations to extend the date agreed. In such case neither party has liability to the other. Neither party is liable for indirect, consequential, punitive or other special damages.

#### *11.5.5 December 2015 – Dian Huang*

In May 2016, YPL entered into an Offtake Agreement with Dian Huang, which replaced the Offtake Agreement with Yunnan TCT that had been entered into in June 2013. The Dian Huang agreement is for a period of ten years from first production, with a volume commitment of 1 mtpa from the commencement of the sixth year after first commercial production begins, with the volume commitment to increase over the initial five years. Dian Huang has the exclusive right to resell and distribute the Company's product in the province of Yunnan and Sichuan in China for the duration of the agreement. The delivery method under the agreement is CIF. Pricing is based on an individualised formula incorporating benchmark prices of competing products and assumptions (subject to inflation) as to the costs of certain underlying nutrients which POLY4 contains, as well as certain other costs. This is termed the "Base Price". If Dian Huang can reasonably demonstrate that they can obtain the same volume and quality of polyhalite (over a full year period under a similar arm's length agreement) from another supplier at a lower price, then a price differential will be agreed in good faith between the parties and YPL will offset the Base Price by the agreed differential over the subsequent 12 month period. If the parties cannot agree to a price differential, the matter can be referred to arbitration. The agreement provides for a steering committee to be established for

both parties to work together to implement a marketing plan for sales of POLY4, including liaising in relation to agronomic trials, monitoring timelines to production and establishing various delivery mechanics. Termination rights are available for a force majeure event of more than 180 days duration, with YPL's liability capped at the amount paid for any product not supplied. Termination is also available on insolvency of either party and a material breach of more than 20 business days' duration. Neither party is liable for indirect, consequential, punitive or other special damages. Furthermore, if YPL believes six months before the initial production date, that such date will be delayed, the parties will agree in good faith to amend the agreement. If such good faith changes cannot be made, either party has the right to cancel the agreement, without penalty or liability.

## **11.6 Financing and Other Agreements**

### **11.6.1 2016 Firm Placing and Placing and Open Offer Agreement**

The 2016 Firm Placing and Placing and Open Offer Agreement was entered into between the Company, the Joint Bookrunners (the **Joint Bookrunners**) and the Co-Lead Managers (the **Co-Lead Managers**), on 2 November 2016 under which the Joint Bookrunners and the Co-Lead Managers agreed, acting severally, as agents of the Company, to use their respective reasonable endeavours to procure placees for the Shares that were offered under the 2016 Firm Placing and Placing and Open Offer. To the extent placees were not provided by the Joint Bookrunners and Co-Lead Managers, J.P. Morgan Cazenove agreed to underwrite the 2016 Firm Placing and Placing and Open Offer on terms that would ensure that the Company received aggregate gross proceeds of US\$850 million from the 2016 Firm Placing and Placing and Open Offer and the 2016 Convertible Bond Offering.

The 2016 Firm Placing and Placing and Open Offer was fully underwritten by the Joint Bookrunners and the Co-Lead Managers such that to the extent that any placees under the 2016 Firm Placing and Placing and Open Offer failed to take up any or all of the Shares allocated to it or which it had agreed to take up at the agreed issue price, each of the Joint Bookrunners agreed to take up such Shares in the agreed proportions. Under the 2016 Firm Placing and Placing and Open Offer Agreement, the Company provided certain customary representations, warranties and undertakings for a transaction of that nature to the Joint Bookrunners and the Co-Lead Managers concerning, among other things, the accuracy of the information in the Existing Prospectus and other matters relating to the Group and its business. The Company also gave a customary indemnity to the Joint Bookrunners and the Co-Lead Managers, liability in respect of which is unlimited as to time and amount. The Company also undertook that (subject to certain limited exceptions) it would not, for a period of 180 days from 28 November 2016 directly or indirectly, offer, issue, lend, sell or contract to sell or otherwise negotiate in respect of any Shares (or any interest therein or in respect thereof) or any other securities exchangeable for or convertible into or substantially similar to, Shares, without the prior joint written consent of the Joint Bookrunners.

### **11.6.2 Subscription Agreement relating to the 2016 Convertible Bond Offering**

The Convertible Bond subscription agreement (the **Subscription Agreement**) dated 2 November 2016 was entered into between Sirius Minerals Finance Limited, the Company and J.P. Morgan Cazenove, pursuant to which Sirius Minerals Finance Limited agreed to issue the Convertible Bonds and J.P. Morgan Cazenove agreed to procure subscribers for or, failing which, to subscribe and pay for the Convertible Bonds at a price equal to 100 per cent. of their principal amount, subject to the provisions of the Subscription Agreement.

In connection with the subscription and issue of the Convertible Bonds, and provided that the Subscription Agreement became wholly unconditional and was not terminated in accordance with its terms, Sirius Minerals Finance Limited agreed to pay J.P. Morgan Cazenove a combined management and underwriting commission and, at its sole discretion, an additional commission and a discretionary fee. Sirius Minerals Finance Limited, failing whom the Company, agreed to pay certain costs and expenses in connection with or incidental to the subscription and issue of the Convertible Bonds.

The subscription of the Convertible Bonds pursuant to the Subscription Agreement is conditional on the passing of the Resolutions at the General Meeting, Admission and certain other conditions precedent which are customary for a transaction of this nature.

Under the Subscription Agreement, Sirius Minerals Finance Limited and the Company gave certain customary (for a transaction of this nature) representations, warranties and undertakings to J.P. Morgan Cazenove concerning, among other things, matters relating to the Group and its business, the Convertible Bonds and the underlying Shares. Sirius Minerals Finance Limited and the Company

have also gave an indemnity to J.P. Morgan Cazenove, liability in respect of which is unlimited as to time and amount.

Each of Sirius Minerals Finance Limited and the Company undertook that (subject to certain limited exceptions), for a period of 180 days following the date of the Subscription Agreement, it will not, and will procure that none of the Company's subsidiaries will, without the prior written consent of J.P. Morgan Cazenove, directly or indirectly issue, offer, pledge, sell, contract to issue or sell, issue or sell any option or contract to purchase, purchase any option or contract to issue or sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of, directly or indirectly, any Shares, or any participation certificates and any depositary or other receipt, instrument, rights or entitlement representing Shares (**Relevant Securities**), or any securities convertible into or exercisable or exchangeable for Shares or Relevant Securities or enter into any swap or any other agreement or any transaction that transfers, in whole or in part, directly or indirectly, any of the economic consequences of ownership of Shares or Relevant Securities, whether any such swap or transaction described above is to be settled by delivery of Shares or Relevant Securities or such other securities, in cash or otherwise.

#### *11.6.3 Royalty Financing Agreement*

The Company and its subsidiaries, YPL and YPPPL, entered into the Royalty Financing Agreement with Hancock dated 25 October 2016 pursuant to which Hancock agreed to (i) purchase the Royalty in return for US\$250 million and (ii) subscribe for Shares in an amount of US\$50 million (issued as described below), subject to certain conditions.

The Royalty is guaranteed by the Company and the obligations of Hancock under the Royalty Financing Agreement are guaranteed by Hancock Prospecting Pty Ltd. The Royalty will be calculated as the gross revenue (on a free on board basis calculated in U.S. dollars) received for the sale of polyhalite (and any other mineral) extracted from the Project area (both onshore and offshore), less allowable deductions pertaining to such receipts, multiplied by the royalty rate. The royalty rate is 5 per cent. for the first 13 mtpa sold in any calendar year and 1 per cent. for sales volumes above 13 mtpa in any calendar year. The Royalty is payable quarterly within 15 days of each quarter end in U.S. dollars and there shall be no maximum payment in respect of the Royalty in any given calendar year. The Royalty is subject to a true up adjustment at the end of each calendar year such that the royalty rate of 5 per cent. will be applied to the annual sales volumes of categories of products in descending order of price per metric tonne up to a maximum of 13 mtpa in any calendar year and the royalty rate of 1 per cent. applied to any additional sales volumes of products thereafter. Allowable deductions include all customs duties and other taxes and governmental charges (if any) levied on sales as incurred by YPL, YPPPL and their affiliates (but excluding any taxes based on gross or net income as well as taxes, licences or duties paid on operational expenditure).

On drawdown of the Royalty purchase amount, the Company has agreed to issue Hancock with 200,076,829 Shares for US\$50 million.

Drawdown of the Royalty purchase amount and subscription of the Shares to be issued to Hancock pursuant to the Royalty Financing is conditional upon, *inter alia*:

- notice having been given to Hancock that the Group has taken forward its development plans through capital expenditure of US\$630 million of the total amount of the Stage 1 Financing;
- Hancock receiving comfort that sufficient funding is in place and valid to fund a production capacity of 10mtpa from the Project, including being provided with the Mandate Letter;
- Hancock being provided with an ownership interest in certain strips of freehold property at the mine head, MTS and MHF, as specified in the Royalty Financing Agreement;
- all material permits and authorisations for the Project remaining in full force and effect;
- the Group obtaining and continuing to hold title over no less than 88 per cent of the mineral rights for a minimum period of 50 years for the Indicated Resources and Inferred Resources (as defined in the JORC Code) as described in the Competent Person's Report; and
- the Group obtaining title for no less than 95 per cent of the rights necessary to construct the MTS,

as well as other drawdown conditions typical for an agreement of this nature.

In addition, at the request of Hancock, YPL, YPPPL and Hancock will negotiate in good faith to agree a product offtake arrangement following completion of the Royalty Financing for up to 20,000



tonnes per annum, on terms which are reflective of the Group's other offtake arrangements and on a free on board basis.

The term of the Royalty Financing Agreement is the life of the Project or 70 years, whichever is longer. Hancock may assign its rights and obligations under the Royalty Financing Agreement but (other than where assigning to a group company, or in the case of an assignment as part of a financing or securitisation structure) must provide YPL and YPPPL with a right of first refusal in relation to any received offer for the sale and purchase of the Royalty or for the assignment of Hancock's rights and obligations in relation to the Royalty Financing Agreement or the Royalty.

On drawdown the Royalty will be secured by way of a fixed and 'lightweight' floating charge over the assets of the Project, with the charge to be fully subordinated to the Stage 2 Financing which shall rank in priority and it is agreed that Hancock will enter into an intercreditor agreement with any such lenders to reflect this arrangement.

Following drawdown of the Royalty purchase amount, if YPL fails to secure or drawdown funding in order to reach Project Completion and a standard insolvency event occurs Hancock may require YPL to repay the Royalty purchase amount in full. If requested by the Company, Hancock will enter into a sharing agreement with the convertible bondholders and/or the trustee under the Convertible Bonds pursuant to which Hancock and such bondholders will agree, so long as the Convertible Bonds have not been converted into equity in the Company, to share equally any amounts recovered on a liquidation up to the amount that is owed to such party.

If, after drawdown of Stage 2 Financing, a standard insolvency event occurs in YPL or YPPPL and a liquidator is sought to be appointed or is so appointed by any creditor of YPL or YPPPL pursuant to a winding-up petition presented by a creditor, then YPL and YPPPL must repay the Royalty purchase amount to Hancock following which the Royalty Financing Agreement shall terminate. However, if a liquidator is appointed to YPL and/or YPPPL and seeks to disclaim the Royalty Financing Agreement, then the amount payable to Hancock on termination of the agreement shall be increased to the greater of (i) the Royalty purchase amount and (ii) the net present value (on a likely probability basis) of all future payments to Hancock under the Royalty Financing Agreement as at the date of appointment of the liquidator. If requested by the Company, Hancock will enter into a sharing agreement with the convertible bondholders and/or the trustee under the Convertible Bonds pursuant to which Hancock and such bondholders will agree, so long as the Convertible Bonds have not been converted into equity in the Company, to share equally any amounts recovered on a liquidation up to the amount that is owed to such party.

The Royalty Financing Agreement is governed by English law, and disputes are to be settled by confidential arbitration pursuant to the rules of the London Court of International Arbitration.

#### *11.6.4 Mandated Lead Arrangers Engagement Letter for Stage 2 Financing*

The Company is a party to a mandate letter dated 17 August 2016 (the **Mandate Letter**) pursuant to which it has appointed Export Development Canada, ING Bank, J.P. Morgan Limited, Lloyds Bank Plc, Société Générale Corporate & Investment Banking and The Royal Bank of Scotland Plc (together the **Mandated Lead Arrangers** and the **Bookrunners**) to use their best efforts to arrange the following credit facilities:

- a US\$2,200,000,000 project finance facility; and
- a US\$400,000,000 contingent funding facility (the **Contingent Funding Facility**),

(together the **Facilities**).

Under the Mandate Letter, the Company appointed the Mandated Lead Arrangers as exclusive arrangers of the Facilities and the Bookrunners as exclusive bookrunners in connection with syndication of the Facilities. The Mandate Letter attaches an indicative term sheet for the Facilities and a list of diligenced documents which the Mandated Lead Arrangers confirm have been reviewed.

The parties to the Mandate Letter agree to negotiate in good faith to agree certain finance documents and satisfy any conditions precedent, subject to agreed conditions set out in the Mandate Letter. Provided the Facilities are fully subscribed and subject to the conditions set out in the Mandate Letter, the Mandated Lead Arrangers agree (without any commitment to underwrite any part of the Facilities) to consider funding the agreed commitment levels set out in the letter.

The Company agrees to pay all the Mandated Lead Arrangers and the Bookrunners costs and expenses reasonably incurred in connection with the negotiation, preparation and execution of the finance documents (as defined therein), whether or not the finance documents are signed and

reasonable costs incurred in connection with syndication. In addition, the Company indemnifies each Mandated Lead Arranger, each Bookrunner, in each case, any of their respective affiliates and in each case their respective directors, officers, employees and agents against any liability incurred by or awarded against any such person arising out of or in connection with any proceedings commenced or threatened in relation to the Facilities, the finance documents, or arranging the facilities.

In the event of a change of control (defined below) occurring after a Mandated Lead Arranger has achieved credit approval, the Company shall be required to pay to each Mandated Lead Arranger a fee of 0.4 per cent. of their commitments under the commercial bank facility and the Contingent Funding Facility. A change of control occurs where the Company fails to control and own directly or indirectly any less than 100 per cent. of the borrower, a special purpose borrowing vehicle to be incorporated and owned directly or indirectly by the Company.

Any Mandated Lead Arranger or Bookrunner may terminate its obligations under the Mandate Letter by notice if, the Stage 1 Financing is not achieved within 12 months of the date of the Mandate Letter, the finance documents are not entered into within two years of the date of the Mandate Letter, the conditions of the Mandate Letter have not been satisfied, or if the Company fails to disclose to it any information relevant for arranging the Facilities.

After the Mandated Lead Arrangers have achieved credit approval, the Company may terminate the Mandate Letter upon three Business Days' notice and paying a fee of 0.4 per cent. of each Mandated Lead Arranger's commitment under the commercial bank facility and the Contingent Funding Facility.

The Mandate Letter is governed by English law.

#### *11.6.5 YPF Grant Agreement*

YPL and YPF entered into the York Potash Foundation Grant Agreement on 12 March 2014. The YPF was set up by the Company as a means to share a proportion of revenue from the Project with the local community and for community projects. It is independently administered and has received charitable status. The term of the agreement is 100 years from the date of signing or for so long as any payments remain unspent by the YPF.

Under the agreement, YPL is required to pay, in respect of each financial year, an amount in pounds sterling equal to 0.5 per cent. of the gross amount of sales of polyhalite produced from the Project made by YPL and/or any member of the Group in that financial year. Such amount shall be calculated on a free on board basis, converted where applicable into pounds sterling. The payments will be paid to the YPF within six months of the end of the relevant financial year of YPL. In addition, YPL has agreed to make a discretionary payment of £2 million to the YPF during the construction phase. In the event that a payment might reasonably lead to an insolvency situation or lead YPL to breach legal or regulatory obligations (among other things), then the Board will have the discretion to reduce the payment in a reasonable amount to avoid such an impact.

The payments will be used by YPF for the purpose of delivering its charitable objects which are for the public benefit (predominantly within the boundaries of RCBC, Scarborough Borough Council and the NYMNP as defined in June 2012). The charitable objects of the YPF are to:

- advance education including by supporting projects and training that benefit people from the area of benefit by enhancing their skills;
- promote the general health and well-being of the community;
- advance environmental protection and improvement including by enhancing the local landscape;
- advance citizenship and community development including by improving community facilities to bring people in the area of benefit together; and
- relieve those in need because of financial hardship by virtue of being out of work, particularly the long-term unemployed, by helping them to gain skills.

The YPF is obligated to monitor the delivery and success of the implementation of the charitable objects of the YPF and to ensure the terms of the agreement are being adhered to, and to maintain and provide YPL with certain reports on its receipt and use of the payments and delivery against the charitable objects of the YPF annually.

YPL may withhold or suspend payment in certain events including where YPF uses the payments for purposes other than those for which they have been awarded, or where any YPF trustee acts dishonestly or negligently or on certain usual insolvency events or if there has been a non-remedied

material breach. YPL may terminate the agreement without liability if certain insolvency-related events or actions impact YPF or if YPF ceases to be a charity.

#### *11.6.6 Sponsor's Agreement*

On 25 April 2017, the Company and J.P. Morgan Cazenove entered into a sponsor agreement, pursuant to which J.P. Morgan Cazenove agreed to act as the Company's sponsor in connection with the applications for Admission and the publication of this Prospectus (the **Sponsor Agreement**). Under the terms of the Sponsor Agreement, the Company has agreed to provide J.P. Morgan Cazenove with certain customary indemnities, undertakings, representations and warranties. The indemnities provided by the Company indemnify J.P. Morgan Cazenove and its affiliates against, *inter alia*, claims made against them or losses incurred by them, subject to certain exceptions. In addition, the Sponsor Agreement provides J.P. Morgan Cazenove with the right to terminate the Sponsor Agreement before Admission in certain specified circumstances typical for a sponsor agreement of this nature. If such a right is exercised by J.P. Morgan Cazenove, the Sponsor Agreement will lapse.

## **12. UK TAXATION**

### **12.1 General**

The following statements are intended to apply only as a general guide to certain UK tax considerations, and are based on current UK tax law and what is understood to be the current practice of HM Revenue and Customs (**HMRC**) (which is not generally binding on HMRC), both of which are subject to change at any time, possibly with retrospective effect. They relate only to certain limited aspects of the UK taxation treatment of Shareholders who are resident and, in the case of individuals, domiciled in (and only in) the UK for UK tax purposes (except to the extent that the position of non-UK resident or non-UK domiciled Shareholders is expressly referred to), who hold the Shares as investments (other than under an individual savings account or a self-invested personal pension) and who are the absolute beneficial owners of both the Shares and any dividends paid on them. The statements may not apply to certain classes of Shareholders such as (but not limited to) persons acquiring their Shares in connection with an office or employment, dealers in securities, insurance companies and collective investment schemes.

Prospective subscribers for or purchasers of Shares who are in any doubt as to their tax position regarding the acquisition, ownership and disposition of the Shares or who are subject to tax in a jurisdiction other than the UK are strongly recommended to consult their own tax advisers.

The rates and allowances for 2017/18 stated in the UK tax section below reflect those in the Finance Bill 2017 published on 20 March 2017. These measures are expected to be given effect by the Finance Act 2017 in due course but are potentially subject to change.

### **12.2 Dividends**

The Company will not be required to deduct or withhold UK tax at source from dividend payments it makes, irrespective of the residence or particular circumstances of the Shareholder receiving such dividend payment.

A Shareholder's liability to taxation on dividends will depend upon the circumstances of the Shareholder and is outlined below.

#### *12.2.1 UK resident individual Shareholders*

An individual Shareholder who is resident and domiciled for tax purposes in the United Kingdom and who receives a cash dividend from the Company will pay no tax on the first £5,000 of dividend income received in a year (the 'Nil Rate Amount'). The new rates of tax on dividend income above the Nil Rate Amount are 7.5 per cent. on dividend income within the basic rate band, 32.5 per cent. on dividend income within the higher rate band and 38.1 per cent. on dividend income within the additional rate band (2016/17 and 2017/2018). Dividend income that is within the Nil Rate Amount counts towards an individual's basic or higher rate limits, and will therefore affect the level of savings allowance to which they are entitled and the rate of tax which is due on dividend income in excess of the Nil Rate Amount. In calculating into which tax band any dividend income over the Nil Rate Amount falls, dividend income is treated as the top slice of a Shareholder's income.

#### *12.2.2 UK resident corporate Shareholders*

A corporate Shareholder resident in the UK for tax purposes which is a "small company" for the purposes of Chapter 2 of Part 9A of the Corporation Tax Act 2009 will not be subject to UK

corporation tax on any dividend received from the Company provided certain conditions are met (including an anti-avoidance condition).

Other corporate Shareholders resident in the UK for tax purposes will not be subject to UK corporation tax on any dividend received from the Company so long as the dividend falls within an exempt class and certain conditions are met. For example, (i) dividends paid on Shares that are not redeemable and do not carry any present or future preferential rights to dividends or to the Company's assets on its winding-up, and (ii) dividends paid to a person holding less than a 10 per cent. interest in the Company, should generally fall within an exempt class. However, the exemptions mentioned above are not comprehensive and are subject to anti-avoidance rules.

If the conditions for exemption are not met or cease to be satisfied, or such a corporate Shareholder elects an otherwise exempt dividend to be taxable, the Shareholder will be subject to UK corporation tax on dividends received from the Company, at the rate of corporation tax applicable to that corporate Shareholder (currently 19 per cent. from 1 April 2017, and reducing to 17 per cent. from 1 April 2020).

#### *12.2.3 Non-UK resident Shareholders*

Non-UK resident Individual Shareholders who receive a dividend from the Company are treated as having paid UK income tax on their dividend income at the dividend ordinary rate (7.5 per cent.). Such income tax will not be repayable to a non-UK resident individual Shareholder. A non-UK resident Shareholder is not generally subject to further UK tax on dividend receipts.

A non-UK resident individual Shareholder may also be subject to taxation on dividend income under local law in their country or jurisdiction of residence and/or citizenship. A shareholder who is not solely resident in the UK for tax purposes should consult his own tax advisers concerning his tax liabilities (in the UK and any other country) on dividends received from the Company in respect of liability to both UK taxation and taxation of any other country of residence or citizenship.

An individual Shareholder who has ceased to be resident in the UK for tax purposes for a period of five full tax years or less and who receives or becomes entitled to dividends from the Company during that period may, if certain conditions are met, be liable for UK income tax on those dividends on his return to the UK. Special rules apply to Shareholders who are subject to tax on a "split-year" basis, who should seek specific professional advice if they are in any doubt about their position.

#### *12.2.4 Chargeable Gains Taxation on Disposal of Ordinary Shares*

A disposal or deemed disposal of Shares by an individual Shareholder who is resident in the UK for tax purposes may, depending on the shareholder's circumstances and subject to any available exemptions and reliefs (such as the annual exempt amount), give rise to a chargeable gain or an allowable loss for the purposes of UK taxation of chargeable gains. The rate of capital gains tax is 10 per cent. (2016/2017 and 2017/2018) for individuals who are subject to income tax at the basic rate and 20 per cent. (2016/2017 and 2017/2018) for individuals who are subject to income tax at the higher or additional rates. An individual Shareholder is entitled to realise an annual exempt amount of gains (£11,100 for 2016/2017 and £11,300 for 2017/2018) without being liable to capital gains tax.

For a corporate Shareholder within the charge to UK corporation tax, a disposal (or deemed disposal) of Shares may give rise to a chargeable gain at the rate of corporation tax applicable to that Shareholder (currently 19 per cent. from 1 April 2017, and reducing to 17 per cent. from 1 April 2020) or an allowable loss for the purposes of UK corporation tax. Indexation allowance may reduce the amount of chargeable gain that is subject to corporation tax by increasing the chargeable gains tax base cost of an asset in accordance with the rise in the retail prices index but indexation allowance cannot create or increase any allowable loss.

A Shareholder who is not resident for tax purposes in the UK will not generally be subject to UK capital gains tax on the disposal or deemed disposal of Shares unless the Shareholder is carrying on a trade, profession or vocation in the UK through a branch or agency (or, in the case of a corporate Shareholder, a permanent establishment) in connection with which the Shares are used, held or acquired. Non-UK tax resident Shareholders may be subject to non-UK taxation on any gain under local law.

Generally, an individual Shareholder who has ceased to be resident in the UK for tax purposes for a period of five full tax years or less and who disposes of Shares during that period may be liable on their return to the UK to UK taxation on any chargeable gain realised (subject to any available exemption or relief). Special rules apply to Shareholders who are subject to tax on a "split-year" basis, who should seek specific professional advice if they are in any doubt about their position.

### **12.3 Stamp duty and stamp duty reserve tax**

The statements in this paragraph 12.3 are intended as a general guide to the current position relating to UK stamp duty (**stamp duty**) and stamp duty reserve tax (**SDRT**) and apply to any holders of Shares irrespective of their place of tax residence. Certain categories of person, including intermediaries, brokers, dealers and persons connected with depositary receipt arrangements and clearance services, may not be liable to stamp duty or SDRT or may be liable at a higher rate or may, although not primarily liable for tax, be required to notify and account for it under the Stamp Duty Reserve Tax Regulations 1986.

#### **12.3.1 The Issue of Shares pursuant to the 2016 Firm Placing and Placing and Open Offer**

Except as described below, no liability to stamp duty or SDRT will arise on the issue of the Shares by the Company.

#### **12.3.2 Subsequent Transfers of Shares**

The transfer on sale of Shares outside the CREST system will generally be subject to stamp duty on the instrument of transfer at the rate of 0.5 per cent. of the amount or value of the consideration given (rounded up to the nearest £5). An exemption from stamp duty is available on an instrument transferring Shares where the amount or value of the consideration is £1,000 or less, and it is certified on the instrument that the transaction effected by the instrument does not form part of a larger transaction or series of transactions for which the aggregate consideration exceeds £1,000. An unconditional agreement to transfer Shares will normally give rise to a charge to SDRT at the rate of 0.5 per cent. of the amount or value of the consideration for the Shares. However, where within six years of the date of the agreement (or, if the agreement is conditional, the date on which it becomes unconditional) an instrument of transfer is executed pursuant to the agreement, and stamp duty is paid on that instrument or the instrument is otherwise exempt from stamp duty, any SDRT already paid will generally be refunded (generally, but not necessarily, with interest) provided that a claim for payment is made, and any outstanding liability to SDRT will be cancelled.

The purchaser or transferee of the Shares will generally be responsible for paying such stamp duty or SDRT.

#### **12.3.3 Clearance Services and Depositary Receipt Arrangements**

Subject to the comments in the following paragraphs, where Shares are issued or transferred (i) to, or to a nominee or agent for, a person whose business is or includes the provision of clearance services or (ii) to, or to a nominee or agent for, a person whose business is or includes issuing depositary receipts, stamp duty or SDRT may be payable at a rate of 1.5 per cent. of the amount or value of the consideration payable or, in certain circumstances, the value of the Shares (in the case of stamp duty, rounded up to the nearest multiple of £5).

Transfers of Shares within a clearance service or depositary receipt system will generally be exempt from SDRT and, provided no instrument of transfer is entered into, will not be subject to stamp duty.

Clearance service providers may opt, in certain circumstances, for the normal rates of stamp duty and SDRT to apply to an issue or transfer of Shares into, and to transactions within, the service instead of the higher rate applying to an issue or transfer of the Shares into the clearance system and the exemption for dealings in the Shares whilst in the system.

Any liability for stamp duty or SDRT in respect of a transfer into a clearance service or depositary receipt system, or in respect of a transfer within such service or system, which does arise, will generally be an obligation of the clearance service or depositary receipt system operator or their nominee, as the case may be, but the cost will in practice be borne by the participants in the clearance service or depositary receipt system.

Following litigation, HMRC confirmed that it will no longer seek to impose the 1.5 per cent. SDRT charge on issues of UK shares to depositary receipt issuers and clearance services anywhere in the world on the basis that the charge is not compatible with EU law. HMRC considers, though, that the 1.5 per cent. SDRT or stamp duty charge will still apply to transfers of existing UK shares to depositary receipt issuers or clearance services that are not an integral part of an issue of share capital. Specific professional advice should be sought before paying the 1.5 per cent. SDRT or stamp duty charge in any circumstances.

#### 12.3.4 Shares held through CREST

Under the CREST system for paperless share transfers, deposits of Shares into CREST will generally not be subject to stamp duty or SDRT unless such a transfer is made for a consideration in money or money's worth, in which case a liability to SDRT will arise usually at the rate of 0.5 per cent. of the amount of value of the consideration. Paperless transfers of Shares within CREST are generally liable to SDRT, rather than stamp duty, at the rate of 0.5 per cent. of the amount of value of the consideration. CREST is obliged to collect SDRT on relevant transactions settled within the system. In practice, however, the cost of the SDRT will be borne by the purchaser of the relevant share.

### 13. THE PROPOSED FINANCIAL TRANSACTION TAX (FTT)

On 14 February 2013, the European Commission published a proposal for a Directive for a common FTT in Belgium, Germany, Estonia, Greece, Spain, France, Italy, Austria, Portugal, Slovenia and Slovakia (the participating **Member States**). However, Estonia has since stated that it will not participate.

The Commission's proposal has very broad scope and could, if introduced, apply to certain dealings in the Shares (including secondary market transactions) in certain circumstances.

Under the Commission's proposal, the FTT could apply in certain circumstances to persons both within and outside of the participating Member States. Generally, it would apply to certain dealings in the Shares where at least one party is a financial institution, and at least one party is established in a participating Member State. A financial institution may be, or be deemed to be, "established" in a participating Member State in a broad range of circumstances, including (i) by transacting with a person established in a participating Member State or (ii) where the financial instrument which is subject to the dealings is issued in a participating Member State.

However the FTT proposal remains subject to negotiation between participating Member States. Additional EU Member States may decide to participate. It may therefore be altered prior to any implementation, the timing of which remains unclear. Prospective holders of the Shares are advised to seek their own professional advice in relation to the FTT.

### 14. U.S. FEDERAL INCOME TAXATION

The following is a summary of certain U.S. federal income tax considerations relevant to holders acquiring, holding and disposing of Shares. This summary is based on the U.S. Internal Revenue Code of 1986 (the **Code**), final, temporary and proposed U.S. Treasury regulations, administrative and judicial interpretations, all of which are subject to change, possibly with retroactive effect, as well as on the income tax treaty between the United States and the United Kingdom as currently in force (the **Treaty**).

This summary does not discuss all aspects of U.S. federal income taxation that may be relevant to investors in light of their particular circumstances, such as investors subject to special tax rules (including, without limitation: (i) financial institutions; (ii) insurance companies; (iii) traders or dealers in stocks, securities, or currencies or notional principal contracts; (iv) regulated investment companies; (v) real estate investment trusts; (vi) tax-exempt organisations; (vii) entities that are treated as partnerships or pass-through entities for U.S. federal income tax purposes, or persons that hold Shares through such entities; (viii) holders that own (directly, indirectly or constructively) 10 per cent. or more of the voting stock of the Company; (ix) investors that hold Shares as part of a straddle, hedge, conversion, constructive sale or other integrated transaction for U.S. federal income tax purposes; (x) U.S. Holders (as defined below) that have a functional currency other than the U.S. dollar; and (xi) U.S. expatriates and former long-term residents of the United States), all of whom may be subject to tax rules that differ significantly from those summarised below. This summary does not address tax consequences applicable to holders of equity interests in a holder of the Shares, U.S. federal estate, gift, Medicare contribution or alternative minimum tax considerations, or non-U.S., state or local tax considerations. This summary only addresses investors that will acquire Shares in the Placing or Open Offer, and it assumes that investors will hold their Shares as capital assets (generally, property held for investment).

For the purposes of this summary, a **U.S. Holder** is a beneficial owner of Shares that is for U.S. federal income tax purposes (i) an individual who is a citizen or resident of the United States, (ii) a corporation created in, or organised under the laws of, the United States or any state thereof, including the District of Columbia, (iii) an estate the income of which is includible in gross income for U.S. federal income tax purposes regardless of its source or (iv) a trust that is subject to U.S. tax

on its worldwide income regardless of its source. A **Non-U.S. Holder** is a beneficial owner of Shares that is neither a U.S. Holder nor a partnership.

If a partnership holds Shares, the tax treatment of a partner in such partnership generally will depend upon the status of the partner and the activities of the partnership. Any such partner or partnership should consult their tax advisers as to the U.S. federal income tax consequences to them of the acquisition, ownership and disposition of Shares.

## **14.1 U.S. Holders**

### **14.1.1 Distributions**

As discussed in paragraph 14.3 (*“Passive Foreign Investment Company Rules”*) of this Part 12, the Company believes it was a passive foreign investment company (**PFIC**) for the 12-month period ending 31 December 2016 and expects to be a PFIC for the current year. Subject to the PFIC rules discussed below, a distribution made by the Company on the Shares generally will be treated as a dividend includible in the gross income of a U.S. Holder as ordinary income to the extent of the Company’s current and accumulated earnings and profits as determined under U.S. federal income tax principles. To the extent the amount of such distribution exceeds the Company’s current and accumulated earnings and profits as so computed, the distribution will be treated first as a non-taxable return of capital to the extent of such U.S. Holder’s adjusted tax basis in the Shares and, to the extent the amount of such distribution exceeds such adjusted tax basis, will be treated as gain from the sale of such Shares. The Company does not expect to maintain calculations of earnings and profits for U.S. federal income tax purposes. Therefore, a U.S. Holder should expect that such distribution will generally be treated as a dividend. Such dividends will not be eligible for the dividends received deduction allowed to corporations.

“Qualified dividend income” received by individual and certain other non-corporate U.S. Holders is currently subject to reduced rates applicable to long-term capital gain if (i) the Company is a “qualified foreign corporation” (as defined below) and (ii) such dividend is paid on Shares that have been held by such U.S. Holder for at least 61 days during the 121-day period beginning 60 days before the ex-dividend date. The Company generally will be a “qualified foreign corporation” if (A) it is eligible for the benefits of the Treaty and (B) it is not a PFIC in the taxable year of the distribution or the immediately preceding taxable year. No assurance can be given that the Company will be eligible for the benefits of the Treaty. As discussed above and below, the Company believes it was a PFIC for the 12-month period ending 31 December 2016 and expects to be a PFIC for the current year. Accordingly, dividends on the Shares may not be eligible for the preferential rates on “qualified dividend income” under U.S. federal income tax law.

Dividends on the Shares generally will constitute income from sources outside the United States for foreign tax credit limitation purposes. The amount of any distribution of property other than cash will be the fair market value of the property on the date of the distribution.

The U.S. dollar value of any distribution made by the Company in foreign currency must be calculated by reference to the exchange rate in effect on the date of receipt of such distribution by the U.S. Holder, regardless of whether the foreign currency is in fact converted into U.S. dollars. If the foreign currency so received is converted into U.S. dollars on the date of receipt, such U.S. Holder generally will not recognise foreign currency gain or loss on such conversion. If the foreign currency so received is not converted into U.S. dollars on the date of receipt, such U.S. Holder will have a basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any gain or loss on a subsequent conversion or other disposition of the foreign currency generally will be treated as ordinary income or loss to such U.S. Holder and generally will be income or loss from sources within the United States for foreign tax credit limitation purposes. The rules governing foreign tax credits are complex, and U.S. Holders should consult their tax advisers regarding the creditability of foreign taxes in their particular circumstances.

### **14.1.2 Sale or other Disposition**

Subject to the PFIC rules discussed below, a U.S. Holder generally will recognise gain or loss for U.S. federal income tax purposes upon a sale or other disposition of its Shares in an amount equal to the difference between the amount realised from such sale or disposition and the U.S. Holder’s adjusted tax basis in such Shares, as determined in U.S. dollars. Such gain or loss generally will be capital gain or loss and will be long-term capital gain (taxable at a reduced rate for non-corporate U.S. Holders, such as individuals) or loss if, on the date of sale or disposition, such Shares were held

by such U.S. Holder for more than one year. The deductibility of capital loss is subject to significant limitations. Such gain or loss realised generally will be treated as derived from U.S. sources.

A U.S. Holder that receives foreign currency from a sale or disposition of Shares generally will realise an amount equal to the U.S. dollar value of the foreign currency on the date of sale or disposition or, if such U.S. Holder is a cash basis or electing accrual basis taxpayer and the Shares are treated as being traded on an “established securities market” for this purpose, the settlement date. If the Shares are so treated and the foreign currency received is converted into U.S. dollars on the settlement date, a cash basis or electing accrual basis U.S. Holder will not recognise foreign currency gain or loss on the conversion. If the foreign currency received is not converted into U.S. dollars on the settlement date, the U.S. Holder will have a basis in the foreign currency equal to the U.S. dollar value on the settlement date. Any gain or loss on a subsequent conversion or other disposition of the foreign currency generally will be treated as ordinary income or loss to such U.S. Holder and generally will be income or loss from sources within the United States for foreign tax credit limitation purposes. The rules governing foreign tax credits are complex, and U.S. Holders should consult their tax advisers regarding the creditability of foreign taxes in their particular circumstances.

#### *14.1.3 Passive Foreign Investment Company Rules*

In general, a corporation organised or incorporated outside the United States is a PFIC in any taxable year in which, after taking into account the income and assets of certain subsidiaries, either (i) at least 75 per cent. of its gross income is classified as “passive income” or (ii) at least 50 per cent. of the average quarterly value attributable to its assets produce or are held for the production of passive income. Passive income for this purpose generally includes dividends, interest, royalties, rents and gains from commodities and securities transactions.

Based on the present nature of its activities, including the 2016 Firm Placing and Placing and Open Offer and the present composition of its assets and sources of income, the Company believes that it was a PFIC for the 12-month period ending on 31 December 2016 and expects to be a PFIC for the current year. There can be no assurances that the Company will not be considered to be a PFIC for any particular year because PFIC status is factual in nature, generally cannot be determined until the close of the taxable year in question, and is determined annually. If the Company is classified as a PFIC in any year that a U.S. Holder is a shareholder, the Company generally will continue to be treated as a PFIC for that U.S. Holder in all succeeding years, regardless of whether the Company continues to meet the income or asset test described above. If the Company is a PFIC in any taxable year that a U.S. holder is a shareholder, U.S. Holders may be subject to materially adverse U.S. federal income tax consequences compared to an investment in a company that is not considered a PFIC, including being subject to greater amounts of U.S. tax and being subject to additional U.S. tax form filing requirements. U.S. Holders should consult their own tax adviser about the application to the PFIC rules to their acquisition, holding and disposal of Shares.

If a valid election as discussed below is not in effect, and the Company is a PFIC for any taxable year during which an investor is a U.S. Holder, the investor will be subject to special tax rules with respect to any “excess distribution” received and any gain realised from a sale or other disposition (including a pledge) of Shares. Distributions received in a taxable year that are greater than 125 per cent. of the average annual distributions received during the shorter of the three preceding taxable years or the U.S. Holder’s holding period for the Shares will be treated as excess distributions. Under these special tax rules, (i) the excess distribution or gain will be allocated rateably over the U.S. Holder’s holding period for the Shares; (ii) the amount allocated to the current taxable year will be treated as ordinary income; and (iii) the amount allocated to each other year will be subject to tax at the highest tax rate in effect for that year and an interest charge (at the rate generally applicable to underpayments of tax for the period from such year to the current year) will be imposed on the resulting tax attributable to each such year. A U.S. Holder will generally be subject to similar rules with respect to distributions to the Company by, and dispositions by the Company of the stock of, any direct or indirect subsidiaries of the Company that are also PFICs (such subsidiaries, **lower-tier PFICs**).

In general, a U.S. Holder subject to the PFIC rules discussed above or below is required to file IRS Form 8621 with respect to its investment in the Shares.

#### *14.1.4 Mark-to-market election*

To mitigate the application of the PFIC rules discussed above, a U.S. Holder may make an election to include gain or loss on the Shares as ordinary income or loss under a mark-to-market method, provided that the Shares are regularly traded on a qualified exchange. If a U.S. Holder makes an



effective mark-to-market election, the U.S. Holder will include in each year as ordinary income the excess of the fair market value of its Shares at the end of the year over its adjusted tax basis in the Shares. The U.S. Holder will be entitled to deduct as an ordinary loss each year the excess of its adjusted tax basis in the Shares over their fair market value at the end of the year, but only to the extent of the net amount previously included in income as a result of the mark-to-market election. A U.S. Holder's adjusted tax basis in the Shares will be increased by the amount of any income inclusion and decreased by the amount of any deductions under the mark-to-market rules. In addition, gains from an actual sale or other disposition of Shares will be treated as ordinary income, and any losses will be treated as ordinary losses to the extent of any mark-to-market gains for prior years. Because a mark-to-market election may not be available for equity interests in any lower-tier PFICs, a U.S. Holder may continue to be subject to the PFIC rules with respect to its indirect interest in such lower-tier PFICs. U.S. Holders should consult their tax advisers as to the availability and desirability of a mark-to-market election, as well as the impact of such election on interests in any lower-tier PFICs.

If a U.S. Holder makes a mark-to-market election, it will be effective for the taxable year for which the election is made and all subsequent taxable years unless the Shares are no longer regularly traded on a qualified exchange or the IRS consents to the revocation of the election.

#### *14.1.5 Qualified electing fund election*

To mitigate the application of the PFIC rules discussed above, a U.S. Holder may make an election to treat the Company as a qualified electing fund (**QEF**) for U.S. federal income tax purposes. To make a QEF election, the Company must provide U.S. Holders with information compiled according to U.S. federal income tax principles. The Company currently does not intend to compile such information for U.S. Holders, and therefore it is expected that this election will be unavailable.

#### **14.2 Non-U.S. Holders**

A Non-U.S. Holder generally should not be subject to U.S. federal income or withholding tax on any payments on the Shares and gain from the sale, redemption or other disposition of the Shares unless: (i) that payment and/or gain is effectively connected with the conduct by that Non-U.S. Holder of a trade or business in the U.S.; (ii) in the case of any gain realised on the sale or exchange of a Share by an individual Non-U.S. Holder, that U.S. Holder is present in the U.S. for 183 days or more in the taxable year of the sale, exchange or retirement and certain other conditions are met; or (iii) the Non-U.S. Holder is subject to tax pursuant to provisions of the Code applicable to certain expatriates.

#### **14.3 U.S. Information Reporting and Backup Withholding Tax**

Payments made through a U.S. paying agent or U.S. intermediary to a U.S. Holder may be subject to information reporting unless the U.S. Holder establishes that payments to it are exempt from these rules. Payments that are subject to information reporting may be subject to backup withholding if a U.S. Holder does not provide its taxpayer identification number and otherwise comply with the backup withholding rules. Non-U.S. Holders may be required to comply with applicable certification procedures to establish that they are not U.S. Holders in order to avoid the application of such information reporting requirements and backup withholding. Backup withholding is not an additional tax. Amounts withheld under the backup withholding rules are available to be credited against a U.S. Holder's U.S. federal income tax liability and may be refunded to the extent they exceed such liability, provided the required information is timely provided to the IRS.

Under U.S. federal income tax law and regulations, certain categories of U.S. persons must file information returns with respect to their investment in the equity interests of a foreign corporation. A U.S. person that purchases for cash Shares will be required to file IRS Form 926 or similar form if the transfer, when aggregated with all transfers made by such person (or any related person) within the preceding 12 month period, exceeds US\$100,000. In the event a U.S. Holder fails to file any such required form, the U.S. Holder could be required to pay a penalty equal to 10 per cent. of the gross amount paid for such Shares up to a maximum penalty of US\$100,000.

Certain U.S. Holders that own "specified foreign financial assets" that meet certain U.S. dollar value thresholds generally are required to file an information report with respect to such assets with their tax returns. The Shares generally will constitute specified foreign financial assets subject to these reporting requirements unless the Shares are held in an account at certain financial institutions. U.S. Holders are urged to consult their tax advisers regarding the application of these disclosure requirements to their ownership of the Shares.

## **15. LITIGATION AND ARBITRATION**

There are no governmental, legal or arbitration proceedings (including any such proceedings which are pending or threatened of which the Company is aware) covering at least the 12 months preceding the date of this Prospectus which may have, or have had a significant effect on the Group's financial position or profitability.

## **16. RELATED PARTY TRANSACTIONS**

Save as described in the Group's Historical Financial Information for the year ended 31 December 2016, the nine months ended 31 December 2015 and for the financial years ended 31 March 2015 and 31 March 2014 and as set out in Note 21 thereof; and save as provided below, there were no related party transactions entered into by the Company during the financial years ended 31 March 2015 and 31 March 2014, during the nine months ended 31 December 2015, during the year ended 31 December 2016 and during the period between 1 January 2017 and 21 April 2017 (being the latest practicable date prior to publication of this Prospectus):

- On 27 April 2016, Noel Harwerth purchased 49,608 of the Company's Shares at an average price of 18.12 pence each.
- On 28 April 2016, Jane Lodge purchased 100,000 of the Company's Shares at an average price of 18.35 pence each.
- On 11 May 2016, the Company awarded 833,340 Shares to Chris Fraser at an average price of 18.25 pence each, under the Company's short-term incentive plan. In addition, Chris Fraser was awarded 1,239,006 Shares as part of the Company's long-term incentive plan. However, these Shares only vest once certain conditions have been met.
- On 28 November 2016, following completion of the 2016 Firm Placing and Placing and Open Offer, the following Directors and Senior Management purchased Shares at the offer price of 20.0 pence per Share:
  - Russell Scrimshaw purchased 2,557,142 Shares;
  - Keith Clarke CBE purchased 227,208 Shares;
  - Noel Harwerth purchased 9,644 Shares;
  - Lord Hutton purchased 2,285 Shares;
  - Jane Lodge purchased 16,000 Shares;
  - Thomas Staley purchased 42,400 Shares; and
  - Nicholas King purchased 36,282 Shares.
- In addition, on 28 November 2016, in order to reflect the impact of the 2016 Firm Placing and Placing and Open Offer on the Company's existing share options, the Board approved certain market standard adjustments to the Company's outstanding share options, including those awarded to Chris Fraser, Keith Clarke CBE, Lord Hutton, Thomas Staley, Nicholas King and Simon Carter. The adjusted option position is summarised in paragraph 6.1.1 ("*Share Plans*") of this Part 12.

## **17. WORKING CAPITAL**

In the opinion of the Company, the working capital available to the Group is sufficient for the Group's present requirements, that is, for at least the 12 months following the date of this Prospectus and for at least 12 months from the date of Admission.

## **18. NO SIGNIFICANT CHANGE**

There has been no significant change in the financial or trading position of the Group since 31 December 2016, being the date to which the latest financial information of the Group in Part 11 ("*Historical Financial Information*") of this Prospectus was prepared.

## **19. MANDATORY BIDS AND COMPULSORY ACQUISITION**

The City Code is issued and administered by the Panel. The Company is subject to the City Code and therefore shareholders are entitled to the protection afforded by the City Code.

### **19.1 Mandatory bids**

Under Rule 9 of the City Code when (i) a person acquires an interest in shares which (taken together with shares he and persons acting in concert with him are interested) carry 30 per cent. or more of the voting rights of a company subject to the City Code, or (ii) a person who, together with persons acting in concert with him, is interested in shares which in the aggregate carry not less than 30 per cent. of the voting rights of a company, but does not hold shares carrying more than 50 per cent. of the voting rights of the company subject to the City Code, and such person, or any persons acting in concert with him, acquires an interest in any other shares which increases the percentage of the shares carrying voting rights in which he is interested, then in either case, that person together with the person acting in concert with him, is required (except with the consent of the Panel) to extend a cash offer for the outstanding shares in the Company, at a price not less than the highest price paid by him (or any persons acting in concert with him) for shares in the company within the preceding 12 months, to the holders of any class of equity share capital whether voting or non-voting and also to the holders of any other class or transferable securities carrying voting rights.

Based on notifications to the Company in accordance with Chapter 5 of the Transparency Rules, those shareholders noted in paragraph 6.2 (“*Significant Shareholders*”) of this Part 12 were interested in an aggregate of approximately 57.5 per cent. of the issued share capital of the Company as at 21 April 2017 (being the latest practicable date prior to the date of this Prospectus). Any buy back by the Company of Shares may give rise to an increase in the percentage ownership of the Company’s issued Shares by these major shareholders.

### **19.2 Squeeze out and sell-out**

Under sections 974 to 991 of the Companies Act, if an offeror acquires or contracts to acquire (pursuant to a takeover offer) not less than 90 per cent. of the shares in the Company (in value and by voting rights) to which such offer relates, it may then, within three months of the last day on which its takeover offer can be accepted, compulsorily acquire the outstanding shares not assented to the offer. The offeror would do so by sending a notice to outstanding holders of shares telling them that it will compulsorily acquire their shares and then, six weeks later, it would execute a transfer of the outstanding shares in its favour and pay the consideration to the Company, which would hold the consideration on trust for the outstanding holders of shares. The consideration offered to the holders whose shares are compulsorily acquired under the Companies Act must, in general, be the same as the consideration that was available under the takeover offer.

In addition, pursuant to section 983 of the Companies Act, if an offeror acquires or agrees to acquire not less than 90 per cent. of the shares in the Company (in value and by voting rights) to which the offer relates, any holder of shares to which the offer relates who has not accepted the offer may require the offeror to acquire his/her shares on the same terms as the takeover offer. The offeror would be required to give any holder of shares notice of his/her right to be bought out within one month of that right arising. These sell-out rights cannot be exercised after the end of the period of three months from the last date on which the offer can be accepted or, if later, three months from the date on which the notice is served on the holder of shares notifying him/her of their sell-out rights. If a holder of shares exercises his/her rights, the offeror is bound to acquire those shares on the terms of the offer or on such other terms as may be agreed.

## **20. CONSENTS**

J.P. Morgan Cazenove has given and has not withdrawn its written consent to the inclusion in this Prospectus of its name and the references to it in the form and context in which they appear.

SRK has given and not withdrawn its written consent to the inclusion in this Prospectus of its report in Part 14 (“*Competent Person’s Report*”) and its name and references thereto in the form and context in which they appear and has authorised the contents of those parts of this Prospectus which comprise its report for the purposes of PR 5.5.3R(2)(f) of the Prospectus Rules.

A written consent under the Prospectus Rules is different from a consent filed with the SEC under section 7 of the Securities Act. As the Shares have not been and will not be registered under the Securities Act, PwC has not filed and will not be required to file a consent under section 7 of the Securities Act.

## **21. AUDITOR**

PricewaterhouseCoopers LLP (**PwC**) whose registered address is Central Square, 29 Wellington Street, Leeds, LS1 4DL, United Kingdom, has been the independent auditors of the Company since 31 October 2012.

PwC is a member of the Institute of Chartered Accountants in England and Wales.

## **22. GENERAL**

The financial information contained in this Prospectus which relates to the Company does not constitute full statutory accounts as referred to in section 434 of the Companies Act. Statutory consolidated audited accounts of the Company, on which the auditors have given unqualified reports and which contained no statement under section 498(2) or (3) of the Companies Act, have been delivered to the Registrar of Companies in respect of the financial years ended 31 March 2015 and 31 March 2014, the nine months ended 31 December 2015 and the financial year ended 31 December 2016.

The Company has taken out “directors’ and officers’ insurance” in respect of the Directors and Senior Management on terms which the Directors consider to be appropriate in the context of the business of the Group. Each of the Directors will have the benefit of a qualifying third party indemnity (the terms of which are in accordance with the Companies Act).

## **23. DOCUMENTS AVAILABLE FOR INSPECTION**

Copies of the following documents are available for inspection during usual business hours on any weekday (Saturdays, Sundays and public holidays excepted) for a period of 12 months from the date of Admission at the office of the Company’s counsel, Allen & Overy LLP at One Bishops Square, London, E1 6AD, United Kingdom.

- the existing articles of association of the Company;
- the consent letters referred to in paragraph 20 (“*Consents*”) of this Part 12;
- the Historical Financial Information and the relevant auditor’s report thereon by PwC in included (in the case of the financial statements as at and for the year ended 31 December 2016) or incorporated by reference into (in the case of the financial statements as at and for the nine months ended 31 December 2015, and as at and for the years ended 31 March 2015 and 31 March 2014, Section A and Section B of Part 11 (“*Historical Financial Information*”) of this Prospectus;
- the Competent Person’s report by SRK set out in Part 14 (“*Competent Person’s Report*”) of this Prospectus;
- the Existing Prospectus; and
- this Prospectus.

## PART 13

### DEFINITIONS AND GLOSSARY

#### Definitions

The following definitions apply throughout this Prospectus unless the context requires otherwise:

<b>2013 Convertible Security Financing</b>	has the meaning given to it in paragraph 3.2 (“ <i>Changes to Share Capital</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>2016 Convertible Bond Offering</b>	the CBO was launched on 3 November 2016
<b>2016 Firm Placing and Placing and Open Offer</b>	the 2016 firm placing and placing and open offer by the Company, announced on 3 November 2016 and completed on 28 November 2016
<b>Admission</b>	admission of the Shares to the premium listing segment of the Official List of the FCA and to trading on the London Stock Exchange’s Main Market for listed securities
<b>ADRs</b>	American Depositary Receipts, a negotiable U.S. certificate representing ownership of shares in the Company. Each ADR evidences a single American Depositary Share representing 50 Shares of the Company
<b>ADR Holders</b>	the holders of any ADRs from time to time and <b>ADR Holder</b> means any one of them
<b>AIM</b>	the market of that name operated by the London Stock Exchange
<b>AMC</b>	Associated Mining Construction UK Limited
<b>American Depositary Shares</b>	the securities represented by the rights and interests in the Shares deposited under the Deposit Agreement, granted to ADR Holders pursuant to the terms and conditions of the Deposit Agreement and evidenced by the ADRs issued pursuant to the Deposit Agreement
<b>Articles</b>	the articles of association of the Company, as at the date of the Admission, a summary of which is set out in paragraph 4 (“ <i>Summary of the Articles of Association</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>Audit Committee</b>	the audit committee of the Board, as constituted from time to time
<b>Awards</b>	awards that may be granted under the SBIP by the Board, as described in paragraph 8.3 (“ <i>The Sirius Minerals plc Share Based Incentive Plan (SBIP)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>BIS</b>	Department of Business Innovation and Skills
<b>Board</b>	the board of directors of the Company from time to time
<b>Break Date</b>	has the meaning given to it in paragraph 11.2.2 (“ <i>MTS Landowner Option Agreements</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>Brexit</b>	the United Kingdom’s June 2016 referendum vote to leave the European Union
<b>Business Day</b>	a day (other than Saturday, Sunday or a public holiday) on which banks are generally open for business in the City of London for the transaction of normal banking business
<b>Capital Funding Period</b>	period of construction for which the Capital Funding Requirement is needed to fund construction capital costs, from the Construction Commencement Date to the end of the quarter prior to which the Project generates positive net cash flow, which is currently expected to be six years after the Construction Commencement Date
<b>Capital Funding Requirement</b>	the Company’s estimate of the total expected Project construction-related capital costs during the Capital Funding Period, comprised

	of the Stage 1 Capital Funding Requirement and the Stage 2 Capital Funding Requirement
<b>CEMF</b>	the Construction Environmental Management Framework developed by the Company
<b>certificated or certificated form</b>	recorded on the relevant register of the share or security concerned as being held in certificated form in physical paper (that is, not in CREST)
<b>Chairman</b>	Russell Scrimshaw
<b>Chief Executive Officer or CEO</b>	Chris Fraser
<b>Chief Financial Officer or CFO</b>	Thomas Staley
<b>City Code</b>	the City Code on Takeovers and Mergers
<b>Code</b>	the U.S. Internal Revenue Code of 1986
<b>Companies Act</b>	the Companies Act 2006, as amended
<b>Company</b>	Sirius Minerals Plc
<b>Competent Person</b>	SRK
<b>Conditional Share Awards</b>	conditional rights to acquire Shares
<b>Construction Commencement Date</b>	1 January 2017, being the date of commencement of scheduled construction activities for the Project
<b>Contingent Funding Facility</b>	a US\$400,000,000 contingent funding facility as described in paragraph 11.6.4 (“ <i>Mandated Lead Arrangers Engagement Letter for Stage 2 Financing</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>Convertible Bonds</b>	the US\$400 million convertible bonds due 2023, issued by Sirius Minerals Finance Limited, a wholly owned subsidiary of the Company incorporated in Jersey, on 28 November 2016 and guaranteed by the Company
<b>Convertible Bond Conversion</b>	the conversion of any Convertible Bonds into redeemable preference shares of Sirius Minerals Finance Limited which will be automatically exchanged into fully paid Shares of the Company, all in accordance with the terms and conditions of the Convertible Bonds
<b>Convertible Security Financing</b>	has the meaning given to it in paragraph 3.2 (“ <i>Changes to Share Capital</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>CREST</b>	the electronic transfer and settlement system for the paperless settlement of trades in listed securities operated by Euroclear
<b>CREST Regulations</b>	the Uncertificated Securities Regulations 2001 (SI 2001 No. 01/378)
<b>CRU</b>	CRU Strategies, a fertilizer industry consultancy
<b>CSEF</b>	Community and Stakeholder Engagement Framework
<b>CSOP</b>	Company Share Option Plan
<b>Deposit Agreement</b>	deposit agreement between, among others, the Company and the Depositary dated 30 March 2009 and as amended on 8 December 2014
<b>Depositary</b>	Deutsche Bank Trust Company Americas as depositary under the Deposit Agreement
<b>Dian Huang</b>	Yunnan Dian Huang Peony Industrial Group Co., Ltd
<b>Directors</b>	the Executive Directors and Non-Executive Directors of the Company
<b>Disclosure Guidance and Transparency Rules</b>	the disclosure guidance and transparency rules of the FCA
<b>EBT</b>	the Company’s Employee Benefit Trust

<b>ECI Contracts</b>	the early contractor involvement contracts to be entered into by the Company with the mine site and MTS preferred contractors
<b>EMS</b>	the in-house environmental management system for operations that is intended to be designed and implemented by the Company and will meet ISO 14001:2015 requirements
<b>Employee's Interest</b>	has the meaning given to it in paragraph 6.1.3 (" <i>Jointly Owned Equity Awards</i> ") of Part 12 (" <i>Additional Information</i> ") of this Prospectus
<b>euro or €</b>	the currency introduced at the third stage of European economic and monetary union pursuant to the Treaty establishing the European Community, as amended
<b>Euroclear</b>	Euroclear UK and Ireland Limited, the operator (as defined in the CREST Regulations) of CREST
<b>European Economic Area</b>	the European Union, Iceland, Norway and Liechtenstein
<b>European Union or EU</b>	an economic and political union of 28 member states which are located in Europe
<b>Executive Directors</b>	Chris Fraser and Thomas Staley
<b>Existing Prospectus</b>	the Company's prospectus in relation to the 2016 Firm Placing and Placing and Open Offer approved by the FCA and published on 3 November 2016
<b>Existing Shares</b>	the 4,164,514,405 Shares in issue as at 21 April 2017 (being the latest practicable date prior to the publication of this Prospectus)
<b>Expansion Phase</b>	the expansion phase of the Project, intended to eventually increase production capacity to 20 mtpa, subject to receipt of additional planning permissions and the completion of additional infrastructure
<b>Facilities</b>	the project finance facility and Contingent Funding Facility described in the Mandate Letter summary at paragraph 11.6.4 (" <i>Mandated Lead Arrangers Engagement Letter for Stage 2 Financing</i> ") of Part 12 (" <i>Additional Information</i> ") of this Prospectus
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FCA</b>	the UK Financial Conduct Authority
<b>FIDIC</b>	International Federation of Consulting Engineers
<b>FSAs</b>	framework sales agreements
<b>FSMA</b>	the UK Financial Services and Markets Act 2000, as amended
<b>GDP</b>	gross domestic product
<b>Group</b>	Sirius Minerals plc and its subsidiaries
<b>Hancock</b>	Hancock British Holdings Ltd, a subsidiary of Hancock Prospecting Pty Ltd
<b>Historical Financial Information</b>	the Group's audited consolidated financial statements for the year ended 31 December 2016 as at and for the nine months ended 31 December 2015 and as at and for the years ended 31 March 2015 and 31 March 2014, prepared in accordance with IFRS as adopted by the European Union
<b>HMRC</b>	Her Majesty's Revenue and Customs
<b>HMT</b>	Her Majesty's Treasury
<b>HSE</b>	health, safety and environmental
<b>IFRS</b>	International Financial Reporting Standards

<b>Incentive Options</b>	the Company share option scheme described in paragraph 8.4 (“ <i>The Sirius Minerals plc Incentive Option Scheme (IOS)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>Independent Non-Executive Directors</b>	Noel Harwerth, Keith Clarke, Louise Hardy, Lord Hutton and Jane Lodge
<b>Initial Construction Phase</b>	the initial construction phase of the Project, intended to achieve first commercial production from the mine by the end of 2021 with production capacity ramping up to 10 mtpa by mid-2024
<b>IOS</b>	a Company incentive option scheme administered by the Board, described in paragraph 8.4 (“ <i>The Sirius Minerals plc Incentive Option Scheme (IOS)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>IPA</b>	Infrastructure and Projects Authority, formerly Infrastructure UK
<b>JOE Award</b>	has the meaning given to it in paragraph 8.3 (“ <i>The Sirius Minerals plc Share Based Incentive Plan (SBIP)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>JOE Award Option</b>	has the meaning given to it in paragraph 8.3 (“ <i>The Sirius Minerals plc Share Based Incentive Plan (SBIP)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>JOE Award Terms</b>	has the meaning given to it in paragraph 6.1.3 (“ <i>Jointly Owned Equity Awards</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>J.P. Morgan Cazenove</b>	J.P. Morgan Securities plc, which conducts its UK investment banking business as J.P. Morgan Cazenove, Sole Sponsor
<b>LIBOR</b>	London Interbank Offered Rate
<b>Listing Rules</b>	the listing rules made by the FCA pursuant to Part VI of FSMA
<b>LoIs</b>	letters of intent
<b>London Stock Exchange</b>	London Stock Exchange plc
<b>Main Market</b>	the main market for listed securities of the London Stock Exchange
<b>Mandate Letter</b>	the mandate letter entered into between the Company and the Mandated Lead Arrangers on 3 November 2016 in connection with a potential senior debt financing
<b>Mandated Lead Arrangers</b>	Export Development Canada, ING, J.P. Morgan, Lloyds Bank plc, Société Générale Corporate & Investment Banking and The Royal Bank of Scotland Plc
<b>Market Abuse Regulation</b>	Regulation (EU) No. 596/2014 of the European Parliament and the Council of 16 April 2014 on market abuse
<b>Member State</b>	member state of the EU
<b>MHF</b>	Materials Handling Facility
<b>MTS</b>	Mineral Transport System
<b>MOUs</b>	memorandums of understanding signed by the Company, its subsidiaries, or authorised agents
<b>Shares</b>	the ordinary shares of the Company
<b>Nominations Committee</b>	the nominations committee of the Board, as constituted from time to time
<b>Non-Executive Directors</b>	Russell Scrimshaw, Noel Harwerth, Keith Clarke, John Hutton, Jane Lodge and Louise Hardy
<b>NYCC</b>	North Yorkshire County Council
<b>NYMNP</b>	North York Moors National Park
<b>NYMNPA</b>	North York Moors National Park Authority



<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>Official List</b>	the Official List maintained by the FCA
<b>Offtake Agreements</b>	the binding take-or-pay offtake agreements signed by the Company or YPL which obligate customers to buy a minimum amount of POLY4 once production begins and pay a given price
<b>Option Price</b>	has the meaning given to it in paragraph 8.1 (“ <i>The Sirius Minerals plc Company Share Option Plan (CSOP)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>Options</b>	has the meaning given to it in paragraph 8.1 (“ <i>The Sirius Minerals plc Company Share Option Plan (CSOP)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>Panel</b>	the Panel on Takeovers and Mergers established under the City Code
<b>PCAOB Standards</b>	the standards of the Public Company Accounting Oversight Board
<b>PD Regulation</b>	the Prospectus Directive Regulation of the European Union, Commission Regulation (EC) No. 809/2004 (as amended)
<b>PFIC</b>	passive foreign investment company
<b>Placing</b>	the subscription by placees of 225,978,103 Shares under the Open Offer
<b>POLY4</b>	the Company’s trade marked polyhalite product
<b>pounds sterling or £</b>	the lawful currency of the United Kingdom of Great Britain and Northern Ireland
<b>PRA</b>	Prudential Regulation Authority
<b>Project</b>	North Yorkshire polyhalite project
<b>Prospectus</b>	this document
<b>Prospectus Directive or PD</b>	Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive to the extent implemented in the Relevant Member State) and includes any relevant implementing measure in each Relevant Member State
<b>Prospectus Rules</b>	the prospectus rules made by the FCA under Part VI of FSMA relating to offers of transferrable securities to the public and admission of transferrable securities to trading on a regulated market
<b>PwC</b>	PricewaterhouseCoopers LLP, the independent auditors of the Company
<b>QEF</b>	has the meaning given to it in paragraph 14.3.2 (“ <i>Qualified electing fund election</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>RCBC</b>	Redcar and Cleveland Borough Council
<b>Regulation S</b>	Regulation S under the Securities Act
<b>Regulatory Information Service</b>	one of the regulatory information services authorised by the FCA to receive, process and disseminate regulatory information from listed companies
<b>Relevant Member State</b>	each Member State of the European Economic Area that has implemented the Prospectus Directive
<b>Remuneration Committee</b>	the remuneration committee of the Board, as constituted from time to time
<b>Royalty</b>	the royalty on the Project of five per cent. of gross revenue (less deductible allowances) on the first 13 mtpa of sales in each calendar year and one per cent. for sales volumes above 13 mtpa in return for

	US\$250 million, to be granted by the Company to Hancock pursuant to the terms of the Royalty Financing Agreement
<b>Royalty Financing</b>	the purchase of the Royalty in return for US\$250 million and subscription of 200,076,829 Shares for US\$50 million by Hancock pursuant to the terms of the Royalty Financing Agreement
<b>Royalty Financing Agreement</b>	the agreement between the Company, YPL, YPPPL and Hancock dated 25 October 2016 in connection with the Royalty Financing, as more fully described in paragraph 11.6.3 (“ <i>Royalty Financing Agreement</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>SBIP</b>	the Company share based incentive plan described at paragraph 8.3 (“ <i>The Sirius Minerals plc Share Based Incentive Plan (SBIP)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>SBIP Options</b>	the SBIP options described at paragraph 8.3 (“ <i>The Sirius Minerals plc Share Based Incentive Plan (SBIP)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>SDRT</b>	stamp duty reserve tax
<b>SEC</b>	the U.S. Securities and Exchange Commission
<b>Securities Act</b>	the U.S. Securities Act of 1933, as amended
<b>Senior Management</b>	Chris Fraser, Nicholas King, Simon Carter and J.T. Starzecki
<b>SFT</b>	Scrimshaw Family Trust
<b>Shares</b>	ordinary shares of 0.25 pence each in the capital of the Company, which do not include ADRs
<b>Share Plans</b>	the employee share incentive plans listed in paragraph 8 (“ <i>Employee Share Plans</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>Shareholders</b>	holders of Shares
<b>Sole Sponsor</b>	J.P. Morgan Cazenove
<b>SRK</b>	SRK Consulting (UK) Ltd
<b>Stage 1 Capital Funding Requirement</b>	the amount of the Capital Funding Requirement intended to be raised as part of the Stage 1 Financing, which is currently expected to amount to approximately US\$1.1 billion and which is intended to fund the first stage of capital costs of the Initial Construction Phase, comprising the direct costs of all site preparation, mine shaft excavations, tunnel caverns and a proportion of the indirect costs, project management and owner costs as well as provide contingency funds for the Project
<b>Stage 2 Capital Funding Requirement</b>	the amount of the Capital Funding Requirement intended to be raised as part of the Stage 2 Financing, which is currently expected to amount to approximately US\$1.8 billion and which is intended to fund the second stage of the capital costs of the Initial Construction Phase, comprising the remainder of the Capital Funding Requirement after the Stage 1 Financing has been utilised which largely includes costs relating to tunnelling, MTS and mine fit out, the MHF and outsourcing charges relating to the harbour facilities
<b>Stage 1 Financing</b>	a total of approximately US\$1.2 billion in financing, consisting of the proceeds of the 2016 Firm Placing and Placing and Open Offer, the 2016 Convertible Bond Offering and the Royalty Financing, intended to fund the Stage 1 Capital Funding Requirement of approximately US\$1.1 billion plus an additional US\$0.1 billion in financing costs

<b>Stage 2 Financing</b>	a total of up to US\$2.6 billion in financing, currently expected to be fully funded by senior debt facilities currently expected to amount to approximately US\$1.8 billion that are intended to fund the Stage 2 Capital Funding Requirement, plus commitments from lenders intended to provide the Company with the capacity to pay financing costs (comprising interest expenses, principal repayment amounts as well as administrative costs, fees and other charges associated with the financing) of up to US\$0.8 billion
<b>Subscription Agreement</b>	the subscription agreement relating to the 2016 Convertible Bond Offering, as more fully described in paragraph 11.6.2 (“ <i>Subscription Agreement relating to the 2016 Convertible Bond Offering</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>TFC</b>	Tanzania Fertilizer Company
<b>U.S. GAAP</b>	U.S. Generally Accepted Accounting Principles
<b>U.S. GAAS</b>	U.S. Generally Accepted Auditing Standards
<b>UK Corporate Governance Code</b>	UK Corporate Governance Code, published by the Financial Reporting Council in April 2016
<b>UK Listing Authority or UKLA</b>	the FCA when it is exercising its powers under Part VI of FSMA
<b>UKGS</b>	UK Guarantee Scheme
<b>uncertificated or uncertificated form</b>	a share or other security recorded on the relevant register of the share or security concerned as being held in uncertificated form in CREST and title to which by virtue of the CREST Regulations, may be transferred by means of CREST
<b>United Kingdom or UK</b>	the United Kingdom of Great Britain and Northern Ireland
<b>United States or U.S.</b>	the United States of America, its territories and possessions, any state of the United States of America and the District of Columbia
<b>U.S. dollars or US\$</b>	the lawful currency of the United States
<b>U.S. Holder</b>	a beneficial owner of Shares for U.S. federal income tax purposes
<b>USOP</b>	the Company unapproved share option plan described at paragraph 8.2 (“ <i>The Sirius Minerals plc Unapproved Share Option Plan (USOP)</i> ”) of Part 12 (“ <i>Additional Information</i> ”) of this Prospectus
<b>VAT</b>	value added tax
<b>Whitby Option Agreement</b>	The option agreement relating to a site at Whitby in North Yorkshire
<b>Yunnan TCT</b>	Yunnan TCT Yong-Zhe Company Limited
<b>YPF</b>	York Potash Foundation
<b>YPL</b>	York Potash Ltd
<b>YPPPL</b>	York Potash Processing & Ports Limited

## Glossary

The following technical terms (or variations thereof) are used in this Prospectus:

<b>CIF</b>	cost, insurance and freight
<b>CPR or Competent Person's Report</b>	the Competent Person's report produced by SRK at the request of the Company as a digest of the work underlying the DFS, as set out in Part 14 (" <i>Competent Person's Report</i> ") of this Prospectus
<b>DCO</b>	Development Consent Order, a permission granted under the Planning Act 2008
<b>Definitive Feasibility Study or DFS</b>	definitive feasibility study conducted with respect to the Project and released in March 2016
<b>EBITDA</b>	earnings before interest, tax, depreciation and amortisation
<b>Indicated Mineral Resource</b>	part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence
<b>Inferred Mineral Resource</b>	part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence
<b>IRR</b>	the internal rate of return
<b>JORC Code or JORC</b>	the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves as published by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia
<b>Measured Mineral Resource</b>	part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence
<b>Mineral Resource</b>	a mineral deposit that is potentially valuable and for which reasonable prospects exist for eventual economic extraction
<b>Mines Regulations</b>	The Mines Regulations 2014 (which came into force on 6 April 2015)
<b>MOP</b>	muriate of potash
<b>MPAs</b>	local mineral planning authorities
<b>Mt, tonne or t</b>	metric tonnes
<b>mtpa</b>	million tonnes per annum
<b>NPK</b>	nitrogen-phosphorus-potassium
<b>NPV</b>	net present value
<b>Ore Reserve</b>	the economically mineable part of a Measured and/or Indicated Mineral Resource
<b>post-construction</b>	as defined in the S106 agreements, the construction period lasts until the latest of the following dates occurs: (a) the removal of the temporary winding towers at the Woodsmith mine, (formerly known as Dove's Nest Farm) and at Lady Cross; (b) one year after the completion of tree planting, shrub planting and seeding of bunds pursuant to Conditions 57 and 71 of the NYMNPA Planning Permission; (c) the MTS becoming operational (i.e., the date that the movement of polyhalite by road ceases); and (d) the removal of the temporary right hand turn lane at the shaft entrance to the Woodsmith mine
<b>Probable Ore Reserve</b>	as defined in the JORC Code described at paragraph 4.1 (" <i>Cautionary Note to Investors Regarding Mineral Disclosures; Basis of Preparation; Key Terms</i> ") of Part 5 (" <i>Presentation of Information</i> ") of this Prospectus

<b>Proved Ore Reserve</b>	as defined in the JORC Code described at paragraph 4.1 ( <i>“Cautionary Note to Investors Regarding Mineral Disclosures; Basis of Preparation; Key Terms”</i> ) of Part 5 ( <i>“Presentation of Information”</i> ) of this Prospectus
<b>S106 agreements</b>	agreements pursuant to section 106 of the Town and County Planning Act 1900 that have been entered into by the Company and the planning permission authorities to regulate the Project
<b>SOP</b>	sulphate of potash
<b>SOPM</b>	sulphate of potash and magnesium

**PART 14**  
**COMPETENT PERSON'S REPORT**

# **COMPETENT PERSONS REPORT ON THE MINERAL RESOURCES AND ORE RESERVES OF SIRIUS MINERALS IN THE UK**

**Prepared For  
SIRIUS MINERALS PLC**

**Report Prepared by**



**SRK Consulting (UK) Limited  
UK5678**

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version: Jan2015

<b>SRK Legal Entity:</b>	SRK Consulting (UK) Limited
<b>SRK Address:</b>	5 <sup>th</sup> Floor Churchill House 17 Churchill Way Cardiff, CF10 2HH Wales, United Kingdom.
<b>Date:</b>	April 2017
<b>Project Number:</b>	UK5678
<b>SRK Project Director:</b>	Mike Armitage Corporate Consultant, Group Chairman (Resource Geology)
<b>SRK Project Manager:</b>	Tim McGurk Director, Corporate Consultant (Mining Engineering)
<b>Client Legal Entity:</b>	Sirius Minerals plc
<b>Client Address:</b>	7 – 10 Manor Court, Manor Garth, Scarborough, YO11 3TU, UK.



## **EXECUTIVE SUMMARY**

### **COMPETENT PERSONS REPORT ON THE MINERAL RESOURCES AND ORE RESERVES OF SIRIUS MINERALS IN THE UK**

## **1 INTRODUCTION**

SRK Consulting (UK) Limited (SRK) has been requested by Sirius Minerals Plc (Sirius or the Company) to prepare a Competent Persons Report (CPR) on its 100% owned North Yorkshire Polyhalite Project (the Project) on which Bechtel Limited (Bechtel) compiled a Definitive Feasibility Study (DFS) in 2016. This is essentially an update of the CPR SRK produced in August 2016.

Following completion of the DFS, Sirius updated its capital cost forecast and development schedule for the Project to reflect a revised implementation strategy in which Sirius itself will manage its contractors rather than involve a project management contractor. This update also reflected a review of spares requirements and some scope revisions; and also a capital cost estimate and construction schedule developed by the now selected preferred shaft contractor. SRK's August 2016 CPR reflected SRK's view of the Project as presented in the DFS, but inclusive of the changes resulting from this work.

In addition, to the above the Company has now also completed further design work and testwork, obtained sufficient funding to commence construction of the Project and has started to put its construction team together and has developed a detailed budget for the work required to be done in 2017 inclusive of the drilling of a final drillhole at the site of the production shaft. None of the design work or testwork has been advanced to the point at which any material changes have been made to the Project as envisaged in the CPR SRK produced in August 2016 and so the valuation presented here remains as presented in that document. Notwithstanding this, this updated CPR does include a summary of this work and the work planned for 2017 and budget for this.

## **2 ASSET SUMMARY**

The DFS envisages the development of two vertical shafts to a depth in excess of 1,500m to access a polyhalite deposit and the mining of this at an initial rate of up to 10 million tonnes per annum (Mtpa) for transport to Teesside by underground conveyor for onward distribution to customers by ship. There is also potential for the mining rate to be further increased to 13Mtpa and then 20 Mtpa and the infrastructure is being developed with this in mind. Notwithstanding this, it is the lower rate of 10Mtpa that the Development Plan and Ore Reserve presented in this report are based upon.

The orebody planned to be mined by the Company comprises a polyhalite mineral deposit which is stratigraphically located within the Zechstein Group in the North Sea Basin and consists predominantly of two seams containing more than 80% polyhalite, called the Shelf Seam and the Basin Seam respectively. The Development Plan proposed by the Company is focussed on the mining of the Shelf Seam only although there is potential to exploit the Basin Seam as well.

The plant is designed for an initial capacity of 10 Mtpa of ore, producing up to 9.5 Mtpa of granulated product at steady state with the balance as coarse product (although it should be noted that the valuation presented later in this report conservatively assumes only 8 Mtpa of granulated product).

### **3 MINING TITLE AND LAW**

SRK has not reviewed the rights of the Company to mine from a legal perspective and has relied on advice by the Company to the effect that the Company will be entitled to mine all material reported here and that all necessary statutory mining authorisations and permits are being put in place. SRK's review has rather been restricted to confirming that the stated Mineral Resources and Ore Reserves in this document are within the Area of Interest (AOI) and understanding the technical work required to be done by the Company to maintain the rights and so ensure that these requirements are satisfied by the Company's Development Plan.

### **4 POLYHALITE MARKET**

In the UK, the only known resource of onshore polyhalite is found along a relatively small distance of coastline (approximately 140 km in extent) in North Yorkshire. Further, the only current producer of polyhalite in the world is the Boulby Potash Mine (Boulby) operated by Cleveland Potash Limited (CPL), in turn owned by Israel Chemicals Limited (ICL), which is immediately to the north of the Project and where the workings are now largely off-shore.

Given that the Project will produce a relatively new type of product, Sirius commissioned CRU Strategies Ltd (CRU) to conduct a series of independent market studies to assess the value of, and global demand for, the product and its overall price competitiveness. Alongside this, Sirius also established a global agronomy programme as part of its marketing plan including crop trials to prove the performance of the granulated product it envisages producing (which it has termed POLY4) as a fertilizer relative to other more established potassium-containing fertilizers and to help assess the product's full agronomic functionality.

The agronomy testwork concluded that POLY4 can be used as a direct source of four essential plant nutrients and beneficial micro-nutrients and that it can also be combined with other fertilizers as a feedstock, creating commonly used fertilizer blends while supplying additional macro-nutrients and beneficial micro-nutrients to support the needs of crops.

The CRU report which was produced in 2016 provides an overview of the global demand for primary fertilizer products which concluded that the estimated total demand in polyhalite equivalent is estimated to be 440 Mt in 2025. The proposed 10 Mt of annual production from the Project will therefore relate to approximately 2.3% of the total nutrient demand of these primary fertilizer products.

In summary, Sirius considers the value of the polyhalite product will be based on its value as a multi-nutrient fertilizer product and certainly tests completed to date have demonstrated its effectiveness as a direct multi-nutrient fertilizer and as a valuable blending component. Further, Sirius has negotiated a number of offtake agreements which SRK has reviewed and which SRK considers have been appropriately reflected in the Sirius Financial Model (Sirius FM). The production offtake and commodity price assumptions presented in this report are unchanged from those reflected in SRK's August 2016 CPR.

## **5 GEOLOGY**

### **5.1 Regional Geological Setting**

Geologically, the deposit planned to be mined by Sirius is located within the Cleveland sedimentary basin and specifically within the Permian Zechstein Group which consists predominantly of evaporitic rocks (halite, anhydrite and, notably, the polyhalite mineralisation) with lesser siltstone, mudstone and carbonate units which were deposited in a large inland depression that covered parts of what is now Germany, Poland, Denmark, the Netherlands and the United Kingdom some 260 million years ago. The basin was a long-lived feature, with evaporite deposition spanning 5 to 6 million years. The deposition of the evaporites is generally considered to be a result of periodic marine transgressions into the basin, caused by a combination of sea level change and crustal subsidence, followed by sealing of the basin and subsequent evaporation of seawater and deposition of evaporitic sediments.

This cyclical process of basin flooding and evaporation produced four major evaporite cycles (termed Z1 to Z4, with Z1 being the basal unit) and several locally developed, minor evaporitic cycles (termed Z5-Z7). In the Project area, the Z1 to Z4 cycles are referred to as:

- the Don Group (Z1);
- the Aislaby Group (Z2);
- the Teesside Group (Z3); and
- the Staintondale Group (Z4)

Most of the original evaporitic sediments have undergone subsequent alteration. The most common alterations are from limestone to dolomite, gypsum to anhydrite and anhydrite to polyhalite, all of which are syn-sedimentary or diagenetic alteration processes. In some locations there have also been subsequent reversals of the gypsum to anhydrite.

### **5.2 Local Geology**

The polyhalite mineralisation is hosted within the Fordon evaporite, which is part of the Aislaby Group (Z2). Within undeformed parts of the AOI, the Fordon evaporites have an average thickness of approximately 210 m.

Two polyhalite seams have been identified by drilling to date and these have been termed the Shelf polyhalite seam (the "Shelf Seam") and the Basin polyhalite seam (the "Basin Seam"). Both are stratiform shallow dipping bodies and occur at a specific position within the stratigraphic column.

The Shelf Seam, which is the target of the DFS, occurs near the top of the Fordon evaporite and is typically bounded by intergrown halite-anhydrite-polyhalite beneath and anhydrite above. It has been intercepted in a number of drillholes throughout the central and western parts of the Project area and varies in thickness from a few metres to over 40m being typically thickest in the northern and central parts of the Project area and thinner to the west and south.

### 5.3 Structural setting

Structurally, the Project occurs along the southwest edge of the North Sea basin, in an area that has undergone a number of deformation events since the Precambrian and a number of faults have been observed within the Sirius AOI. Most of these faults are inferred to have formed during the Mesozoic in a locally transtensional environment and the majority have apparent normal displacements. There is, however, also evidence that a number of these faults either formed as, or were reactivated as, reverse faults during late Cretaceous-Tertiary contraction. Sub-vertical strike slip faults have also been interpreted from the seismic data, however, due to the nature of seismic data the amount of strike slip movement cannot be quantified.

Three dominant fault orientations have been observed within and immediately adjacent to the resource area: NNW striking, WNW striking and ENE striking. Additional fault orientations cannot, however, be ruled out due to the difficulty of correlating a number of lower displacement faults between seismic sections.

### 5.4 SRK Comments

While it is clear that the thickness of the target seams vary from location to location and also over relatively short (tens of metre) distances, the Shelf Seam in particular has been intersected in all of the drillholes completed in the vicinity of the planned shafts and appears to be a continuous shallow dipping horizon amenable to the room and pillar mining method envisaged.

## 6 EXPLORATION

The AOI has a long history of exploration activity but prior to the work done by Sirius this was largely focussed on exploring for other resources, notably oil and gas and potash. Some of the data collected however has been obtained and compiled by Sirius and its consultants and has to varying extents been used to help produce the Mineral Resource and Ore Reserve estimates presented in this CPR.

Sirius's drilling programme was designed primarily to infill the areas between the historical boreholes throughout the whole AOI, in the expectation that this would yield an improved geological model from which to identify the best place for the follow-up drilling needed to delineate a Mineral Resource.

All the Sirius drillholes were completed between 2011 and 2013 and were drilled using a combination of open holed methods and a PQ sized diamond drill bit to core through the lithologies of interest. All holes were drilled by PR Marriot Ltd (Marriot) and a combination of Marriot rigs were used with open hole and diamond coring capabilities. Once drilling was completed, a gyrodata survey was carried out and the holes were logged by Schlumberger for

natural gamma, density, sonic, neutron, calliper, temperature and ultrasonic borehole imaging, using wireline logging methods. All drillhole collars were surveyed using industry best practice standards using GPS equipment accurate to within  $\pm 50$  mm. Core recovery was typically very good, specifically in the polyhalite seams.

The Sirius drill programme included a number of parent and daughter (deflection) holes. The parent holes are typically spaced, between approximately 1.1 and 1.8 km with the largest distance being 5.7 km. The polyhalite intersections in the deflections are typically between 30 and 60 m from that in the parent hole.

In producing its Mineral Resource estimate presented later in this report, SRK has primarily relied upon the data collected during the Sirius drilling campaign although this was supported by the historical data where this could be verified. SRK has, therefore, reviewed the drilling, logging, sampling and assaying procedures employed during this time and completed a number of validation checks itself on the raw data available and checked the QAQC results returned from the assay laboratory. In SRK's opinion, this data is sufficient in terms of quantity and quality to support the Mineral Resource estimate as presented below.

## **7 MINERAL RESOURCES AND ORE RESERVES**

In producing its Mineral Resource Estimate, SRK has produced a geological model of the polyhalite seams using simple triangulated surfaces reflecting an approximate 80% polyhalite cut-off and completed a statistical and geostatistical analysis to investigate the grade continuity within these and to derive parameters for grade interpolation. This analysis did not reveal any clear directional trends or anisotropy in the data for the grade values, and therefore an omni-directional experimental variogram was created and used to interpolate polyhalite grade into a 50m by 50m by 3m block model.

Ordinary Kriging (OK) was used for the grade (polyhalite content) interpolation for both seams. Grade was then interpolated into the block model honouring the geological contacts defined by the geological modelling process. No other parameters were modelled.

The Mineral Resource and Ore Reserve statements derived by SRK and presented in this CPR have been reported in accordance with the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves as published by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (the JORC Code).

SRK has assigned portions of the Sirius Mineral Resource into the Indicated and Inferred categories as defined by the JORC Code taking into account the quality and quantity of data used in the estimation; the geological knowledge and understanding, focusing on geological and grade continuity at the 80% cut-off grade used; the quality of the geostatistics and interpolated block model; and SRK's experience with other deposits of similar style.

The SRK Classified Mineral Resource Statement is shown in Table ES 1 below.

**Table ES 1: SRK Mineral Resource Statement**

Seam	Resource Category	Mean Thickness (m)	Tonnage (Mt)	Density	Mean Polyhalite Grade (%)	Polyhalite Content (Mt)
Shelf	Indicated	27	820	<b>2.75</b>	87.3	710
Shelf	Inferred	11	840	<b>2.75</b>	85.7	720
Basin	Inferred	26	1,000	<b>2.75</b>	84.7	850
<b>All</b>	<b>Total</b>		<b>2,660</b>	<b>2.75</b>	<b>85.7</b>	<b>2,280</b>

As with its Mineral Resource statement, SRK's Ore Reserve statement has been reported using the terminology and guidelines proposed in the JORC Code. Specifically, it comprises the tonnage of mineralisation reported above as an Indicated Mineral Resource which is planned to be mined, as reported in the following section of this CPR, and then transported to Teesside and is presented inclusive of losses and dilution incurred during mining and includes the mineralisation in the shaft pillar and that would be mined on final retreat from the mining areas. Notably, this is a sub-set of the Indicated Mineral Resource presented above and not additive to this.

The JORC Code only allows the reporting of Probable Reserves from Mineral Resources classed as Indicated regardless of whether or not the completed work is at a Pre-Feasibility Study or Feasibility Study level and therefore in this case the entire Ore Reserve has been classed as Probable.

SRK's Ore Reserve Statement for the Project is presented in Table ES 2 below. The economic viability of exploiting this has been confirmed by the DFS and also by the valuation presented later in this report. Notably, this remains the case if the financial analysis is based on the mining of this Ore Reserve only; that is, making the assumption that no further Inferred Mineral Resources will be upgraded to Indicated status and assuming no further Mineral Resources are delineated.

**Table ES 2: SRK Ore Reserve Statement**

Seam	Reserve Category	Mean Thickness (m)	Tonnage (Mt)	Density	Mean Polyhalite Grade (%)	Polyhalite Content (Mt)
Shelf	Probable	25	280.2	<b>2.75</b>	88.4	247.7

The large difference between SRK's Mineral Resource statement and its Ore Reserve statement is partly a function of the relatively low mining recovery inherent in the mining method employed and partly a function of the fact that SRK has limited the Ore Reserve statement to the Indicated Mineral Resource and therefore the Shelf Seam only.

SRK considers that there is a good likelihood that a proportion of the currently reported Inferred Mineral Resource will be upgraded to the Indicated Mineral Resource and Ore Reserve status once the mine has been established and the polyhalite horizons have been accessed and that additional Mineral Resources and Ore Reserves will be generated

following ongoing exploration and assessment during the mine life.

## 8 MINING

Sirius plans to access the polyhalite via two vertical mine shafts and to mine polyhalite at rates of 10 Mtpa. Sirius also plans to design and partially equip the mine such that mining rates of up to 20 Mtpa are achievable with additional capital investment.

The polyhalite will be extracted by mechanical means using a room and pillar layout, and by drill and blast stoping methods where the polyhalite seam is thickest.

The mined polyhalite will be transported by belt conveyors from production zones to loading stations at the -1,520 m Level before being loaded into skips and hoisted some 1,160 m in the Production Shaft. Skips will discharge onto conveyors on -360 m Level with mineral then transported in the Mineral Transport System (MTS). Belt conveyors will transport polyhalite to the processing plant and materials handling facility located at Teesside where it will be granulated and stored before sale and shipping.

The engineering designs and production plans developed for the operation reflect the expected long mine life in excess of 50 years, and also accommodate a variability of factors that might be found. At 10 Mtpa, the mine plan schedules the mining of wholly Indicated Mineral Resources for about the first 18 years, then at a make-up of around 35%:65% Indicated and Inferred Mineral Resource material respectively for a further 20 years. After this the schedule is wholly sourced by Inferred Mineral Resource material for the last 11 years of the assumed mine life presented in this report.

The inaccessibility of the orebody, and relative inexperience the industry has of mining polyhalite means a variety of design parameters are not fully known. The data used and assumptions made are based on the best knowledge available to date, but it is expected that changes/optimisation will occur as orebody knowledge increases. SRK considers that the necessary engineering solutions to mechanical excavation technology will be made and any unforeseen challenges will be overcome in time and accordingly the mine ramp up is phased over a period of two years. The opportunity exists to improve this should any potential challenges be overcome sooner.

In addition to the cutting equipment, a number of control methodologies are required to cut at the planned rate and SRK considers that appropriate engineering design, equipment monitoring and control systems, communication infrastructure and maintenance programmes for fixed and mobile plant are being planned for. Successful implementation of these aspects by an underground workforce established with appropriate job planning and training, provided with communications systems, work planning and management of the operation is required. The DFS articulates a reasonable approach in this area and appropriate allocations of time and budget are made.

The mine will have a hot working environment. The Heat Stress Management Programme and monitoring of environmental conditions underground will be essential to ensure mine worker safety and to maintaining productivity.

The close spaced parent and daughter boreholes indicate that there could be variation in the cuttability, grade distribution, seam thickness, and seam continuity over mining scale but there has not yet been an opportunity to study this in detail. It is standard practice however in mines such as this, that once the shaft bottom development is in place there will be a much greater understanding of the geometry of the mineralisation at a mining scale and this, supported by the planned drilling from underground development, will facilitate optimisation of the detailed mine plan.

In summary, SRK believes the mining methods envisaged, and equipment selected, to be appropriate for the orebody and the mining schedule as presented in this report to be achievable and supported by the available data.

## **9 MINERAL PROCESSING**

Processing of the polyhalite ore will be undertaken at the Material Handling Facility (“MHF”) located at Wilton, Teesside and will consist of grinding the material received from the underground conveyor (Material Transport System, or MTS) followed by granulating of the ground material into the final physical form for despatch / sale. The ore will not be subjected to any beneficiation or upgrading. A small portion of the coarse material will also be extracted from the comminution circuit and stockpiled for sale after crushing and screening.

The plant is designed for an initial capacity of 10 Mtpa of ore, producing 0.5 Mtpa of raw product and 9.5 Mtpa of granulated product. The facility has been sized to allow for the potential doubling of the production capacity.

An 800 t/d Temporary Processing Facility (TPF) will be installed to process polyhalite ore that is mined as the shafts and MTS tunnel are being constructed. The flowsheet for the TPF will be the same as for the full scale plant, and it will use one of the granulation and drying modules from the plant (the plant will contain 10 such modules) preceded by a mobile crushing plant.

In SRK’s opinion the testwork completed to date in combination with additional testwork now underway and that still planned to be done will provide a sound basis for finalising the process design and ensuring this is optimised in terms of both producing the required product quality and optimising the capital and operating costs.

## **10 PROJECT INFRASTRUCTURE**

The Project requires extensive infrastructure to support the mining and export operations, which include the welfare and support facilities at the Doves Nest mine/shaft site, the MTS, the MHF at Sembcorp’s Wilton site and the conveying and bulk terminal port facility planned for Bran Sands, Teesside.

Site access at the Doves Nest site is via A-roads which under the planning requirements



require improvements to facilitate construction and operation. This process has commenced and road improvements are underway. Improvements are also needed at the intermediate shaft site for the MTS development. The MHF (at Wilton) and proposed bulk terminal port facility are currently accessed from existing regional infrastructure links which do not require improvements.

The MTS will connect the mine site at Dove's Nest to the MHF at Wilton and has been designed by Arup, Worley Parsons, Joy and KHI. It comprises a 37 km long tunnel with a minimum internal diameter of 4.3 m which provides an infrastructure corridor between the mining production shaft at 360 m Level and the MHF.

The Wilton site is located adjacent to the A174 and 3 km south of the quay-side of the bulk terminal facility. The MHF will be constructed on a parcel of land within the boundary of the Wilton site which is cleared and levelled. Structures have been designed to house the processing, product storage, reclaim, and conveying equipment. There are also various ancillary facilities (workshop, stores, change-house, office, etc) to support the process facility, utilities supply and distribution and the general supporting civils, bulk earthworks and surface water management.

A benefit of the Wilton site is that it is readily available land, is close to existing road and rail infrastructure and has readily available utilities supply from SembCorp, who SRK understands has overcapacity arising from significant decommissioning on the Wilton Complex in the recent past. The proposed ancillary facilities appear sufficient to support the MHF's requirements.

The port area starts at the point where the overland conveyor exits the MHF at Wilton and extends to where the berthing facility will be located at Bran Sands on the eastern side of the Tees Estuary, immediately upriver from the former Redcar Steelworks site. Sirius has obtained a development consent order for the overland conveyor "northern route".

The Phase 1 berth is to be located at the northern end of the river frontage and will be constructed first. Phase 2 will replicate Phase 1 with an extension to the southern end of the river frontage.

In summary, SRK considers the infrastructure in place and planned to be sufficient to support the operation as envisaged in this report.

## **11 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND PERMITTING**

SRK is of the opinion that Sirius has undertaken a significant amount of work to assess the environmental and social risks to the Project and the management of these. Notably, Sirius has already obtained planning permission for all Project components and is now implementing a programme to manage compliance with the associated planning conditions.

In addition to planning conditions, planning agreements have been entered into by Sirius and determining authorities. These include obligations to make substantial payments to offset potential impacts. The cost implications are in the order of USD 40M during the first 10 years of the development and USD 2M for each year of operation thereafter. Furthermore, Sirius has set up the York Potash Foundation and intends to allocate 0.5% of gross revenue from

the Project to local community programmes. All these costs are included in the Sirius FM discussed later in this report.

A number of secondary permits will be required such as the environmental permit, water discharge permits, land drainage consent, spoil management permit/s, ecological licences and hazardous waste producer registration. Delays in obtaining these permits and discharging planning conditions could delay progress with construction and operation of the Project and so it will be important for Sirius to monitor this and to take proactive action if required.

## 12 VALUATION

The valuation and underlying assumptions that feed into this are unchanged from that presented in SRK's August 2016 CPR.

SRK has reviewed the assumptions in the Sirius FM which is presented in nominal terms on a quarterly basis and re-presented all analyses in this report in real USD terms on an annual basis. The focus of the review is the Phase 1 production capacity of 10 Mtpa, however, it is acknowledged that Sirius has developed additional production capacity scenarios of 13 Mtpa (Phase 2a) and 20 Mtpa (Phase 2b).

The mine plan extends to 2100 assuming the total currently available Indicated and Inferred Mineral Resources can be mined, however, for the purposes of the Sirius FM as presented in this report, the mine plan has been restricted to 2071 or some 50 years of production.

Sirius has negotiated a number of offtake agreements and has included the volume and pricing assumptions for these in the Sirius FM. Both granulated and coarse product sales via offtake agreements are assumed up to 2032, after which all sales are assumed to be on the open market. In reality, in the early years, any uncontracted volumes will be either committed under new offtake agreements on consistent terms or sold on the open market. For granulated product sales between 2022 and 2032, up to some 2.9 Mtpa of the total granulated sales of 7.9 Mtpa is assumed to be sold via offtake agreements. For coarse produce sales, one offtake assumption is currently included which accounts for up to a maximum of 0.5 Mtpa between 2024 and 2030 out of total coarse product sales of 1.95 Mtpa.

The Sirius FM assumes a real terms price (FOB Teesside) of between USD130-160/t from 2021 to 2028, following which prices are assumed to rise in real terms and ultimately reaching approximately USD180/t for coarse product and USD220-230/t for granulated product. It is noted that these price ranges are due to a combination of price increases over time due to Sirius's planned marketing strategy and price differentials for product to different regions. Granulated product is assumed to attract a premium over coarse product of 7.5% although a greater disparity is evident in the weighted average price due to product volumes allocated to different regions which results in a larger price difference overall.

Sirius has assumed that the spot prices in the first five years are consistent with the offtake agreements and which represent around a 30% discount to the inherent nutrient value of the product (assumed to be USD221/t). Prices are then assumed to increase in real terms

following the offtake period and once global demand for POLY4 product is established.

The capital costs used for the Sirius FM reflect those developed for the DFS except where updated subsequent to this to reflect the appointment of the preferred shaft sinking contractor. SRK has reviewed these costs and considers these reasonable given the work completed to date and information available and notes that Sirius has retained the full contingency allowance developed for the DFS in its capital cost assumptions despite the reduced overall cost which provides additional comfort that the Project can be constructed within the revised budget.

Mine operating costs have been derived from first principals and are based on the mining schedule developed by SRK. Labour costs were derived as part of a mine wide labour study provided by Hargreaves Mining Services. Joy has provided the equipment maintenance costs which are incorporated as part of the mining costs. Other equipment costs are based on budget pricing and are obtained directly from suppliers. WPRSA provided the operating costs for the fixed infrastructure in the shafts and shaft bottom area and these have been incorporated by Bechtel into the mine cost model. WPRSA has used benchmark numbers and these seem reasonable. For this level of study, the operating cost assumptions seem reasonable and appropriate.

SRK has used the Sirius FM to derive a real terms, post-tax pre-finance net present value (NPV) (8% discount rate) with a base date of 1 January 2016 of USD6,807M and an internal rate of return (IRR) of 20.3%. Cashflows are assumed to be incurred at the end of each year. Payback (when cumulative project cashflow becomes positive) occurs in 2026, Year 11. Table ES 3 summarises the NPV of the Project at varying discount rates. Various downside sensitivities have also been run which demonstrate the robustness of the Project. In SRK's opinion the NPVs presented in this report at the discount rates given reflect the information currently available and appropriately convey the valuation of the Project as it stands.

**Table ES 3: Project NPV at varying Discount Rates**

Discount Rate	NPV (USD'M)
6%	11,045
<b>8%</b>	<b>6,807</b>
10%	4,263
12%	2,660

## 13 DESIGN/CONSTRUCTION STATUS

Since completion of the DFS and funding was obtained, the work of the Company has been largely focussed on the discharge of planning conditions, mine site preparation and in negotiations with land owners, the main contractors and the development of the work schedule and budget for 2017 which envisages an expenditure of some GBP269M. The forecast is higher than was forecast at the time of funding – the vast majority of the difference

being in the AMC Mine Site Development scope which has been brought forward and accelerated. Other increases are the result of engineering work on the other parts of the project that will need reasonably detailed estimates prior to Stage 2 funding. The overall construction budget however remains as assumed by the financial model presented above.

Certainly, in SRK's opinion, the work envisaged is justified and the budgets allowed for this seem reasonable given the specific work planned.

In addition, as already commented in this report, other technical aspects of the Project are also being reviewed, notably in relation to mine planning and process testwork and plant design, though the current plans remain as envisaged in SRK's August 2016 CPR. Notably, the Company still intends to produce polyhalite from 2021 and SRK considers this expectation to be reasonable.

## 14 RISKS AND OPPORTUNITIES

### 14.1 Risks

#### *Mineral Resources/Ore Reserves*

- Given the depth of the orebody below surface and the consequent cost of drilling, Sirius has focussed its exploration on proving up the continuity of sufficient mineralisation to support the operation as currently proposed to a degree of confidence required to enable the reporting of Indicated Mineral Resources and Probable Ore Reserves. While both SRK and Sirius consider this is sufficient to demonstrate the presence of polyhalite in a mineable form, both accept that further exploration will be required from underground development once this is in place to better define the orebody geometry and the location and impact of faults prior to mining.

This will enable the reporting of the Mineral Resource and Ore Reserve in the higher categories of Measured and Proven respectively and ensure that mining is optimally carried out. This work will result in the detailed mining layouts as presented here being reviewed on an ongoing basis throughout the mine life and will have consequent impacts on mining productivity and production.

#### *Mining*

- There remains a risk that the cuttability of the polyhalite is not quite as anticipated resulting in reduced cutting rate and/ or higher pick consumption and machine wear lowering productivity.
- In final engineering and detailed planning and scheduling of the shaft and subsurface/ shaft bottom infrastructure construction, which is planned for the detailed engineering phase, interaction of multiple works packets in relatively confined areas may identify unanticipated schedule delay and Project/ cost overruns.
- As a consequence of the amount of drilling completed to date, geotechnical and hydrogeological conditions may not be as predicted. Revision of the planned mining methods and layouts may be required with improved orebody knowledge once the planned pilot hole SM14B and its deflections have been drilled, and on an ongoing basis

as drilling is undertaken from underground development.

#### *Mineral Processing*

- The testwork planned to be undertaken during the detailed design phases may result in changes to the design of the proposed plant and or size of equipment within this.

#### *Infrastructure/Services*

- The detailed design work for the MTS tunnel might lead to design changes inclusive of increases to the tunnel diameter.
- The geotechnical / ground engineering surveys yet to be carried out at the port may reveal that the dredged slope between the lagoon embankment and the dredged pocket requires ground improvement works.

## **14.2 Opportunities**

#### *Mineral Resources/Ore Reserves*

- As commented above, Sirius has focussed its exploration on proving up the continuity of sufficient polyhalite mineralisation to support the operation as currently proposed. As a result the polyhalite deposit explored by Sirius, which is clearly extensive, remains open in most directions and there is a likelihood that the mine will continue to mine much longer, or at an increased rate, than currently envisaged by the 50 year mine plan presented in this CPR.

Notably, in this regard Sirius has designed the mine and surface infrastructure such that it can be expanded if deemed appropriate to support an increased production rate of up to 20 Mtpa and while this option has not been designed to the level of the plans to mine at 10 Mtpa, plans are already in place to cater for this eventuality.

Clearly if realised this could have a significant positive impact on the valuation as presented in this CPR.

In addition to the above, there is also the potential for the mine to exploit halite and also sylvinite, both of which will be intersected by the proposed shaft and Sirius has indicated its intention to investigate the potential for this as the mine is developed. While not the specific focus of this report it should be noted in this regard that FWS has derived an Inferred Mineral Resource as defined by the JORC Code of some 550 million tonnes of halite all of which has potential to be accessed from the underground infrastructure planned to be put in place at the Project. Further, while there is insufficient geological data at present to define a Mineral Resource for the sylvinite, an Exploration Target, as defined by the JORC Code, of between 180 and 300 million tonnes of this material has also been outlined by FWS. While it is uncertain if further exploration will result in the estimation of a sylvinite Mineral Resource, such exploration is planned to be completed underground once production of POLY4 has commenced. SRK has also reviewed both of these estimates and considers these to be reasonable based on the data currently available.

#### *Mining*

- Once the polyhalite horizon is accessed and orebody knowledge increases through exploration and in-fill drilling, better definition of grade and extents of mineralisation may

provide potential to increase head grade and/ or improved tonnage profiles.

- A highly productive mining system will be employed utilising equipment monitoring and maintenance systems necessary to achieve planned production. This presents an opportunity to incorporate processes that will support lower operating costs and improved productivity.
- The recent trials conducted using Joy equipment cutting polyhalite with the existing 12HM36 machine confirm the output rates can be achieved and there is the potential for increased output from the planned use of the more powerful 12HM46 machine.
- The mine environment will be monitored and controlled using controlled partial re-circulation and refrigeration to ensure that operating conditions are effectively managed to support high production rates and to minimise ventilation costs.

#### *Infrastructure/Services*

- There is some potential to utilise existing (unused) port facilities, which currently lie dormant, and which may reduce capital costs and/or port outsourcing charges.

## **15 RECOMMENDATIONS**

In SRK's opinion, the Project described here is a project of merit which justifies being progressed to the construction phase.

Notwithstanding this, SRK has made various recommendations for further work which is required to enable the project to be optimally developed and the Company has integrated these recommendations into its work plans for the next two years (2017 and 2018).

## **16 CONCLUDING REMARKS**

In summary, this report describes a significant Project which will involve the construction of a large amount of infrastructure to be realised, but which has potential to become a major polyhalite producer for a long period of time.

While further design work needs to be done to ensure the Project is constructed in an appropriate manner and as optimally as possible, SRK considers that the work undertaken to date has been completed to a high standard, the capital and operating costs to be based on detailed assessments carried out by suitably qualified and experienced consultants and contractors and the revenues to be based on an achievable production profile and price assumptions produced following a detailed assessment of demand for the product.

The NPV and IRR for the Project presented in this report demonstrates the value of the Project and this has potential to be enhanced further particularly given the potential for the Mineral Resource and Ore Reserve to be increased following ongoing exploration and assessment and also the for the production rate to be increased from 10 Mtpa to 20 Mtpa.

The observations, comments and conclusions presented in this report represent SRK's opinion as of 1 March 2017 and are based on a review of documentation provided by the Company and to some extent discussions with the Company.

SRK requires to be able to approve any extract from this report which may be presented in any public domain literature or which is used for the purposes of financing or presentation to third parties.

# Table of Contents

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Background.....	1
1.2	Verification, Validation and Reliance .....	2
1.3	Limitations, Reliance on Information, Declarations, Consent and Copyright .....	2
1.3.1	Limitations .....	3
1.3.2	Reliance on Information .....	3
1.3.3	Declarations .....	3
1.3.4	Consent and Copyright.....	3
1.4	Statement of Qualification.....	4
1.5	Report Format.....	5
<b>2</b>	<b>ASSET SUMMARY .....</b>	<b>5</b>
<b>3</b>	<b>LOCATION .....</b>	<b>6</b>
3.1	Introduction .....	6
3.2	Accessibility .....	8
3.3	Climate.....	8
3.4	Physiography .....	8
<b>4</b>	<b>MINING TITLE AND LAW .....</b>	<b>9</b>
4.1	Background.....	9
4.2	Mining Rights in the United Kingdom .....	9
4.2.1	Overview .....	9
4.2.2	Sirius Agreements .....	9
<b>5</b>	<b>OVERVIEW OF THE POLYHALITE INDUSTRY AND MARKET .....</b>	<b>10</b>
5.1	Polyhalite Occurrence.....	10
5.2	Market.....	10
5.2.1	Introduction.....	10
5.2.2	Product Quality .....	11
5.2.3	CRU Polyhalite Market Study, Pricing and Marketing Strategy .....	12
<b>6</b>	<b>GEOLOGY.....</b>	<b>14</b>
6.1	Regional Geological Setting .....	14
6.2	The Zechstein Group .....	17
6.3	Local Geology .....	17
6.4	Mineralisation.....	19
6.5	Structural Geology .....	20
6.5.1	Regional Structure.....	20
6.5.2	Local Structure .....	21
6.6	SRK Comments .....	22
<b>7</b>	<b>HISTORY .....</b>	<b>22</b>



7.1	Background .....	22
7.2	Historical Exploration .....	23
7.3	Sirius Exploration .....	25
7.3.1	Background .....	25
7.3.2	Sirius Strategy .....	25
7.3.3	Sirius Drilling .....	26
7.3.4	Sirius Logging and Sampling Procedures .....	30
7.3.5	Sample Preparation .....	31
7.3.6	Laboratory Analysis .....	31
7.3.7	Quality Assurance and Quality Control (QAQC) .....	31
7.3.8	Density Determinations .....	34
7.4	SRK Comments .....	34
<b>8</b>	<b>MINERAL RESOURCES AND ORE RESERVES .....</b>	<b>34</b>
8.1	Introduction .....	34
8.2	Data Manipulation and Validation .....	34
8.3	Polyhalite Seam Modelling .....	35
8.4	Classical Statistical Study .....	35
8.4.1	Polyhalite Content .....	35
8.4.2	Compositing .....	36
8.5	Polyhalite Content Geostatistical Study .....	36
8.5.1	Introduction .....	36
8.5.2	Variography .....	36
8.6	Block Model Grade and Interpolation .....	37
8.6.1	Block Model Set-Up .....	37
8.6.2	Grade Interpolation .....	37
8.7	Model Validation .....	38
8.7.1	Introduction .....	38
8.7.2	Visual Validation .....	39
8.7.3	Statistical Validation .....	39
8.8	Mineral Resource Classification .....	40
8.8.1	Classification Code and Definitions .....	40
8.8.2	Sirius Classification .....	41
8.9	Mineral Resource Statement .....	43
8.10	Ore Reserves .....	44
<b>9</b>	<b>MINING .....</b>	<b>45</b>
9.1	Introduction .....	45
9.2	Access .....	46
9.2.1	Introduction .....	46
9.2.2	Shaft Arrangements .....	47

9.2.3	Shaft Facilities .....	47
9.2.4	Approach to Shaft Sinking .....	50
9.2.5	Shaft equipping .....	52
9.2.6	Shaft Geotechnics .....	54
9.2.7	Shaft Hydrology .....	56
	<i>Estimation of Groundwater Inflow .....</i>	<i>60</i>
9.3	Mine Design .....	61
9.3.1	Introduction .....	61
9.3.2	Approach to Mining .....	62
9.3.3	Roadway and pillar design .....	63
9.3.4	Extraction Lifts .....	64
9.4	Mining Geotechnics .....	65
9.4.1	Introduction .....	65
9.4.2	Mining Geotechnical Characteristics .....	65
9.4.3	Major Structures .....	66
9.4.4	Orebody Geometry and Continuity .....	67
9.4.5	Geotechnical Design Parameters .....	67
9.4.6	Subsidence Potential .....	68
9.5	Mine Hydrology .....	69
9.5.1	Introduction .....	69
9.5.2	Site Investigation .....	70
9.5.3	Estimation of Groundwater Inflow .....	71
9.5.4	SRK Comments .....	71
9.6	Mine Ventilation .....	71
9.6.1	Introduction .....	71
9.6.2	Design approach .....	72
9.6.3	Heat Management Strategy .....	72
9.6.4	Controlled Partial Recirculation and Refrigeration .....	73
9.7	Mining Schedule .....	74
9.7.1	Introduction .....	74
9.7.2	Shaft Sinking .....	74
9.7.3	Construction and Ramp Up .....	74
9.7.4	Development Schedule .....	76
9.7.5	Production Schedule .....	76
9.8	Mining Equipment .....	82
9.8.1	Introduction .....	82
9.8.2	Cuttability of Polyhalite .....	82
9.8.3	Fleet Requirements .....	83
9.8.4	Mineral handling .....	83

9.9 Productivity .....	84
9.9.1 Equipment Productivity.....	84
9.9.2 Mine Operations .....	84
9.10 SRK Comments .....	85
<b>10 MINERAL PROCESSING.....</b>	<b>87</b>
10.1 Introduction .....	87
10.2 Processing Strategy.....	87
10.2.1 MHF Description.....	87
10.2.2 Supporting Testwork .....	88
10.2.3 Ongoing/Planned Testwork.....	89
10.3 SRK Comments .....	90
<b>11 PROJECT INFRASTRUCTURE.....</b>	<b>92</b>
11.1 Scope of Review .....	92
11.2 Project Access .....	92
11.3 Project Services.....	92
11.3.1 Power Supply .....	92
11.3.2 Water Supply Strategy and Surface Water Management.....	92
11.3.3 Other.....	93
11.3.4 SRK Comments.....	93
11.4 Mine Site Infrastructure (Doves Nest) .....	93
11.5 Mineral Transport System.....	95
11.5.1 Summary .....	95
11.5.2 Geotechnics .....	95
11.5.3 Tunnel Design .....	96
11.5.4 Hydrogeology .....	96
11.5.5 Infrastructure .....	97
11.5.6 SRK Comments.....	98
11.6 Materials Handling Facility.....	99
11.6.1 Introduction.....	99
11.6.2 MHF Design .....	99
11.6.3 SRK Comments.....	100
11.7 Bulk Terminal Facility (Port).....	100
11.7.1 Description .....	100
11.7.2 Construction Schedule .....	103
11.7.3 SRK Comments.....	103
<b>12 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND PERMITTING.....</b>	<b>105</b>
12.1 Scope of review .....	105
12.2 Project setting .....	106
12.2.1 Introduction.....	106

12.2.2	Mine head.....	106
12.2.3	MTS.....	107
12.2.4	MHF.....	108
12.2.5	Port.....	108
12.3	Environmental and social approvals.....	109
12.3.1	Background .....	109
12.3.2	Planning permission .....	110
12.3.3	Secondary permits .....	113
12.4	Approach to environmental and social management .....	114
12.5	Stakeholder engagement.....	114
12.5.1	Introduction.....	114
12.5.2	Engagement activities .....	115
12.5.3	Issues raised .....	116
12.5.4	Corporate social responsibility .....	116
12.6	Technical environmental and social matters .....	116
12.7	Closure requirements and costs .....	118
12.8	Risks .....	119
12.9	SRK Comments .....	119
<b>13</b>	<b>VALUATION.....</b>	<b>120</b>
13.1	Introduction .....	120
13.2	Production.....	121
13.3	Revenue.....	122
13.3.1	Sales Volumes .....	122
13.3.2	Pricing.....	123
13.4	Capital Costs .....	125
13.4.1	Project Capital .....	125
13.4.2	Sustaining Capital .....	126
13.4.3	Outsourced Capital.....	127
13.4.4	SRK Comments.....	127
13.5	Operating Costs.....	128
13.5.1	Direct Operating Costs .....	128
13.5.2	Other Assumptions.....	130
13.5.3	Total Project Operating Costs .....	132
13.5.4	SRK Comments.....	133
13.6	Economic Evaluation .....	135
13.7	Sensitivity Analysis .....	136
13.7.1	Sensitivities assessed .....	136
13.7.2	Prices, Operating Costs, Capital Costs.....	137
13.7.3	Construction Delay .....	138

13.7.4	No Outsourced Capital.....	138
13.7.5	Inferred Mineral Resources.....	138
13.7.6	Exchange Rate.....	138
<b>14</b>	<b>DESIGN/CONSTRUCTION STATUS.....</b>	<b>139</b>
14.1	Introduction.....	139
14.2	Land Purchases.....	139
14.3	Planned Work for 2017.....	139
14.4	Current Status.....	140
14.5	Budget.....	141
14.6	SRK Comments.....	141
<b>15</b>	<b>RISKS AND OPPORTUNITIES.....</b>	<b>142</b>
15.1	Introduction.....	142
15.2	Risks.....	142
15.3	Opportunities.....	143
<b>16</b>	<b>RECOMMENDATIONS.....</b>	<b>144</b>
<b>17</b>	<b>CONCLUDING REMARKS.....</b>	<b>144</b>

## LIST OF TABLES

Table 1-1:	SRK Project Team.....	4
Table 5-1:	Typical POLY4 Composition (90% Polyhalite).....	11
Table 7-1:	Summary of Sirius's 2011 - 2013 exploration drill programme .....	28
Table 7-2:	Comparison of Shelf Seam Thickness (based on an 80% cut-off grade) between parent and daughter holes .....	28
Table 8-1:	Data available for coding the Shelf and Basin polyhalite seams .....	35
Table 8-2:	Raw summary statistics.....	36
Table 8-3:	Comparison of raw and capped, composite statistics .....	36
Table 8-4:	Normalised variogram parameters used .....	37
Table 8-5:	Search parameters used during OK estimation for the Shelf Seam .....	38
Table 8-6:	Search parameters used during OK estimation for the Basin Seam .....	38
Table 8-7:	Statistical validation of declustered sample statistics versus estimated block model statistics.....	39
Table 8-8:	SRK Mineral Resource Statement .....	43
Table 8-9:	SRK Ore Reserve Statement .....	45
Table 9-1:	Thickness of orebody in geotechnical drillholes.....	67
Table 9-2:	Room and Pillar Dimensions .....	68
Table 9-3:	Underground Support Requirements .....	68
Table 9-4:	Life of Mine Production Schedule by District.....	77
Table 9-5:	Distribution of Daily Polyhalite Grade for Selected Years .....	82
Table 12-1:	Status of planning applications for the Project .....	110
Table 12-2:	Section 106 Agreements associated with planning permissions .....	112
Table 13-1:	Currency Exchange Rate Assumptions.....	121
Table 13-2:	Project Construction Capital Costs.....	125
Table 13-3:	Capital Funding Requirement.....	126
Table 13-4:	LoM Direct Operating Costs .....	129
Table 13-5:	Direct Operating Costs during Ramp Up.....	130
Table 13-6:	Total Project All in Operating Costs .....	132
Table 13-7:	Project NPV at varying Discount Rates.....	135
Table 13-8:	LoM Cashflow.....	135
Table 13-9:	Project Sensitivity to Price, Operating Cost and Capital Cost.....	137
Table 13-10:	Resource Sensitivity .....	138
Table 14-1:	2017 Budget Summary.....	141

## List of Figures

Figure 2-1:	Project Location.....	5
Figure 3-1:	Location of Project, and the associated AOI (indicated by the red line) .....	7
Figure 5-1:	Polyhalite Contestable Markets (Source: Sirius DFS).....	11
Figure 5-2:	Implied Nutrient Value Projected in 2025, USD/t (Source: Sirius DFS).....	12
Figure 5-3:	Illustrative Polyhalite Penetration and Pricing Development (Source: Sirius DFS) ....	13
Figure 6-1:	Regional geology map of the Cleveland Basin and surrounding areas .....	15
Figure 6-2:	Regional stratigraphic column for the Cleveland Basin area .....	16
Figure 6-3:	Typical stratigraphic column through the Fordon evaporite within the Sirius resource area. ....	19
Figure 6-4:	Typical example of polyhalite from drillhole SM3a: banding is most visible in the top right of the figure, while the polyhalite in the bottom left is more massive. ....	20
Figure 7-1:	Location of all historical drillholes located within the Sirius AOI .....	24
Figure 7-2:	Example of a parent hole (SM7) and associated daughter holes (SM7A, and SM7B)27	
Figure 7-3:	Location Map showing all holes used to derive SRK's MRE .....	29
Figure 7-4:	BGS High Quality Control Multi-Element Standard.....	32
Figure 7-5:	BGS Low Quality Control Multi-Element Standard.....	33
Figure 7-6:	Results of the BGS laboratory duplicate analyses .....	33
Figure 8-1:	Omni-directional modelled variogram.....	37
Figure 8-2:	Visual validation of the block model against drillhole data .....	39
Figure 8-3:	Area of Indicated (Blue line) and Inferred (Red lines) category resources for the shelf and basin seams of the Project (the pink line indicates the current AOI) .....	43
Figure 8-4:	Grade-Tonnage Curve for combined Shelf and Basin Indicated and Inferred Mineral Resource .....	44
Figure 9-1:	General Surface Arrangements.....	48
Figure 9-2:	360 Level General Arrangements .....	49
Figure 9-3:	General Mine District Layout in Area of Indicated Resources .....	63
Figure 9-4:	Illustration of Extraction Lifts .....	64
Figure 9-5:	Location of RAF Fylingdales in Relation to the Project.....	69
Figure 9-6:	Production Build Up Showing Implementation of Major Facilities (Sirius) .....	75
Figure 9-7:	Shaft Bottom Layout.....	76
Figure 9-8:	LoM Production Schedule .....	79
Figure 9-9:	Life of Mine Production by Ore Classification .....	80
Figure 9-10:	Variation of Annual Mine Grade Over 50 years .....	81
Figure 11-1:	Example of drainage arrangement for Doves Nest (source: DFS, 25900-000-G65-GAM-01200_Rev0.docx page 12/7).....	94
Figure 11-2:	General Layout (ref. extract from Drg.No. 25900-RHD-JOY-4000-53001, DFS) ....	101
Figure 11-3:	Phase 1 Dredging plan also showing the berth construction outline in grey (ref. Drg. Nos. 25900-RHD-S00-4500-52100 Rev B & -52150 Rev A) .....	102
Figure 11-4:	Phase 1 Dredging section also showing the berth construction outline in grey (ref. Drg. Nos. 25900-RHD-S00-4500-52100 Rev B & -52150 Rev A) .....	102
Figure 13-1:	Mine Plan.....	122
Figure 13-2:	Product Sales by Product Type.....	123
Figure 13-3:	Product Prices .....	124
Figure 13-4:	Gross Revenue.....	124
Figure 13-5:	Project Development Capital (excluding outsourced capita) spend (2016 to 2026) .	126
Figure 13-6:	Project LoM Direct Operating Costs (USD'M).....	129
Figure 13-7:	Project LoM Direct Unit Operating Costs (USD/t) .....	130
Figure 13-8:	Project LoM All in Operating Costs (USD'M) .....	133
Figure 13-9:	Project LoM All in Unit Operating Costs (USD/t).....	133
Figure 13-10:	Project LoM Annual Cashflow (USD'M) .....	136
Figure 13-11:	Project LoM Cumulative Casfflow (USD'M) .....	136
Figure 13-12:	Project Sensitivity to Price, Operating Cost and Capital Cost.....	137

# COMPETENT PERSONS REPORT ON THE MINERAL RESOURCES AND ORE RESERVES OF SIRIUS MINERALS IN THE UK

## 1 INTRODUCTION

### 1.1 Background

SRK Consulting (UK) Limited (SRK) has been requested by Sirius Minerals Plc (Sirius or the Company), a fertiliser development company, to prepare a Competent Persons Report (CPR) on its 100% owned North Yorkshire Polyhalite Project (the Project) on which Bechtel Limited (Bechtel) compiled a Definitive Feasibility Study (DFS) in 2016. SRK understands that the CPR is to be included in a prospectus for an international offering of securities of the Company.

The DFS envisages the development of a vertical shaft to access and mine a polyhalite orebody and the construction of associated surface infrastructure, inclusive of a tunnel to convey the mined ore to Teesside, and materials handling and project specific port facilities.

This CPR has been structured on a technical discipline basis into sections on geology, Mineral Resources and Ore Reserves, mining engineering/design, mineral handling and processing, infrastructure and environmental and social management. The report also contains sections commenting upon Mining Licence aspects, the polyhalite market in general and the historical development of the Project and also summarises the Technical-Economic Parameters (TEPs) upon which the reported Ore Reserve is based and presents a Net Present Value (NPV) valuation based on this.

The Mineral Resource and Ore Reserve statements included in this CPR are reported in accordance with the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves as published by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (the JORC Code (2012)).

Since the completion of the DFS, Sirius has updated its capital cost forecast and development schedule for the Project to reflect: a revised implementation strategy, in which Sirius itself will manage its contractors rather than involve a project management contractor; certain capital updates based on a review of spares requirements and some scope revisions; and also a capital cost estimate and construction schedule developed by the now selected preferred shaft contractor, Associated Mining Construction UK (AMC), a joint venture between the Thyssen Group and the Redpath Group. This CPR reflects SRK's view of the Project as presented in the DFS, but inclusive of the changes resulting from this more recent work.

SRK has previously produced a CPR for Sirius which presented its views as at August 2016



Registered Address: 21 Gold Tops, City and County of Newport, NP20 4PG,  
Wales, United Kingdom.  
SRK Consulting (UK) Limited Reg No 01575403 (England and Wales)

Group Offices: Africa  
Asia  
Australia  
Europe  
North America  
South America



and this updated CPR therefore includes comments on work completed by the Company since this time which largely comprises the planning, scheduling and commencement of the final design work needed to be done inclusive of the drilling of a final drillhole (SM14B) collared at the production shaft site. Given, however, that no material technical work has been completed since August 2016 and therefore no changes have been made to the construction schedule or mine plan, the valuation presented here remains as presented at that time.

## 1.2 Verification, Validation and Reliance

This CPR is dependent upon technical, financial and legal input from the Company. Notably, the technical information as provided to, and taken in good faith by, SRK, has not been independently verified by means of re-calculation. SRK has however:

- Conducted a review and assessment of all material technical issues likely to influence the future performance of the Project, and therefore the stated Mineral Resource and Ore Reserve, which included:
  - inspection visits to the proposed mining, materials handling and port sites in January 2016;
  - meetings and discussions with Company management and staff;
  - a review of the DFS and supporting documents; and
  - a review of reports produced post the DFS detailing the work completed since this time.
- Accepted macro-economic parameters and commodity prices provided by the Company and relied on these as inputs into the verification of the Company's Ore Reserves and projected cash flows.
- Satisfied itself that such information is both appropriate and valid as reported herein.

SRK considers that with respect to all material technical-economic matters, it has undertaken all necessary investigations to ensure compliance with the JORC Code.

It should also be noted that SRK authored the Geology, Mineral Resource and Mine Planning sections of the DFS itself and so in these areas SRK directly generated the technical information presented in this CPR, while in other technical areas this report reflects SRK's review of information generated and/or technical work completed by others as input to the DFS and post this. As a result of this, the projections and forecasts presented here may not directly reflect that presented in the DFS or in public announcements made by the Company since this was completed as they also incorporate judgements made by SRK not necessarily incorporated into the DFS or the Company's assessments.

## 1.3 Limitations, Reliance on Information, Declarations, Consent and

## **Copyright**

### **1.3.1 Limitations**

The Company has agreed that, to the extent permitted by law, it will indemnify SRK and its employees and officers in respect of any liability suffered or incurred as a result of or in connection with the preparation of this report albeit that this indemnity will not apply in respect of any material negligence, wilful misconduct or breach of law. The Company has also agreed to indemnify SRK and its employees and officers for time incurred and any costs in relation to any inquiry or proceeding initiated by any person except to the extent SRK or its employees and officers have been materially negligent or acted with wilful misconduct or in breach of law in which case SRK shall bear such costs.

The Company has confirmed in writing to SRK that to its knowledge the information provided by the Company was complete and not incorrect or misleading in any material aspect. SRK has no reason to believe that any material facts have been withheld and the Company has confirmed to SRK that it believes it has provided all material information.

The achievability of the Development Plan, budgets and forecasts presented here are neither warranted nor guaranteed by SRK. The forecasts as presented and discussed herein have been proposed by the Company's management and adjusted where appropriate by SRK to reflect its opinion but cannot be assured. Notably, for example, they are necessarily based on economic and market assumptions, many of which are beyond the control of the Company and SRK.

### **1.3.2 Reliance on Information**

SRK's opinions given in this document are effective at 1 March 2017 and are based on information provided by the Company throughout the course of SRK's investigations, which in turn reflects various technical-economic conditions prevailing at the date of this report and the company's expectations regarding the polyhalite market, polyhalite prices and exchange rates as at the date of this report. These and the underlying TEPs can change significantly over relatively short periods of time.

### **1.3.3 Declarations**

SRK will receive a fee for the preparation of this CPR in accordance with normal professional consulting practice. This fee is not contingent on the outcome of any transaction and SRK will receive no other benefit for the preparation of this report. SRK does not have any pecuniary or other interests that could reasonably be regarded as capable of affecting its ability to provide an unbiased opinion in relation to the Company's Mineral Resources and Ore Reserves.

SRK does not have, at the date of this report, and has not ever had, any shareholding in or other relationship with the Company or the Project and consequently considers itself to be independent of the Company.

### **1.3.4 Consent and Copyright**

SRK consents to the issuing of this report in the form and context in which it is to be included in the preliminary and final prospectuses for an international offering of securities of the Company.

Neither the whole nor any part of this report nor any reference thereto may be included in any other document without the prior written consent of SRK regarding the form and context in which it appears.

Copyright of all text and other matters in this document, including the manner of presentation, is the exclusive property of SRK. It is a criminal offence to publish this document or any part of the document under a different cover, or to reproduce and/or use, without written consent, any technical procedure and/or technique contained in this document. The intellectual property reflected in the contents resides with SRK and shall not be used for any activity that does not involve SRK, without the written consent of SRK.

## 1.4 Statement of Qualification

SRK is part of an international group (the SRK Group), which comprises some 1,400 professional staff offering expertise in a wide range of resource and engineering disciplines. The SRK Group's independence is ensured by the fact that it holds no equity in any project. This permits the SRK Group to provide its clients with conflict-free and objective recommendations on crucial judgment issues. The SRK Group has a demonstrated track record in undertaking independent assessments of resources and reserves, project evaluations and audits, CPR and independent feasibility studies on behalf of exploration and mining companies and financial institutions worldwide. The SRK Group has also worked with a large number of major international mining companies and their projects, providing mining industry consultancy service inputs.

This CPR has been prepared by a team of consultants sourced from the SRK Group's office in the UK over a four month period. These consultants are specialists in the fields of geology, resource and reserve estimation and reporting, underground mining, rock engineering, polyhalite processing, hydrogeology and hydrology, tailings management, infrastructure, environmental management and mineral economics.

The individuals listed in Table 1-1 have provided the material input to this CPR, have extensive experience in the mining industry and are members in good standing of appropriate professional institutions.

**Table 1-1: SRK Project Team**

Name	Position	Responsibility
Mike Armitage	Corporate Consultant	Project Director/Technical Review/Geology & Resources
Nick Fox	Principal Consultant	Economic Model
Tim McGurk	Corporate Consultant	Mining
Dave Forman	Senior Consultant	Mining
Allan McCracken	Corporate Consultant	Geotechnics
William Harding	Principal Consultant	Hydrogeology
John Willis	Principal Consultant	Mineral Processing
Colin Chapman	Senior Consultant	Infrastructure
Emily Harris	Senior Consultant	Environmental Management and Planning

The Competent Person who has supervised the production of this CPR is Dr Mike Armitage, who is the Chairman of the SRK Group. Dr Armitage is a mining geologist with over 30 years' experience in the mining industry and has been responsible for the reporting of Mineral Resources and Ore Reserves on various properties internationally during the past 25 years.

## 1.5 Report Format

The following sections of this report cover each of the technical disciplines reviewed and, for each, summarise the key conclusions of SRK's review. This report does not repeat all of the information or assumptions in the DFS and should be read in conjunction with this.

## 2 ASSET SUMMARY

The DFS for the Project has been compiled by Bechtel and was completed in March 2016. Phase 1 of the Project as envisaged in this comprises the development of two vertical shafts to access a polyhalite deposit and the mining of this at an initial rate of up to 10 million tonnes per annum (Mtpa) for transport to Teesside by underground conveyor for onward distribution to customers by ship. There is also potential for the mining rate to be further increased to 13Mtpa and then 20 Mtpa and the infrastructure is being developed with this in mind. Notwithstanding this, it is the lower rate of 10Mtpa that the Development Plan and Ore Reserve presented in this report are based upon.

Figure 2-1 shows the location of the Mine Head at Doves Nest, near Whitby, the materials handling facility at Wilton International Site (Wilton) and the port at Bran Sands, both of which are immediately to the northeast of Middlesbrough near the mouth of the River Tees.



**Figure 2-1: Project Location**

The orebody planned to be mined by the Company comprises a polyhalite mineral deposit which is stratigraphically located within the Zechstein Group in the North Sea Basin and consists predominantly of two seams containing more than 80% polyhalite, called the Shelf Seam and the Basin Seam respectively. The Development Plan proposed by the Company is focussed on the mining of the Shelf Seam only although there is potential to exploit the Basin Seam as well.

The plant is designed for an initial capacity of 10 Mtpa of ore, producing up to 9.5 Mtpa of granulated product at steady state with the balance as coarse product (although it should be noted that the valuation presented later in this report conservatively assumes only 8 Mtpa of granulated product).

### **3 LOCATION**

#### **3.1 Introduction**

As commented above, the planned mine site is located in North Yorkshire, on the east coast of the United Kingdom, between the towns of Whitby (which has approximately 14,000 inhabitants) and Scarborough (which has approximately 50,000 inhabitants).

The polyhalite mineralisation extends between Whitby and Scarborough and also under portions of the North York Moors National Park (NYMNP) and offshore, while the Area of Interest (AOI) currently being explored by Sirius covers approximately 800 km<sup>2</sup> and borders the ICL UK mining licence to the north (Figure 3-1).



Figure 3-1: Location of Project, and the associated AOI (indicated by the red line)

### 3.2 Accessibility

The Project is easily accessible via existing roads (A170, A171, A172 and A19) which run through and around the NYMNP. While the roads within the NYMNP are of variable quality and are not suited for heavy vehicle traffic, the roads around the NYMNP link the Project area to York and Leeds and are of a good condition. Rail lines are also situated near to the Project area and they provide connections to other UK rail services. Freight rail lines are present at Seal Sands, Tees Dock, Wilton and Lazenby. Ports are located at Teesside, Newcastle, Whitby, and Hull/Immingham. Bulk wharves already exist on the River Tees. The nearest airports to the Project area are Newcastle, Durham Tees Valley and Leeds Bradford. Leeds is the largest city within Yorkshire and is located approximately 120 km from the Project area.

### 3.3 Climate

Northeast England is characterised by a temperate climate. Mean annual temperatures vary depending on altitude and proximity to the coast. The local Yorkshire climate is also strongly influenced by:

- the high-altitude Pennine mountain range to the west which causes a cool, dull and wet environment and provides shelter from the westerly winds; and
- the North Sea to the east which keeps conditions relatively cool in the summer along coastal areas;

The annual climate can be summarised as follows:

- January is typically the coldest month; mean daily temperatures during this month vary from below -0.5°C to about 1.5°C;
- July and August are the warmest months, with mean daily maximum temperatures ranging from about 21°C in South Yorkshire to less than 16°C in the higher Pennines;
- sunshine hours are dependent on day length with the shortest days occurring in the winter months; and
- rain occurs at an average of 1,000 mm per year in the NYMNP.

### 3.4 Physiography

The majority of the onshore portion of the AOI lies within the NYMNP, which is characterised by marshy heath land, grassland, and coastal vegetation. Heath land vegetation is comprised of bilberry, crowberry and wavy hair grass with bog plants, bracken and rarely juniper, dwarf cornel, bog rosemary and cloudberry. The moors are inhabited by various bird species including merlin (*Falco columbarius*), golden plover (*Pluvialis apricarius*), red grouse (*Lagopus lagopus scoticus*), curlew (*Numenius arquata*), lapwing (*Vanellus vanellus*), ring ouzel (*Turdus torquatus*) and reptiles such as adder (*Vipera berus*). Chickweed, poppies and field speedwell as well as scarce species like night-flowering catchfly, bugloss and cornsalad grow on arable lands. The coastal fauna and flora are also diverse and includes species such as yellow-flowered kidney vetch and wild cabbage. There are a number of water courses and rivers within the park environment and these are inhabited by a range of species including otters, water vole, white clawed crayfish, brown trout, sea trout, salmon and freshwater pearl-mussels.

## **4 MINING TITLE AND LAW**

### **4.1 Background**

SRK has not reviewed the rights of the Company to mine from a legal perspective. Consequently, SRK has relied on advice by the Company to the effect that the Company will be entitled to mine all material reported here and that all necessary statutory mining authorisations and permits are being put in place. SRK's review has rather been restricted to confirming that the stated Mineral Resources and Ore Reserves in this document are within the AOI and understanding the technical work required to be done by the Company to maintain the rights and so ensure that these requirements are satisfied by the Company's Development Plan.

The comments in this section of the report refer to the mining rights only. Details relating to relevant environmental permits are included in Section 12 of this report.

### **4.2 Mining Rights in the United Kingdom**

#### **4.2.1 Overview**

Mineral rights permits for hydrocarbons, gold and silver in the United Kingdom belong to the British government. All other mineral rights, however, are typically owned by the freehold surface owner unless a previous owner excluded the mineral rights from a subsequent sale of the land. These rights extend from the surface, or just below, to the centre of the Earth. All offshore mineral rights are held by the Crown. Information regarding who owns mineral rights is held by the Land Registry together with information about who owns the respective land. In order to extract minerals, a mining company is required to gain an option agreement from the mineral rights owner. In addition, to commence a mining operation, planning permission is also required to be obtained from the local mineral planning authority.

#### **4.2.2 Sirius Agreements**

Sirius has entered into option agreements with the respective landowners and is using a standardised agreement for the majority of landowners which negotiates a payment of royalties at 2.5% of gross revenue from the material extracted and sold from within each landowners land parcel. The 445 option agreements signed to date cover approximately 95% of the AOI and approximately 89% of the Indicated Mineral Resource presented in this report and negotiations are on-going for the remainder. The majority of these, 436, have now been converted into long-term leases while the remainder are subject to ongoing discussion.

The Company has also established a community foundation, funded by a revenue royalty (0.5% of gross revenue). The foundation will be a life of mine commitment and will fund a range of community projects in the area of interest and beyond. The Foundation's remit shall cover education, skills, health, community facilities, tourism and other charity based projects that contribute to the general well-being of the area of interest and beyond.



## 5 OVERVIEW OF THE POLYHALITE INDUSTRY AND MARKET

### 5.1 Polyhalite Occurrence

Potash is a potassium (K) bearing evaporite, or salt, which along with other salts, the most common of which are gypsum, anhydrite, carnallite and halite, forms almost exclusively within partly or fully restricted marine basins which have been subjected to high rates of evaporation. The key to the deposition of the salts and the formation of the resulting salt beds is that the rate of evaporation of the sea water must exceed the rate at which the basin is replenished by new sea water. Most potash deposits are therefore thought to have formed in hot arid humid environments and indeed, most Quaternary and Recent deposits occur between 15° and 35° latitude in equatorial elevated plateaus, arctic deserts, and rain shadows of high mountain ranges and continental regions.

As a result, Potash is typically found in relatively thin, often gently-folded beds, associated with carbonates, calcium sulphate, halite and magnesium sulphates. While potash deposits are found throughout the geological column, by far the majority of the deposits currently exploited, including those planned to be mined by the Company, are of Palaeozoic age.

The most common potash ore minerals are sylvinite (KCl+NaCl), carnallite (KCl·MgCl·6H<sub>2</sub>O) and sylvite (KCl) and it is these minerals that are the target for most potash mines. Polyhalite, on the other hand, is a common, but typically minor, constituent of many ancient evaporite sequences and polyhalite deposits have now been identified in a number of ancient evaporitic sedimentary sequences throughout the world, including: Carlsbad, New Mexico; Hallstatt, Austria; Galicia, Poland; Stassfurt, Germany and parts of the Middle East.

Compositionally, polyhalite is a hydrated potassium, calcium and magnesium sulphate salt with the chemical formula K<sub>2</sub>SO<sub>4</sub>·MgSO<sub>4</sub>·2CaSO<sub>4</sub>·2H<sub>2</sub>O which is generally thought to form as an alteration mineral during diagenesis or low grade regional metamorphism. It has a hardness of between 2.5 and 3.5 on the Moh's scale and a specific gravity of approximately 2.8 g/cm<sup>3</sup>.

In the UK, the only known resource of onshore polyhalite is found along a relatively small distance of coastline (approximately 140 km in extent) in North Yorkshire and the only current producer of polyhalite in the world is the Boulby Potash Mine (Boulby) operated by Cleveland Potash Limited (CPL), in turn owned by Israel Chemicals Limited (ICL), which is immediately to the north of the Project and where the workings are now largely off-shore.

### 5.2 Market

#### 5.2.1 Introduction

Sirius commissioned CRU Strategies Ltd (CRU) in 2016 to conduct a series of comprehensive independent market studies to assess the value of its polyhalite, the global demand for the product and its overall price competitiveness solely on a substitution basis without considering the product performance. Sirius also established a global agronomy programme as part of its marketing plan including crop trials to prove the performance of the granulated product it envisages producing (which it has termed POLY4) as a fertilizer relative to other more established potassium-containing fertilizers and to help assess the product's full agronomic functionality. The market assumptions made for the purpose of the financial model presented in the feasibility study and this CPR are based on the finding of the CRU report.

## 5.2.2 Product Quality

The typical composition of the POLY4 product anticipated to be produced by the Project is summarised in Table 5-1.

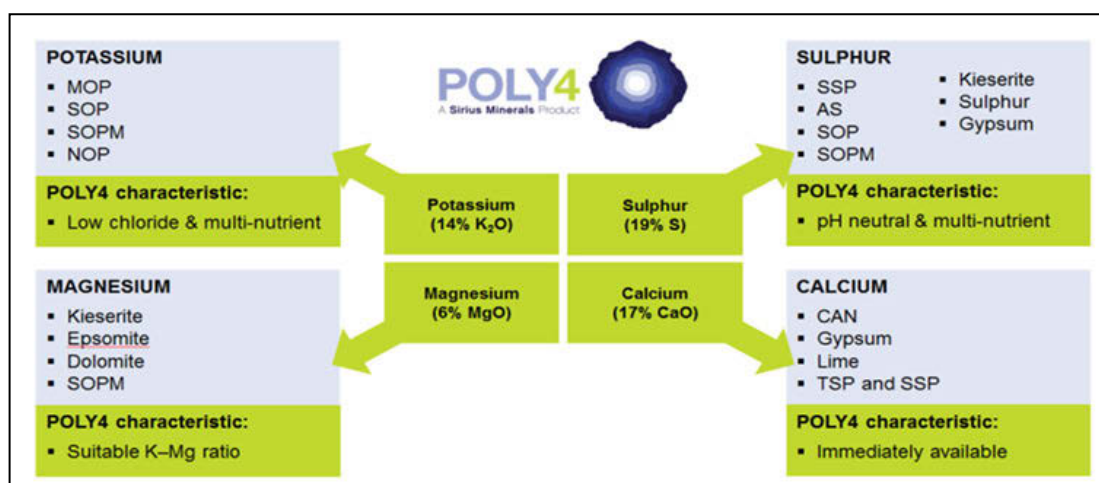
**Table 5-1: Typical POLY4 Composition (90% Polyhalite)**

Component	Units	Typical Quantity
Potassium	K <sub>2</sub> O%	14.06
Sulphur	SO <sub>3</sub> %	47.80
Magnesium	MgO%	6.02
Calcium	CaO%	16.74
Magnesite	MgCO <sub>3</sub> %	3.0
Anhydrite	CaSO <sub>4</sub> %	3.34
Halite	NaCl%	3.07
Boron	B ppm	300
Mean particle size	Mm	3.0
Range	Mm	2.0 – 4.0
Moisture	% w/w	<1.0%

The agronomy testwork concluded that POLY4 is an essentially chloride-free fertilizer and that it is a soluble multi-nutrient fertilizer suitable for soil application at all application rates. All nutrients are rapidly transferred to the soil's available nutrient pool soon after application. Additionally, POLY4 is pH neutral, so it has no effect on the soil pH levels and has no negative effect on soil conductivity at commercial application rates.

Notably, the tests undertaken have confirmed that POLY4 can be used as a direct source of four essential plant nutrients and beneficial micro-nutrients and that it can also be combined with other fertilizers as a feedstock, creating commonly used fertilizer blends while supplying additional macro-nutrients and beneficial micro-nutrients to support the needs of crops.

As a multi-nutrient fertilizer, POLY4 provides substitution opportunities, as well as meeting currently unmet market demand, as shown in Figure 5-1. The defined characteristics listed in the figure enable the product to have an interface in many different markets.

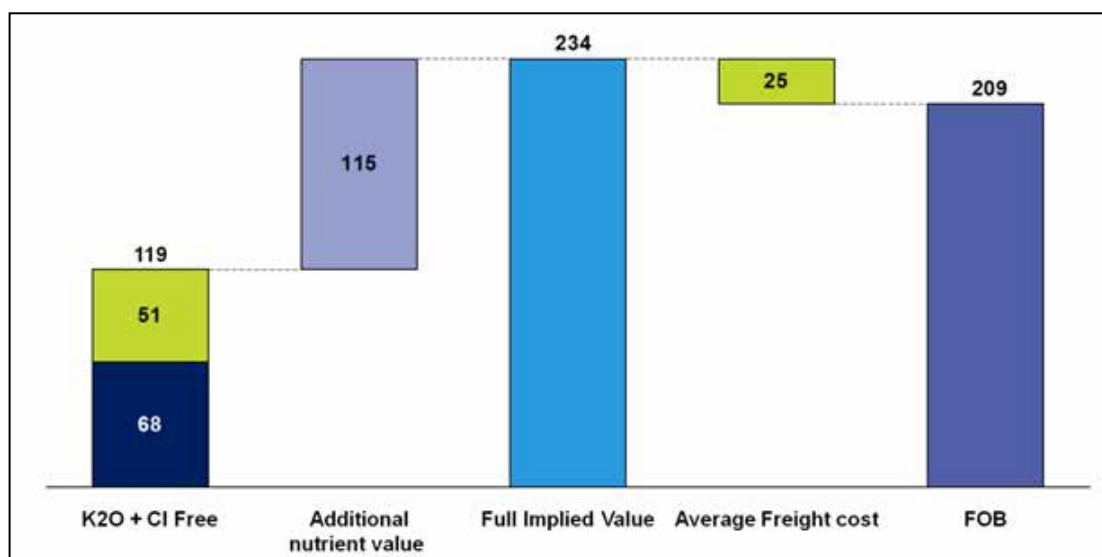


**Figure 5-1: Polyhalite Contestable Markets (Source: Sirius DFS)**

### 5.2.3 CRU Polyhalite Market Study, Pricing and Marketing Strategy

Initially, CRU was commissioned to provide an independent assessment of the global potential market for polyhalite. This study produced a polyhalite demand window taking into account the impact of production volumes, freight costs to target markets, fertilizer application costs and the response of competitor fertilizer suppliers in order to develop a demand curve for polyhalite.

CRU took a technical approach, based on the intrinsic value of polyhalite from a nutrient perspective, and applied economic theory to estimate the range of market demand at different prices using detailed forecasted market pricing data (Figure 5-2). Inherent in the calculations made by CRU is the premise that consumers make rational decisions based upon the value of the polyhalite to their particular need.



**Figure 5-2: Implied Nutrient Value Projected in 2025, USD/t (Source: Sirius DFS)**

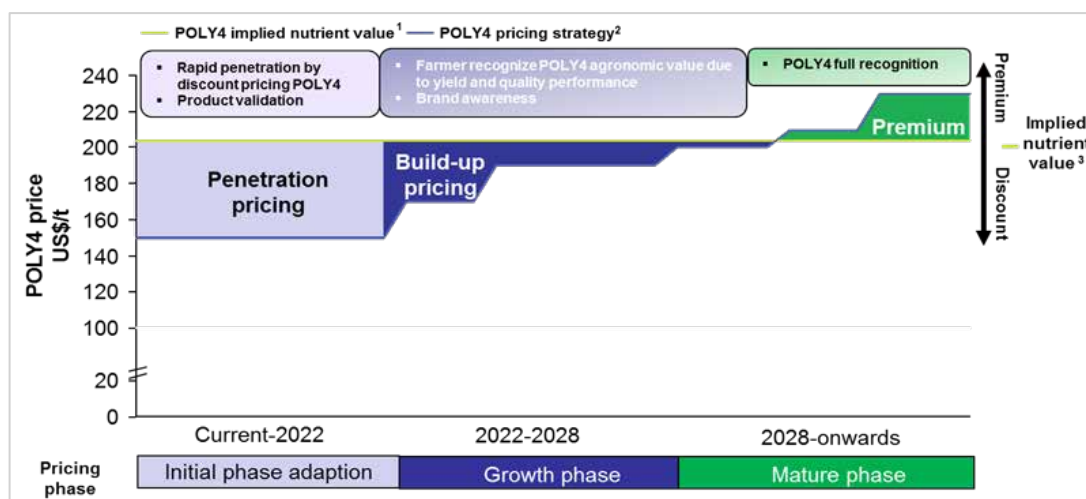
While polyhalite is a relatively new mineral to the market and is currently not sold on a large scale, it is important to note that the value of all nutrient components of the polyhalite minerals is well understood by the fertilizer industry and farmers. CPL has recently begun a process to develop sales of this material under the name: Polysulphate™ and it is understood its sales in the past couple of years, including deliveries to its own NPK (Nitrogen, Phosphorus and Potassium) fertilizer factories, have amounted to some 100 kt/a (Argus FMB World Potash Outlook to 2029). It is also important to note that the Polysulphate product is a coarse product and not the premium granulated product Sirius intends to sell.

There is recognition of the value of chloride-free K<sub>2</sub>O, which is seen in the price differentiation between Muriate of Potash (MOP) and Sulphate of Potash (SOP). Polyhalite therefore has the potential to be cost effective, with the added benefit of containing chloride free K<sub>2</sub>O, providing a high value in use opportunity.

Sirius will continue to develop its marketing and sales strategy through construction and into production of POLY4 and related products. The multi-channel sales strategy devised for POLY4 is intended to place the product in the bulk nutrient, premium straight and value added markets for fertilizers. The product penetration routes developed for POLY4 follow this same overarching strategy and target its use for:

- **Substituting existing products.** The multi-nutrient characteristics of POLY4 allow it to become a cost-effective substitute to customers' existing supply of potassium, sulphur, magnesium and calcium.
- **The unmet regional demand.** Polyhalite unlocks the opportunity to serve an unmet chloride-free demand created by the current tight supply.
- **NPK blending.** As a multi-nutrient feedstock, polyhalite has the potential to reduce the number of fertilizer inputs, improve the nutrient content and reduce the blending cost of NPK.

Sirius has established a pricing development strategy for its POLY4 product (see Figure 5-3). This assumes that both in the pre-construction phase and throughout construction, it will be necessary to go through a period of penetration pricing during which customers will pay less than the nutrient value in order to encourage them to sign offtake agreements, and also to offer them an attractive opportunity that provides them with good margins on the product. As the Project moves from construction to production, the strategy then assumes that product acceptance will have started to become a reality and it will then be possible to continue to build up the pricing to nutrient value and above. Further details on the specific prices assumed in the Sirius Financial Model (Sirius FM) can be found in Chapter 13 of this report.



**Figure 5-3: Illustrative Polyhalite Penetration and Pricing Development (Source: Sirius DFS)**

The geographical spread of POLY4 sales will be influenced by multiple factors and Sirius has assumed it can penetrate key marketing regions including Europe, North America, Latin America, Brazil, Africa, India, SE Asia and China. It is noted that Sirius has to date successfully established sales commitments through offtake agreements for up to some 3.6Mtpa of product in the early years of the operation to companies based in China, North America and Latin America. Further details on the specific prices to these regions assumed by the Sirius FM can be found in Chapter 13 of this report.

Based on the CRU report, which provides an overview of the global demand for primary fertilizer products, the estimated total demand in polyhalite equivalent is estimated to be 440 Mt in 2025. The proposed 10 Mt of annual production from the Project will therefore relate to approximately 2.3% of the total nutrient demand of these primary fertilizer products. An important value component within polyhalite, as recognised by CRU, is the nutrient potassium. It should be noted that it is unlikely that polyhalite will obtain an equal market share in each of the six primary products identified in the market study. For example, the intrinsic value of polyhalite is greater when competing with chloride-free potash products (SOP/SOP-M) than when competing with potassium chloride (MOP), and as a result it is to be expected that polyhalite would capture a greater share of the SOP and SOP-M markets.

In summary, Sirius considers the value of the polyhalite product will be based on its value as a multi-nutrient fertilizer product and certainly tests completed to date have demonstrated its effectiveness as a direct multi-nutrient fertilizer and as a valuable blending component.

## 6 GEOLOGY

### 6.1 Regional Geological Setting

The deposit planned to be mined by Sirius is located within the Cleveland sedimentary basin, a sub-basin along the south-western margin of the North Sea Basin (Figure 6-1). Figure 6-2 illustrates the detailed stratigraphy of the area; however, this can be simplified into the following four major subdivisions:

- A pre-Permian basement, which is believed to consist of a continuation of the London-Brabant massif and overlying Devonian and Carboniferous sediments, underlies the area (Stewart&Coward 1995). The upper contact of the Carboniferous sediments represents a major regional unconformity associated with Variscan uplift.
- The Permian Zechstein Group overlies the basement. This consists predominantly of evaporitic rocks (halite, anhydrite and, notably, the polyhalite mineralisation) with lesser siltstone, mudstone and carbonate units. This unit is consistently more than 500 m thick in the Project area, but thins to the west as the basin margin is approached and thickens towards the east. In the centre of the North Sea basin the Zechstein Group is over 1,000 m thick.
- A sequence of Mesozoic sediments overlies the Zechstein Group. This is comprised largely of sandstone, mudstone, siltstone, shale and lesser dolomite and limestone and includes the approximately 275 m thick Sherwood Sandstone, which is a major regional aquifer. The upper contact of this sequence represents a significant unconformity.
- A surficial veneer of Cenozoic glacial till overlies the Mesozoic sediments. The thickness of the glacial till varies significantly depending on the surface topography.

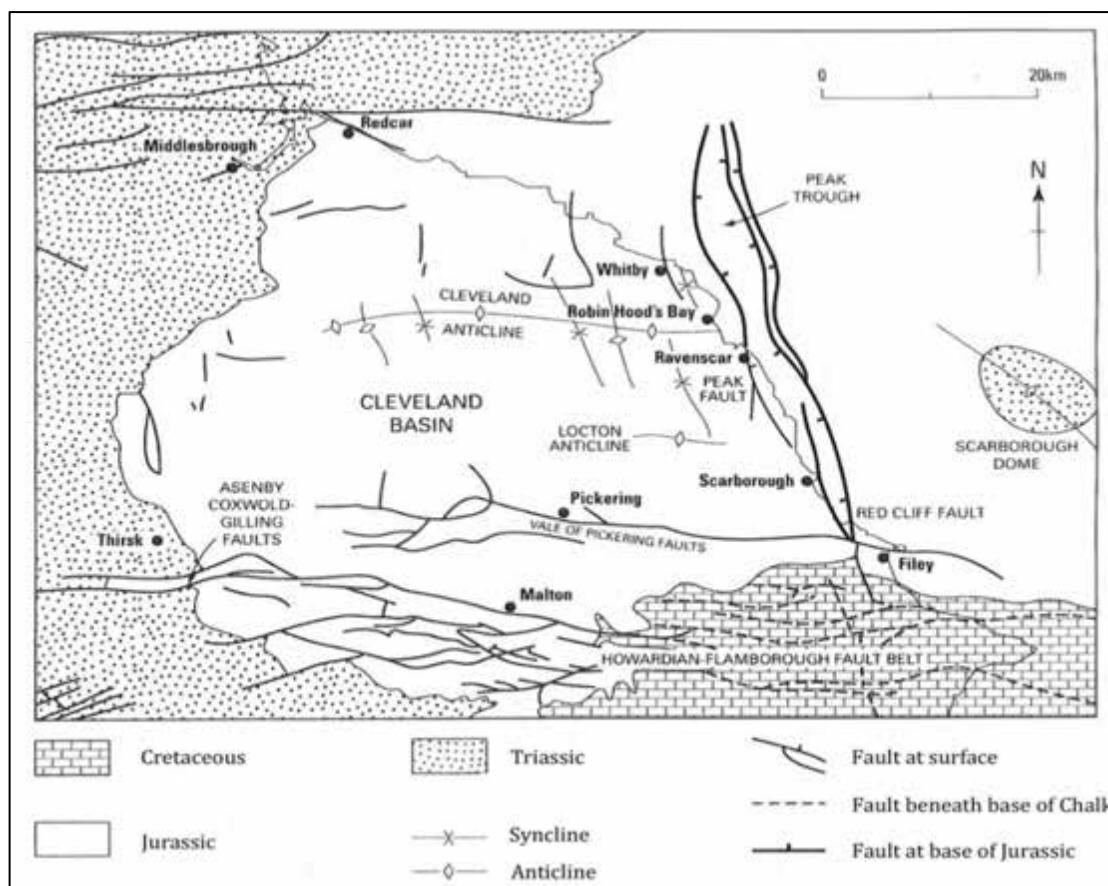


Figure 6-1: Regional geology map of the Cleveland Basin and surrounding areas

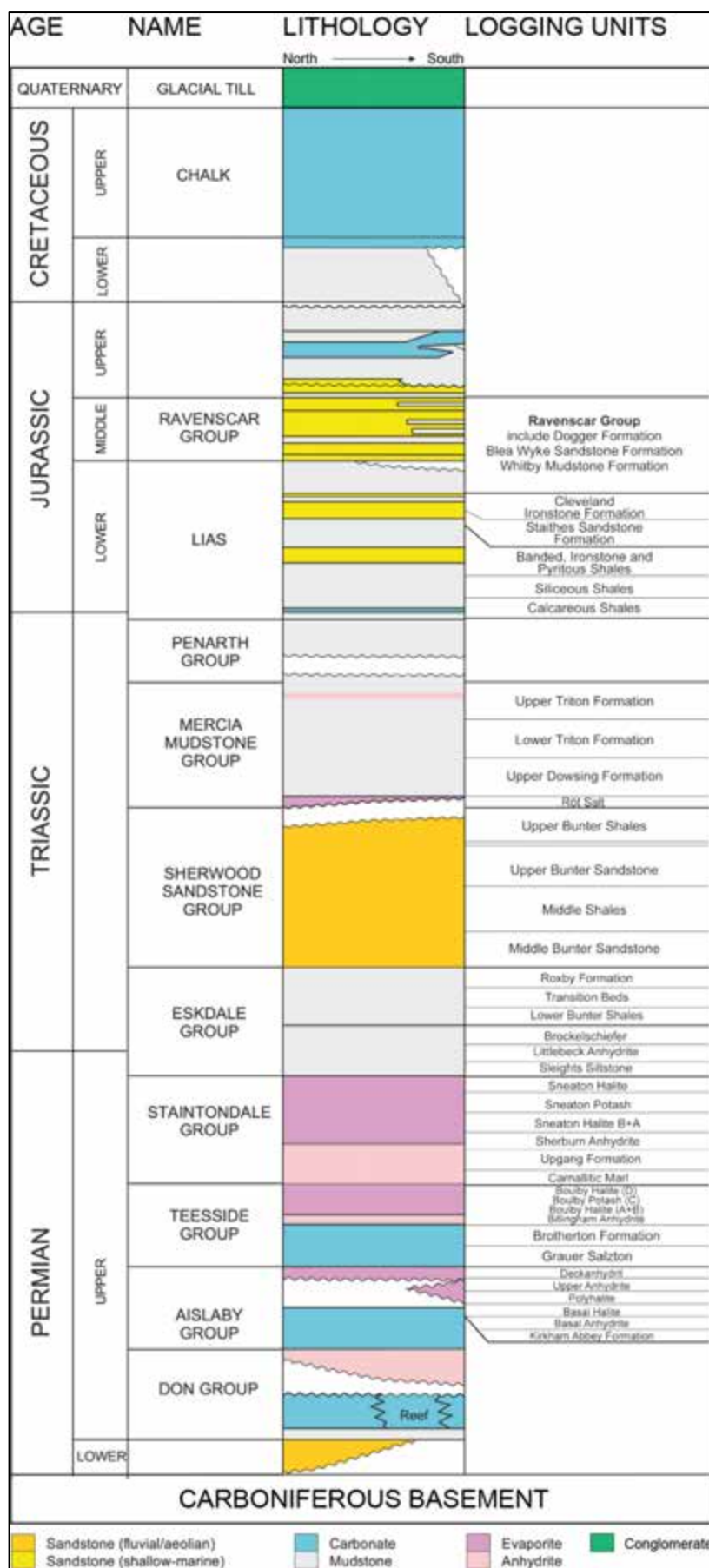


Figure 6-2: Regional stratigraphic column for the Cleveland Basin area

## 6.2 The Zechstein Group

The Zechstein evaporites, which host the polyhalite mineralisation targeted by Sirius, were deposited in the Zechstein basin, a large inland depression that covered parts of what is now Germany, Poland, Denmark, the Netherlands and the United Kingdom. The basin was a long-lived feature, with evaporite deposition spanning 5 to 6 million years. The deposition of the evaporites is generally considered to be a result of periodic marine transgressions into the basin, caused by a combination of sea level change and crustal subsidence, followed by sealing of the basin and subsequent evaporation of seawater and deposition of evaporitic sediments.

This cyclical process of basin flooding and evaporation produced four major evaporite cycles (termed Z1 to Z4, with Z1 being the basal unit) and several locally developed, minor evaporitic cycles (termed Z5-Z7). In the Project area, the Z1 to Z4 cycles are referred to as:

- the Don Group (Z1);
- the Aislaby Group (Z2);
- the Teesside Group (Z3); and
- the Staintondale Group (Z4)

Sedimentation during each evaporite cycle followed a reasonably consistent sequence. Carbonate forms the basal layer and this was followed by sulphate deposition (gypsum), then halite deposition and finally potassium and magnesium salt deposition. Within these large-scale cycles a series of sub-cycles have also been identified. While this general stratigraphy is consistent over large areas, there are important lateral variations, most notably towards the margins of the basin where there is an increase in carbonate and anhydrite content. There also tends to be more lateral variation in sediment deposition in the lower two cycles (Z1, Don Group and Z2, Aislaby Group, which contains the target polyhalite horizons); which may be at least partly due to more complex paleotopography during Z1 and Z2 deposition.

Most of the original evaporitic sediments have undergone subsequent alteration. The most common alterations are from limestone to dolomite, gypsum to anhydrite and anhydrite to polyhalite, all of which are syn-sedimentary or diagenetic alteration processes. In some locations there have also been subsequent reversals of the gypsum to anhydrite process.

## 6.3 Local Geology

The polyhalite mineralisation is hosted within the Fordon evaporite, which is part of the Aislaby Group (Z2). Within undeformed parts of the AOI, the Fordon evaporites have an average thickness of approximately 210 m. A typical stratigraphic section through the Fordon evaporite is presented in Figure 6-3 but there is significant local and deposit-scale variation in this because of the AOI's location in the transitional zone between the Fordon's shelf and basinal facies.



The Fordon's basal contact with the Kirkham Abbey Formation (limestone) and upper contact with the Teesside Group's Grauer Salzton (also limestone) are both unconformities. The upper contact of the Kirkham Abbey Formation is irregular, suggesting significant palaeo-topographic relief. Individual drill intercepts of the contact between the Fordon evaporite and the Grauer Salzton indicate that this surface is more consistent, typically with dips of  $<5^{\circ}$ . Local dips up to  $13^{\circ}$  are indicated by triangulation of intercepts between parent and daughter drillholes but it is possible that these higher dips may be related to small-scale faulting.

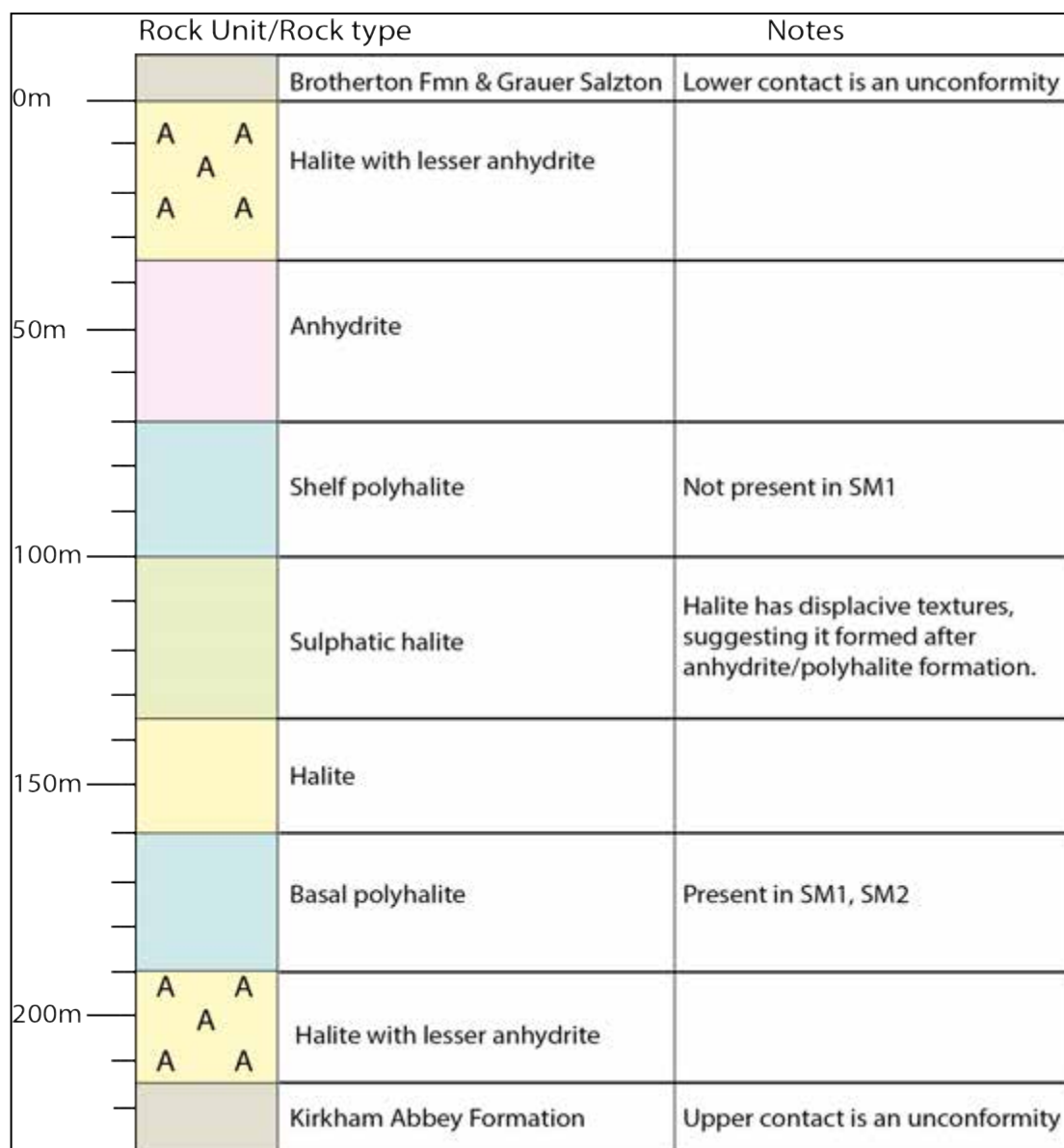
Two polyhalite seams have been identified by drilling to date and these have been termed the Shelf polyhalite seam (the "Shelf Seam") and the Basin polyhalite seam (the "Basin Seam"). Both are stratiform and occur at a specific position within the stratigraphic column.

The Shelf Seam occurs near the top of the Fordon evaporite and is typically bounded by intergrown halite-anhydrite-polyhalite beneath and anhydrite above. It has been intercepted in a number of drillholes throughout the central and western parts of the project area. The seam is thickest in the northern and central parts of the Project area, thinning to the west and south.

At a local-scale, drill intercepts indicate some variability in the orientation of layering within the Shelf polyhalite seam. These are thought to be related to local sedimentary features such as gypsum domes (Kasprzyk 1993). There are also significant variations in the thickness of the Shelf Seam over distances of  $<50$  m. Between SM3 and SM3A, for example, the true thickness of the Shelf Seam varies from 22.2 m (SM3) to 39.2 m (SM3A) and between SM11 and SM11B, the true thickness of the Shelf Seam varies from 51.8 m (SM11) to 67.9 m (SM11B). In both cases there is no evidence for faulting and the upper contacts dip less than the lower contacts suggesting that thickness variations outside of fault zones may be predominantly due to irregular basal contacts.

The Basin Seam occurs between 10 m and 40 m above the Kirkham Abbey Formation and is typically bound above and below by halite with a variable content of sulphate and other impurities. It occurs predominantly in the northwest of the Project area, however, locally there appears to be significant variability in its distribution. One hypothesis to explain this local variability is that the extent of the Basin Seam is controlled by a complex palaeo-coastline, however, further work is required to fully test this hypothesis.

The understanding of the Basin Seam is limited by the fact that there were only two intercepts of this during the current drilling programme: notably in SM1 and SM2. In SM2, the Basin Seam appears to be flat lying and contains textures that are interpreted to be indicative of mass flow sediment transport. These textures were not observed in the Shelf Seam. The Basin Seam in SM1 was not logged by SRK, however, logging by FWS Consulting (FWS) indicates dips within the polyhalite of between  $13^{\circ}$  and  $55^{\circ}$ . The halite immediately above the SM1 Basin Seam is also strongly folded. The steep dips and folding are most probably due to post-sedimentary deformation as SM1 lies within a zone of significant salt thickening in the hangingwall of the large-displacement Pasture Beck Fault.



**Figure 6-3: Typical stratigraphic column through the Fordon evaporite within the Sirius resource area.**

## 6.4 Mineralisation

As stated previously, potash mineralisation within the Fordon evaporites consists predominantly of polyhalite and is interpreted as dominantly a secondary alteration/replacement mineral that formed syn-deposition or during very early diagenesis (Peryt et al. 2005). Polyhalite formation is interpreted to be a multistage process, with syndepositional dehydration of gypsum to anhydrite followed alteration of anhydrite to polyhalite by reaction with a potassium and magnesium rich brine (Stewart 1963; Peryt et al. 1998; Peryt et al. 2005). Stewart (1963) also raised the possibility that some primary polyhalite may crystallise during this process, however, the proportion of primary polyhalite (if any) in the mineralisation is unclear.

Polyhalite in the AOI is commonly banded on a millimetre to tens of centimetre scale (Figure 6-4). Massive polyhalite also occurs, however, this is mostly interpreted to be the result of a texturally destructive alteration rather than a primary sedimentary feature. There are often identifiable low grade and high grade bands within the Shelf Seam that can be traced over distances of up to 100 m between parent and daughter boreholes, however, correlating these individual bands between drillholes (on scales of  $\geq 1$ km) is generally not possible.

At the microscale, the polyhalite present in the AOI typically occurs as a fine ( $<100 \mu\text{m}$ ) crystalline aggregate, while the seams themselves also contain subordinate amounts of intergrown halite, anhydrite, magnesite and mica. Where intersected in one drillhole, SM6, the Shelf Seam also contains a significant amount of kalistrontite, which is a potassium, strontium sulphate.



**Figure 6-4:** Typical example of polyhalite from drillhole SM3a: banding is most visible in the top right of the figure, while the polyhalite in the bottom left is more massive.

## 6.5 Structural Geology

### 6.5.1 Regional Structure

Geologically, the Project occurs along the southwest edge of the North Sea basin, in an area that has undergone a number of deformation events since the Precambrian.

#### *Pre-Zechstein*

Between the late Precambrian (ca 650 Ma) and the late Carboniferous, a number of major deformation events affected the region including the Cadomian, Acadian, Caledonian and Variscan orogenies. A number of major structural trends developed during these deformation events covering a range of orientations. Although these deformation events predate the deposition of the Zechstein and therefore do not directly influence the polyhalite, the resultant structures form weak zones within the crust which may have been preferentially reactivated during the Mesozoic and Tertiary.

#### *Syn-Zechstein*

The Zechstein sequence was deposited during the Permian. There is no evidence of active faulting in the southern North Sea during deposition of the Zechstein (Stewart & Coward 1995), although it is generally considered that significant fault-related extension did occur during the Permian further northeast in the Central Graben (Hodgson et al, 1992).

### *Post-Zechstein*

Significant E-W extension occurred from late Permian to the early Cretaceous, forming what is now the North Sea basin. In the centre of the North Sea Basin is a series of large, approximately north-trending grabens, such as the Central Graben and the Viking Graben. However, along the southern margin of the North Sea, a number of mini-basins formed, separated by local topographic highs. Several of these mini-basins are oriented oblique to the regional extension direction, suggesting local transtensional deformation in these areas, which may be the result of reactivation of pre-Permian structures. During the late Cretaceous and early to middle Tertiary, the tectonic regime in the North Sea became contractional, causing the reactivation of some Mesozoic normal faults as reverse faults. The NW-striking Cleveland Dyke was also emplaced at some stage during the Tertiary.

## **6.5.2 Local Structure**

A number of faults have been observed within the Sirius AOI. Most of these faults are inferred to have formed during the Mesozoic in a locally transtensional environment and the majority have apparent normal displacements. There is, however, also evidence that a number of these faults either formed as, or were reactivated as, reverse faults during late Cretaceous-Tertiary contraction. Sub-vertical strike slip faults have also been interpreted from the seismic data, however, due to the nature of seismic data the amount of strike slip movement cannot be quantified.

Three dominant fault orientations have been observed within and immediately adjacent to the resource area: NNW striking, WNW striking and ENE striking. Additional fault orientations cannot, however, be ruled out due to the difficulty of correlating a number of lower displacement faults between seismic sections.

Based on the offset of reflectors and the amount of associated salt thickening apparent in the seismic data, the faults within the Sirius AOI have been divided into three groups: high displacement faults (throw >60 m), low displacement faults (throw ≤60 m) and strike slip faults. The throw is typically greatest at the top of the Kirkham Abbey Formation in both the high displacement and low displacement faults.

High displacement faults are longer and are thus interpreted with higher confidence as they can be traced through multiple seismic lines. They are also typically associated with significant salt flow (halokinesis), resulting in considerable thickening of the Fordon Evaporite in the hangingwall of normal faults and occasional, small-scale, passive salt diapirs. These fault systems also tend to have greater vertical extent, commonly penetrating into the overlying Triassic-Jurassic sediments (the Bunter Shale and Sherwood Sandstone, for example).

Low displacement faults can be observed in the seismic data and have been interpreted from structural logging of the SM7 and SM7a drill core. Low displacement faults are not associated with significant salt thickening and most appear to terminate up-dip within the Zechstein. Drill core from SM7 and SM7a suggests that at least some of these low displacement faults may produce passive monoclines within the polyhalite rather than brittle offsets and fracturing; that is the polyhalite appears to drape over offsets in the top of the Kirkham Abbey Formation. However, it is unclear how representative the SM7 and SM7A intercepts are of the rest of the low displacement faults. As such, the nature of any associated fracturing or fault-related folding has not yet been confirmed.

Strike slip faults do not fit into either of the above categories, as their displacement vector and the average bedding dip are both sub-horizontal. Because there is no difference in head either side of a strike slip fault, no significant flow is expected in the halite. How the polyhalite seams are affected by strike slip faults is uncertain, however, some amount of brittle fracturing is probable. While strike-slip displacement cannot be directly estimated from seismic data, the length and area of each fault is likely to be broadly proportional to displacement. Similarly, some apparently dip-slip faults with high length relative to throw, such as the Whitby Fault, may host a component of strike slip movement.

The only other relevant structural feature within the AOI is the sub-vertical, NW-striking Cleveland Dyke which occurs in the SW corner of resource area and is not associated with any displacement at surface.

Faults with throws of  $\leq 15$  m are at or below the seismic resolution and therefore the number of these faults in the resource area is not known. Given the multiple deformation events this area has undergone, including transtension and subsequent inversion, it is not possible to confidently draw fault scaling relationships from the data, although it is reasonable to assume that there will be significantly more faults with throws  $< 15$  m (that is, sub-resolution) than there are with throws between 15 and 60 m. These sub-resolution faults will probably not be evenly distributed throughout the resource area, but will more likely tend to cluster around mapped high displacement faults and, to a lesser extent, around the mapped low displacement faults.

## 6.6 SRK Comments

In summary, the presence and continuity of the polyhalite at a regional scale has been demonstrated by work carried out by Sirius and by previous explorers and developers in the region. Further, the lithological and structural setting of the mineralisation planned to be mined by Sirius, and in SRK's opinion the nature of this mineralisation, is known to a sufficient level to support the estimates of Mineral Resources and Ore Reserves presented later in this report.

# 7 HISTORY

## 7.1 Background

During the 1960s, three companies explored for potash in the Project area:

- Cleveland Potash Ltd (CPL), owned initially by Imperial Chemical Industries (ICI) and Charter Consolidated Ltd and now owned by ICL UK;
- Whitby Potash Ltd (WPL), owned by Armour Chemical Industries (later by Shell and then Consolidated Goldfields); and
- Yorkshire Potash Ltd (YPT), owned by Rio-Tinto Zinc Corporation.

All the above companies submitted and received planning applications in the late 1960s. Notably, WPL applied for planning consent for solution mining in 1962, although the application was later withdrawn, and also established a pilot solution mining plant on Egton High Moor in 1966 which was closed down in 1970. Meanwhile, CPL commenced construction of the Boulby mine (Boulby) in 1969.

The WPL and YPT applications lapsed and these companies are no longer operating. Boulby initially had resources estimated to be sufficient for 20 to 30 years, but in 1997 consents were granted to extend the existing licence area including taking up some of WPL's original ground. Boulby remains open today although operations have recently been re-focussed on polyhalite rather than sylvinite.

## 7.2 Historical Exploration

Most of the historical exploration activities undertaken within the AOI prior to that undertaken by Sirius focussed on exploring for other resources, notably oil and gas. Some of the data collected however has been obtained and compiled by Sirius and its consultant, FWS, and has to varying extents been reviewed and in some cases used directly in producing the Mineral Resource and Ore Reserve estimates presented in this CPR. Notably:-

- The E series of holes was drilled between 1939 and 1963 by D'arcy Exploration Company and later by ICI, and eventually BP. This drilling was predominantly focussed on exploration for oil, however, potash minerals were noted in three seams, the upper two seams were noted to be composed primarily of sylvite, and the lower seam was noted as containing 45 feet of polyhalite in a number of holes. Samples were noted as having grades of up to 15.0% K<sub>2</sub>O.
- Between 1949 and the late 1950s, Fison plc (Fison) drilled four deep drillholes looking for the Sneaton and Boulby potash seams. Core logs are available from this drilling; however, the original assay reports appear to have been lost. Figures currently available provide information on the thickness and grades of the Sneaton and Boulby seams.
- In 1957, BP reopened a Fison drillhole near Robin Hoods Bay for hydrocarbon exploration purposes. The drillhole was extended through the Z2 evaporite sequence. No core exists for this hole, however, a gamma ray log and composite log are available.
- Exploration by YPT and WPL in the 1960's included the YP, A and WP series holes. None of these is thought to have been extended to the polyhalite horizons.
- ICI resumed exploration in the mid 1960's near Staithes, the presence of the Z2 and Z3 potash seams was confirmed, and workable seams of Z3 Boulby potash were delineated around Staithes and west of Whitby. A joint venture was created between ICI and Charter Consolidated Ltd to create CPL. Planning consent was obtained in 1969 and work subsequently began, including a pilot borehole to prove the strata, and two circular shafts (sunk to 1,150 m). Potash was intersected in the first shaft in 1973 and full scale production commenced in about 1975.
- Offshore exploration of the North Sea Oil and Gas Fields began in the 1960s and proved the continuity of the Zechstein sequence between the NE Yorkshire province, and Central Europe.

The collar positions of the historical drillholes which are located within the current AOI are shown in Figure 7-1.



**Figure 7-1: Location of all historical drillholes located within the Sirius AOI**

## 7.3 Sirius Exploration

### 7.3.1 Background

The main orebody historically mined at Boulby is a sylvite seam which is present in the Z3 cycle and the bulk of the historical exploration activity in the region has therefore been focussed on the Z3 and overlying cycles. A certain body of information was however also collected on the underlying Z2 cycle which confirmed the presence of seams of polyhalite within this. This information, combined with indications from both mining at Boulby, and the historical exploration drilling, indicated to Sirius that the Boulby Potash Seam, was both generally very variable in thickness and grade over short distances and thinner and poorer in quality to the south of the Boulby licence. This suggested to Sirius that the Boulby Potash Seam would be a challenge to explore.

Given this, and the fact that the other known sylvite seam, which is in the Z4 cycle and generally referred to as the Sneaton Potash Seam, was lower grade and situated very near to the top of the evaporites (that is, close to the overlying aquifers which would cause challenges from a mining perspective in that it would need to be ensured that the mining does not impact on the integrity of these), Sirius's strategy from the outset was to target not only these sylvite seams, as had been done by previous explorers, but also the underlying polyhalite. Historical drilling had shown this to be present in the deeper Fordon Sequence, part of the Z2 Cycle, and Sirius considered this would be more consistent and less prone to variation over short distances, an observation SRK understands is supported by the results of trial mining of this seam already carried out at Boulby.

The historical drilling outlined above had enabled the onshore extent of the Zechstein evaporites to be reasonably defined and, although the quality of the old logs is variable and often poor, approximate geographical limits could be placed on each seam. Exploration between the 1950s and 1970s for sylvite in the Z3 and Z4 seams had concentrated around Eskdale, and drillhole records from ICI, Fisons, WPL and YSL included intersections of Z3 at depths below surface which were comparable in terms of thickness and quality with those at Boulby. Records of the Z2 polyhalite were sparser – and, with a few exceptions, tended to comprise wireline geophysical logs from which the presence, thickness and quality of polyhalite had to be inferred. Taken in conjunction with offshore hydrocarbon well records, this was, however, sufficient to enable FWS to develop a simple geological model which suggested that polyhalite had potential to be present throughout an area of some 350 x 50 km in extent wrapping around the NW corner of the Zechstein Basin. Most of this would lie offshore but it also extended across some 90 km of the Yorkshire coastline between Staithes and the Humber, and inland for up to 20 km.

### 7.3.2 Sirius Strategy

The aim of the AOI outlined by Sirius was to encompass the entire area within which it was conceivable that potentially workable thicknesses and grades of sylvite (in Z3 and Z4) and polyhalite (in Z2) could occur at a mineable depth – the maximum depth at that time being considered to be around 1,900 m. Notably therefore the Sirius AOI includes portions of the former WPL planning consent area and the entire YPT planning consent area.



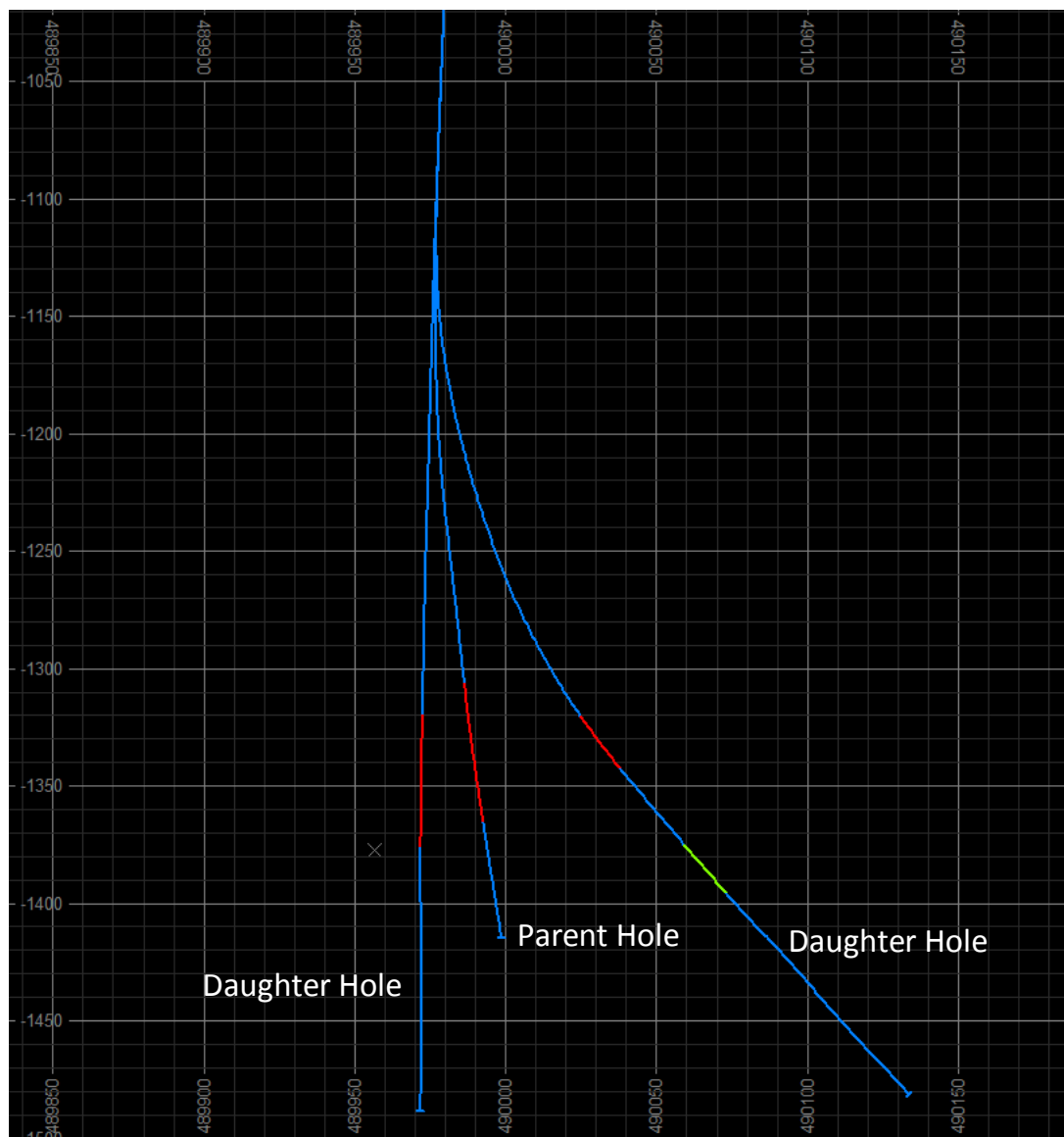
Sirius initially designed its drilling programme primarily to infill the areas between the historical boreholes throughout the whole AOI, in the expectation that this would yield an improved geological model from which to identify the best place for the follow-up drilling needed to delineate a Mineral Resource. Actual borehole sites, however, also needed to take account of other factors, notably the mineral rights status and access. Specifically, Sirius therefore focussed on areas where land and mineral agreements were already in place, and away from moorland. Since the majority of positive drillhole information on sylvite and polyhalite, available at the time Sirius was planning its exploration, was centred on the northern part of the AOI, this was naturally the area targeted to commence exploration.

Once the first group of drillhole sites had been selected, approvals were applied for and granted, allowing drilling operations to commence. As the drilling programme advanced, and results were received, Sirius was able to develop a new and more detailed conceptual model of the formation of polyhalite, and its disposition and the exploration programme was continually modified as results became available.

### 7.3.3 Sirius Drilling

All drillholes completed during the 2011-2013 Sirius drill programme were drilled using a combination of open holed methods and a PQ sized diamond drill bit to core through the lithologies of interest. All holes were drilled by PR Marriot Ltd and a combination of Marriot rigs were used with open hole and diamond coring capabilities. Once drilling was completed, a gyrodata survey was carried out and the holes were logged by Schlumberger for natural gamma, density, sonic, neutron, calliper, temperature and ultrasonic borehole imaging, using wireline logging methods. All drillhole collars were surveyed using industry best practice standards using GPS equipment accurate to within  $\pm 50$  mm. Core recovery was typically very good, specifically in the polyhalite seams.

The 2011 – 2013 drill programme included a number of parent and daughter (deflection) holes (see Table 7-1). The parent holes are typically spaced, between approximately 1.1 and 1.8 km with the largest distance being 5.7 km between SM4 and SM9. The polyhalite intersections in the deflections are typically between 30 – 60 m from that in the parent hole. The aim of drilling daughter holes was to obtain information on the geological and grade variability of the polyhalite seams over shorter (mining scale) distances. Figure 7-2 shows an example of polyhalite intersections in a parent hole and associated daughter holes.



**Figure 7-2: Example of a parent hole (SM7) and associated daughter holes (SM7A, and SM7B)**

To date Sirius has completed 17 drillholes for a total of 16,009 m though it should be noted that not all 17 drillholes have been used in the resource estimation process. A summary of the Sirius drillholes is provided in Table 7-1 while Figure 7-3 shows the location of these drillholes with respect to the AOI and also the other historical drillholes used to derive the MRE produced by SRK.

The differences in the thickness of the polyhalite seams between the parent and daughter holes are also shown in Table 7-2. These seam thicknesses are based on an 80% polyhalite cut-off grade.

**Table 7-1: Summary of Sirius's 2011 - 2013 exploration drill programme**

BHID	Open Hole	Hole Type	Seam	Length of Hole Depth (m)
SM1	No	Parent	Basinal Seam Only	1664.6
SM2	No	Parent	Shelf and Basin Seam	1597.93
SM3	No	Parent	Shelf Seam Only	1652.21
SM3a	No	Daughter	Shelf Seam Only	423.6
SM4	No	Parent		1665.51
SM4a	Yes	Daughter		352.6
SM5	Abandoned			180.2
SM6	No	Parent	Shelf Seam Only	1698.6
SM7	No	Parent	Shelf Seam Only	1625.44
SM7a	No	Daughter	Shelf Seam Only	358.13
SM7b	Yes	Daughter	Shelf and Basin Seam	422.6
SM9	No	Parent	Shelf Seam Only	1663.2
SM9A	No	Daughter	Shelf Seam Only	198.01
SM9B	No	Daughter	Shelf Seam Only	225.13
SM11	No	Parent	Shelf Seam Only	1580
SM11A	No	Daughter	Shelf Seam Only	347.5
SM11B	No	Daughter	Shelf Seam Only	353.5
<b>16008.76</b>				

**Table 7-2: Comparison of Shelf Seam Thickness (based on an 80% cut-off grade) between parent and daughter holes**

BHID	From	To	Seam thickness (m)
SM3	1503.47	1521.14	17.67
SM3A	1501.7	1536.84	35.14
SM4	1532.86	1537.99	5.13
SM4A	1543.66	1550.82	7.16
SM7	1457	1513.9	56.9
SM7A	1446.6	1507.08	60.48
SM7B	1469.75	1497.79	28.04
SM11	1517.8	1538.6	20.8
SM11A	1524.9	1560.6	35.7
SM11B	1522	1565.6	43.6

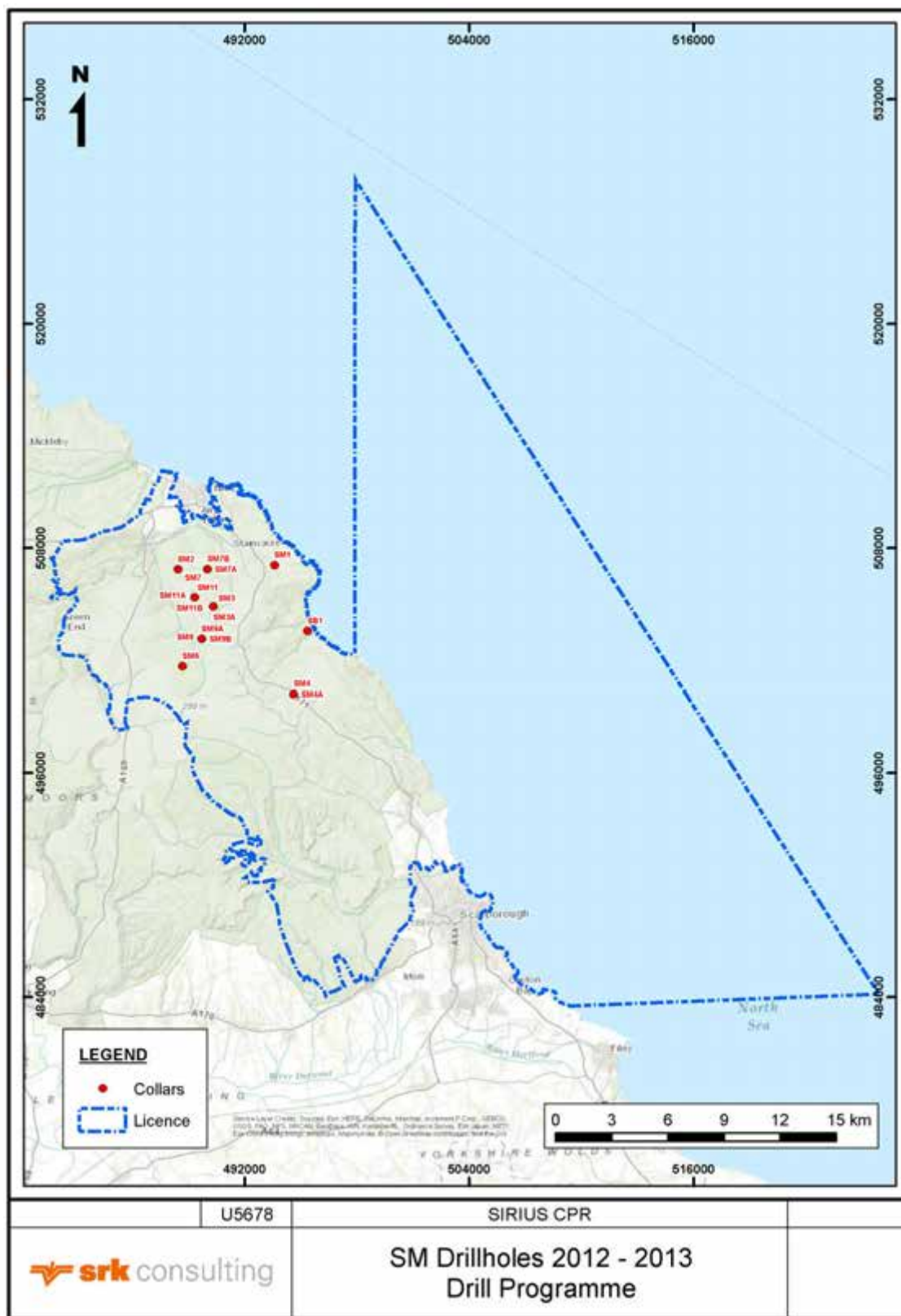


Figure 7-3: Location Map showing all holes used to derive SRK's MRE

### 7.3.4 Sirius Logging and Sampling Procedures

The drilling programme was managed by FWS in conjunction with Sirius and SRK considers that all drilling and logging was undertaken to an industry acceptable standard. Sirius was responsible for drillhole planning, drillhole set-up, all onsite drill rig supervision and monitoring, while FWS was responsible for field logging, detailed core logging, and sample selection and had a trained geologist on site at all times during drilling. SRK has reviewed the field procedures followed by FWS and considers these to have been to a high standard. Notably:-

- Basic geotechnical information was collected by FWS which included:
  - Solid Core Recovery (SCR);
  - Rock Quality Designation (RQD); and
  - Fracture Index for each lithological unit present in the core trough; and the top and bottom of fractures are marked using yellow for top and blue for bottom.
- All core boxes were photographed showing the core and the lid with all information visible within the frame. The lid was placed at the top of the box and a readable tape measure along the centre rung of the box. The photograph was taken from above the core with at least a 45° angle to reduce reflection. The core is clean and damp when photographed to allow visibility of features.
- The site geologist made a preliminary geological log of the core using FWS Core log sheet.
- Gamma readings were taken of the core using a handheld gamma logger and recorded at the appropriate points on the sketch of the core. A minimum of two readings per 1 m length were made with more (up to four or five) in target potash or polyhalite seams. External gamma radiation was minimised by placing lead sheeting on either side of the core being measured and a lead cover housing the core gamma logger.
- Zones which were suspected as being carnallitic were wrapped in cling film together with a desiccant (rice) and rolled up to seal the film as soon as possible so as to prevent moisture absorption.
- Full core boxes for transfer to the Wykeham Core store at Scarborough and to the British Geological Survey (BGS) were prepared for transport by packing any gaps in the core with bubble wrap.
- A Sirius member of staff with responsibility for the Wykeham core store made arrangements for the overnight transport of the core to BGS. An FWS Borehole Core Chain of Custody Form was completed by the core shed staff for the core being transferred to BGS, and pdf copies emailed to FWS once the core had been shipped. The remaining core is securely stored at the Wykeham core store.
- On completion of the additional examination, the core was transferred to the Sirius archive core storage facility at Scarborough.

### 7.3.5 Sample Preparation

Sample preparation was carried out at BGS in Keyworth, Nottingham according to the following process:

- Core boxes were laid out in sequential order on the core examining tables.
- A cloth and minimal water was used to thoroughly clean the core.
- An initial lithological description and preliminary review of the mineralogical composition was completed by senior FWS staff.
- Core was dry cut in half using a core saw.
- The half core was re-logged in detail by senior FWS staff, including the taking of handheld gamma measurements.
- A high resolution camera was used to photograph the half core.
- Sampling intervals were defined based on mineralogical, and lithological information.
- Assay intervals were defined for one quarter of the half core and sent for sample preparation and analysis.
- A unique number was given to each sample.
- Samples were broken into coarse pieces and stored securely in a plastic bag which had been numbered with the unique sample number.
- Samples were jaw crushed to approximately 4 mm.
- Samples were riffle split to obtain 300 to 400 g of material.
- The 300 to 400 g sample from riffle splitting was divided into approximately 150 g samples and put through a ball mill using agate balls for approximately 20 minutes, the use of agate balls minimises contamination in geochemical samples.
- Samples were removed from the ball mill recombined in a plastic bag and re-homogenised by shaking the bag thoroughly to ensure a uniform sample.
- A 50 g subsample was taken for analytical purposes.

### 7.3.6 Laboratory Analysis

All analyses were carried out at BGS in Keyworth, Nottingham using both QXRD and Inductively Coupled Plasma Mass Spectrometry ("ICP")

### 7.3.7 Quality Assurance and Quality Control (QAQC)

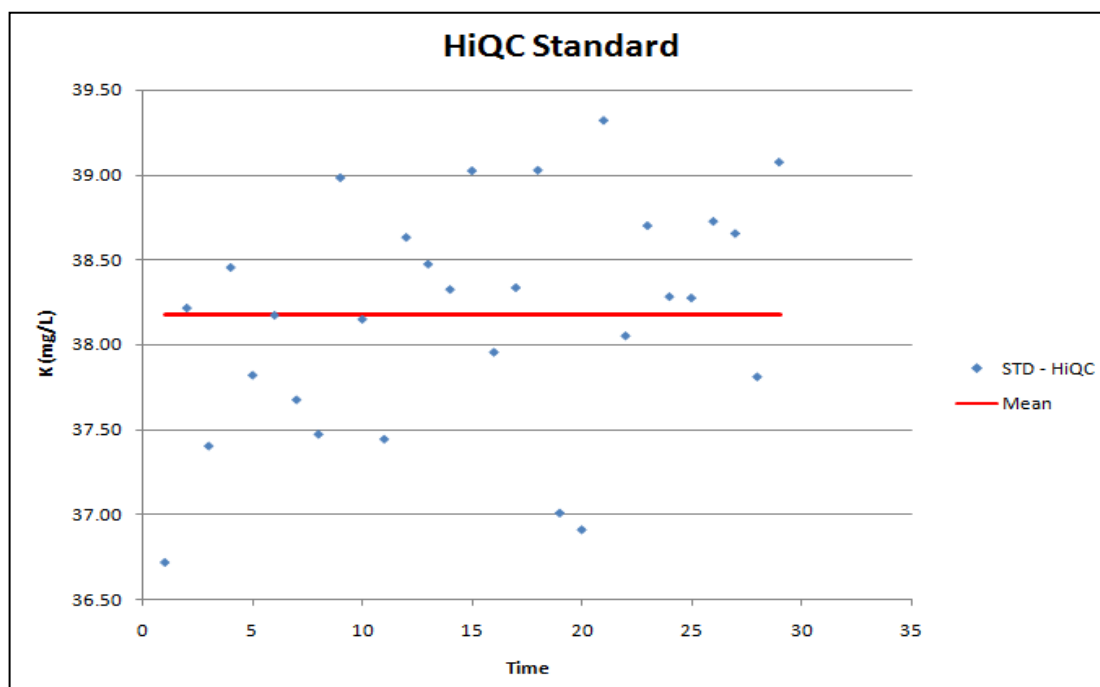
No certified reference material (CRM) currently exists for polyhalite. BGS, therefore, developed a number of analytical standards and protocols to ensure reporting of the %K and polyhalite was to an acceptable standard. While all the QAQC data provided to SRK relates to ICP analyses rather than QXRD analyses, and while SRK's Mineral Resource Estimate presented herein is based on QXRD analyses, the strong relationship between ICP and QXRD results means that the results of this work do provide comfort as to the quality of the data used.

### *Polyhalite Reference Material*

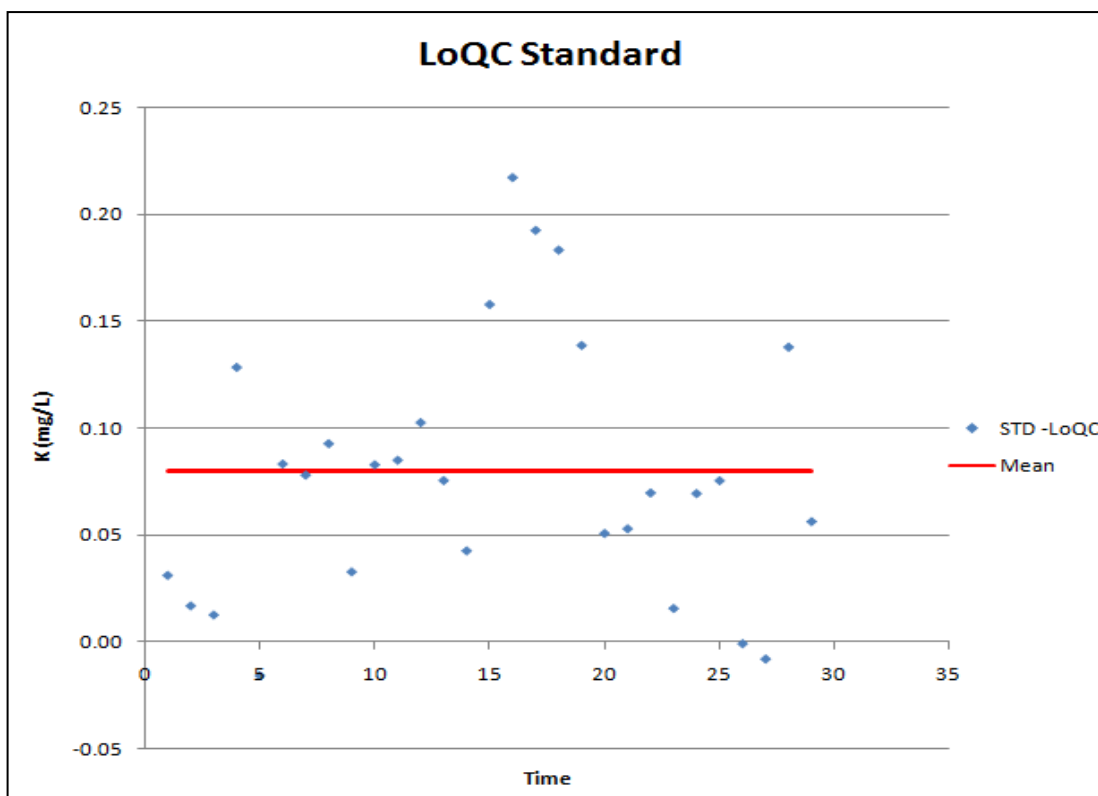
Sirius and BGS prepared a bulk sample of almost pure polyhalite through milling until a homogenous sample was produced. Repeat analyses were conducted on samples of the homogeneous material using QXRD, and a reference value for this material established. This bulk sample was stored at BGS and used as a polyhalite reference material (P-Ref) which was inserted into each sample stream. The samples analysed represented approximately 5% of the total samples assayed. While the results showed a spread of grades around a mean value of 12.97%K, the analyses of the bulk polyhalite material were reasonably in line with the values expected for almost pure polyhalite.

### *Standards*

A range of standards prepared by BGS was also used during the analytical process; these were multi-element high (HiQC) and low (LowQC) bearing solutions used to monitor the precision of the analytical equipment. These standards were inserted at regular intervals into the sample stream. A total of 58 standards were analysed representing approximately 14% of the total assay data. The figures below show the results of the HiQC and LoQC standards, respectively, which again support the integrity of the assaying technique. SRK does however acknowledge that a slight upward drift in the HiQC standard is observed over time.



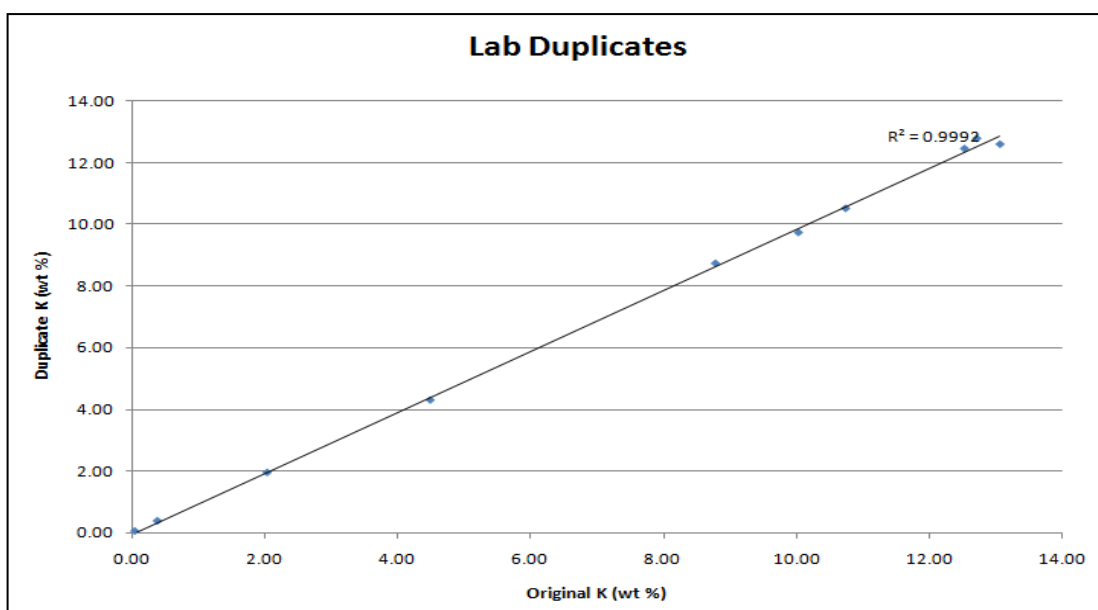
**Figure 7-4: BGS High Quality Control Multi-Element Standard**



**Figure 7-5: BGS Low Quality Control Multi-Element Standard**

#### *Duplicates*

Laboratory duplicates were conducted by BGS, and were produced after pulping with two samples taken for analysis. The results of analysis on the laboratory duplicates are shown below in Figure 7-6 with a strong correlation observed.



**Figure 7-6: Results of the BGS laboratory duplicate analyses**



### 7.3.8 Density Determinations

Density measurements were undertaken by IFG Leipzig as part of the geotechnical testing requirements. Density was determined as follows:

- specimens were cut to specific dimensions (within <0.02 mm) and the volume was calculated; and
- mass was determined using calibrated digital scales:
  - $\text{Density (g/cm}^3\text{)} = \text{Mass of Sample} / \text{Volume of Sample}.$

SRK used the density data calculated by IFG Leipzig and provided to SRK to assess the density of the polyhalite. The data which related to almost pure polyhalite was weight averaged and a mean density value of 2.75 g/cm<sup>3</sup> was calculated.

### 7.4 SRK Comments

In producing its Mineral Resource estimate presented later in this report, SRK has relied upon both the detailed data collected during the 2011 - 2013 drilling campaign as well as validated historical data compiled by FWS.

SRK has completed a number of validation checks itself on the raw data supplied prior to use in the MRE and has checked the QAQC results returned from the assay laboratory.

SRK is confident that the quantity and quality of data available is sufficient to support the Mineral Resource estimate as reported in Section 8.

## 8 MINERAL RESOURCES AND ORE RESERVES

### 8.1 Introduction

The Mineral Resource and Ore Reserve estimates presented in this section of the report have been produced by SRK and are reported in accordance with the JORC Code (2012).

### 8.2 Data Manipulation and Validation

Prior to geological modelling, the Shelf Seam and Basin Seam intersections were separately coded within each drillhole. This was undertaken using a combination of gamma wireline log data and QXRD data. Both the Shelf Seam and Basin Seam contacts were then defined based on a greater than 80% polyhalite cut-off grade. Table 8-1 below indicates the data available for coding for each hole used in the resource estimation process. It should be noted that this includes all those drillholes completed by Sirius that were continued to the polyhalite seams plus four historical holes within the area where either QXRD or gamma data was available.

**Table 8-1: Data available for coding the Shelf and Basin polyhalite seams**

BHID	QXRD	GAMMA	COMMENTS	DRILL PROGRAMME
SM1	Yes	Yes	Basin Seam Only	Sirius (2011-2012)
SM2	Yes	Yes	Shelf and Basin Seam	Sirius (2011-2012)
SM3	Yes	Yes	Shelf Seam Only	Sirius (2011-2012)
SM3a	Yes	Yes	Shelf Seam Only	Sirius (2011-2012)
SM4	Yes	Yes	Shelf Seam Only	Sirius (2011-2012)
SM4A	Yes	Yes	Shelf Seam Only	Sirius (2011-2012)
SM6	Yes	Yes	Shelf Seam Only	Sirius (2011-2012)
SM7	Yes	Yes	Shelf Seam Only	Sirius (2011-2012)
SM7a	Yes	Yes	Shelf Seam Only	Sirius (2011-2012)
SM7b	N/A	Yes	Shelf and Basin Seam	Sirius (2011-2012)
SM9	Yes	Yes	Shelf Seam Only	Sirius (2011-2012)
SM11	Yes	Yes	Shelf Seam Only	Sirius (2012-2013)
SM11A	No	Yes	Shelf Seam Only	Sirius (2012-2013)
SM11B	No	Yes	Shelf Seam Only	Sirius (2012-2013)
E5	No	Yes	Shelf Seam Only	Historical Hole
E11	Yes	No	Shelf Seam Only	Historical Hole
E13	Yes	No	Shelf Seam Only	Historical Hole
SB1	No	Yes	Basin Seam Only	Historical Hole

Where QXRD data was available, this was used to code the polyhalite seams, as it is considered more reliable than the gamma data (which only provides a reading of total % potassium (“% K”)), whereas QXRD is a quantitative data set which provides actual percentages of polyhalite present in a sample.

SRK undertook a data validation exercise to ensure that gamma data was of a suitable quality to be used for interpolation. Notably, SRK compared the gamma data with the QXRD data where both were available and derived a relationship between the two which was then used to derive “calculated” QXRD results from the gamma results where only the latter were available.

### 8.3 Polyhalite Seam Modelling

The footwall and hanging walls of both of the polyhalite seams were modelled using simple triangulated surfaces which honoured the >80% cut-off grade seam picks. While SRK accepts that this will not reflect the variability in seam thickness that has been shown to occur at a local scale, SRK considers this appropriate for resource estimation purposes.

### 8.4 Classical Statistical Study

#### 8.4.1 Polyhalite Content

Raw summary statistics of polyhalite content (Table 8-2) were calculated for both the Shelf and Basin Seams. The summary statistics show that the coefficient of variation (CoV) for both seams to be <0.3 which is reasonably low, indicating a low degree of polyhalite content variability within these.

**Table 8-2: Raw summary statistics**

SEAM	Number of Samples	Max* (% Polyhalite)	Mean (% Polyhalite)	Std Dev	CoV
Basin	361	100.52	81.78	23.77	0.29
Shelf	2539	103.40	86.85	13.96	0.16

Due to the use of gamma wireline log data for those holes which did not have QXRD assay information, the potential existed for there to be values with a calculated content in excess of 100% polyhalite. High grade capping was therefore undertaken to ensure that values above 100% were not present in the dataset used for the grade interpolation.

## 8.4.2 Compositing

Prior to generating the MRE, the samples were composited to equal lengths such that a constant sample volume was achieved, therefore honouring sample support theory.

As sampling was predominantly based on lithological intervals, the actual sample lengths range in size from 0.2 to 1.5 m. A composite sample length of 1.5 m was used as it was decided that compositing to half the smallest mining unit was appropriate. SRK undertook a statistical analysis to ensure that the resultant capping and composites did not result in a reduction in the mean polyhalite grade (Table 8-3).

**Table 8-3: Comparison of raw and capped, composite statistics**

SEAM	Number of Samples	Max (% Polyhalite)	Mean (% Polyhalite)	Std Dev	Number of Samples	Max* (% Polyhalite)	Mean (% Polyhalite)	Std Dev	% Absolute Difference
Basin	361	100.52	81.78	23.77	361	100	81.78	23.77	0.001
Shelf	2539	103.40	86.85	13.96	2539	100	86.83	13.93	0.01

## 8.5 Polyhalite Content Geostatistical Study

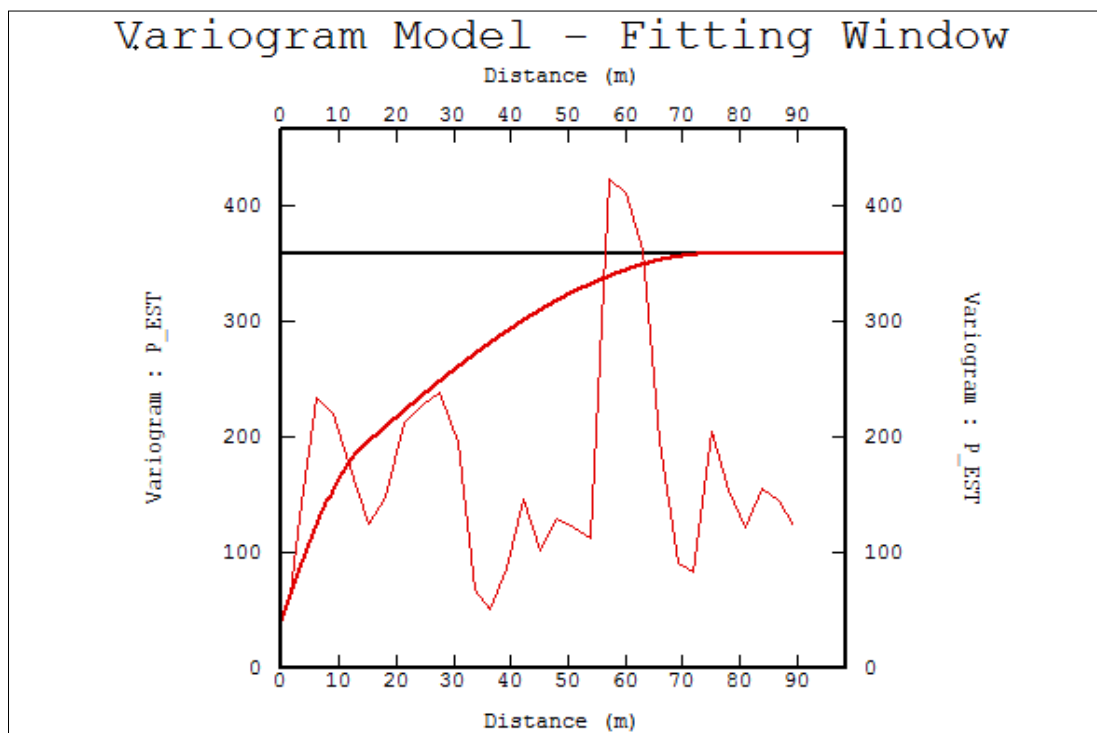
### 8.5.1 Introduction

A geostatistical study was undertaken to investigate the grade continuity and to derive parameters for grade interpolation. The 3D variogram analysis was undertaken in ISATIS software (ISATIS).

### 8.5.2 Variography

Variography is the study of the spatial variability of an attribute (in this case, the polyhalite grade). The 3D variogram analysis in this case was performed on grade data for the Shelf Seam only, as a number of parent and daughter holes have been drilled into the Shelf Seam, which provides some degree of closer spaced data. Spatial analysis of the data showed no clear directional trends or anisotropy in the data for the grade values, and therefore an omni-directional experimental variogram was created. While the experimental variogram created was of a relatively poor quality, short-scaled structures (14 m and 76 m) were able to be modelled and the second structure at 76 m shows some degree of grade continuity between the closely spaced parent and daughter holes from SM3, SM3A, SM7, SM7A, SM7B, SM11, SM11A, and SM11B.

The resulting modelled omni-directional variogram is shown in Figure 8-1 and was used to model the nugget and to fit a two structured spherical model. A summary of the normalised variogram parameters modelled for the Shelf and Basin seams as used during grade interpolation is shown in Table 8-4.



**Figure 8-1: Omni-directional modelled variogram**

**Table 8-4: Normalised variogram parameters used**

SEAM	Nugget	Range 1 Strike	Range 1 Dip	Range 1 Across	Sill1	Range 2 Strike	Range 2 Dip	Range 2 Across	Sill2
Basin	49.3	14	14	14	109.8	76	76	76	283.7
Shalf	16.4	14	14	14	36.6	76	76	76	94.5

## 8.6 Block Model Grade and Interpolation

### 8.6.1 Block Model Set-Up

An empty block 50 m (X) by 50 m (Y) by 3 m (Z) model was constructed in Datamine with origins and dimensions such that the model covered both the Shelf and Basin Seams. The hangingwall and footwall surfaces for these in Datamine were used to code the empty block model.

### 8.6.2 Grade Interpolation

Ordinary Kriging (OK) was used for the grade (polyhalite content) interpolation for both seams. Grade was then interpolated into the block model honouring the geological contacts defined by the geological modelling process and using the variogram parameters set out above. No other variables were modelled.

In order to provide a continuous estimation and honour the geological structure and, in particular, the along strike changes in strike orientation observed, it was decided to use dynamic anisotropy in the estimation process. Dynamic anisotropy uses angle data generated from the mineralisation wireframe to assign dip and dip direction to every block in the model. The search ellipse is rotated upon estimation of the block by honouring the associated dip and dip direction of that block.

For both the seams, dynamic anisotropy was utilised and an OK weighting function used within an anisotropic search using suitable parameters, as detailed in Table 8-5 and Table 8-6.

**Table 8-5: Search parameters used during OK estimation for the Shelf Seam**

SEAM	Search No.	SDIST (X)	SDIST (Y)	SDIST (Z)	Min Samples	Max Samples	Max No. Samples per Drillhole
Shelf	1	10000	10000	10	6	12	3
	2	20000	20000	20	6	12	3
	3	100000	100000	100	6	12	3

**Table 8-6: Search parameters used during OK estimation for the Basin Seam**

SEAM	Search No.	SDIST (X)	SDIST (Y)	SDIST (Z)	Min Samples	Max Samples	Max No. Samples per Drillhole
Basin	1	5000	5000	10	6	9	3
	2	10000	10000	20	6	9	3
	3	50000	50000	100	6	9	3

The search distances used were sufficiently large to ensure that information from several drillholes was used in deriving estimates for each block. To limit the influence of single drillholes in each case, a maximum number of samples per drillhole was specified so that the block estimate requires a minimum of two drillholes. A small maximum was also used to prevent over-smoothing of grade from drillholes that are considered too long a distance from the block being estimated.

The estimation parameters were set up by visually checking the data to ensure suitable minimum and maximum samples have been used, and that the factored searches were sufficiently large to fill the entire block model.

## 8.7 Model Validation

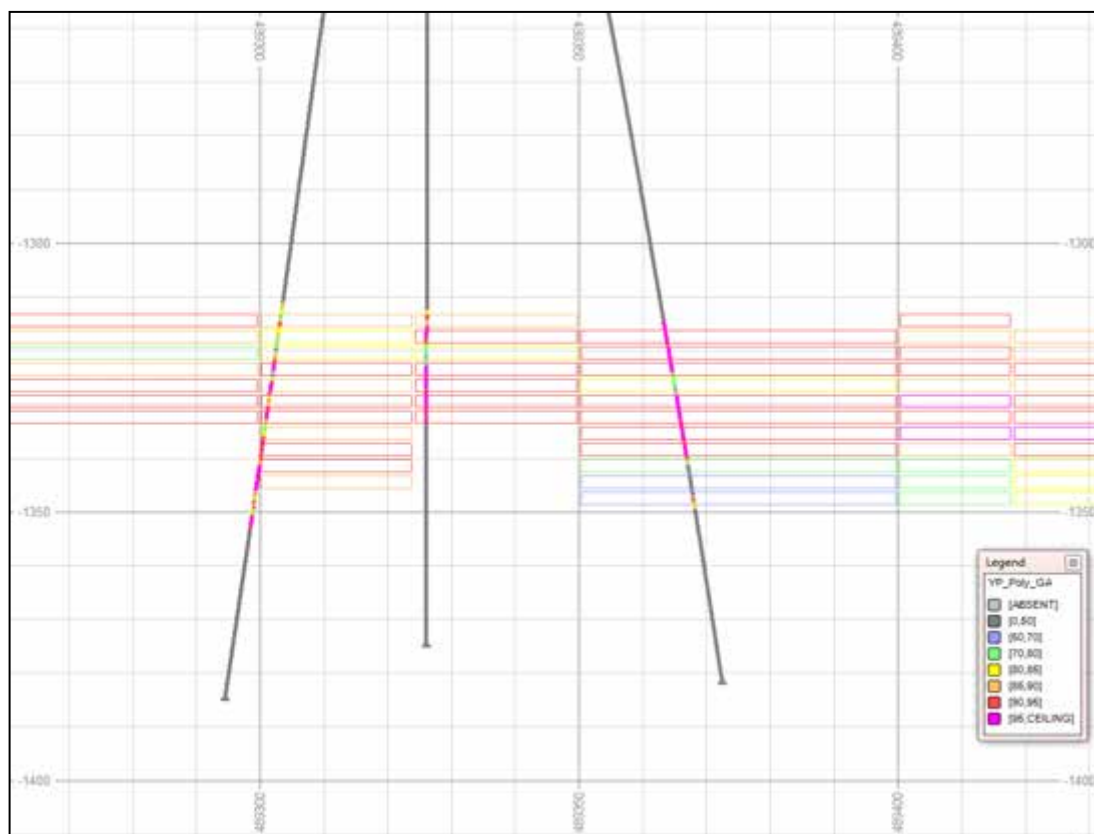
### 8.7.1 Introduction

SRK has undertaken a number of validation exercises on the resulting estimated model, to confirm that the modelled estimates represent the input sample data on both local and global scales, and to check that the estimate is not biased. Methods of validation used include:

- visual inspection of block grades in comparison with drillhole data (in cross section); and
- comparison of block model and sample mean grades.

### 8.7.2 Visual Validation

Visual validation provides a comparison of the interpolated block model on a local scale and in this case this showed a reasonable correlation, with local block estimates displaying similar grades to nearby drillholes. Figure 8-2 shows an example of the visual validation checks for the model, which highlight the overall block grades corresponding with the capped composite samples grades



**Figure 8-2: Visual validation of the block model against drillhole data**

### 8.7.3 Statistical Validation

A statistical validation of the interpolated block model has been undertaken and the results for percentage polyhalite are presented in Table 8-7. A comparison was made between the declustered capped composite samples and the OK grade estimate. In general, the declustered capped composite samples compare well with the OK block model estimates, with no sign of any bias therefore validating the global estimated grades. Based on the visual and statistical validation results, SRK accepted the grades in the block model.

**Table 8-7: Statistical validation of declustered sample statistics versus estimated block model statistics**

Declustered Statistics					Block Model Statistics				
	Number of Samples	Max (% polyhalite)	Mean (% polyhalite)	Std Dev	Number of Samples	Max (% polyhalite)	Mean (% polyhalite)	Std Dev	% Absolute Difference
Basin	74	100.00	81.95	21.07	48317	97.2	84.70	7.8	3.31
Shelf	252	99.76	86.74	12.19	80367	96.7	86.5	5.0	0.32

## 8.8 Mineral Resource Classification

### 8.8.1 Classification Code and Definitions

The Mineral Resource statement presented herein has been classified following the definitions and guidelines of the JORC Code (2012) from which the following definitions have been taken.

#### *Inferred Mineral Resources*

An 'Inferred Mineral Resource' is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which may be limited or of uncertain quality and reliability.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource.

The Inferred category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data are insufficient to allow the geological and/or grade continuity to be confidently interpreted. Commonly, it would be reasonable to expect that the majority of Inferred Mineral Resources would upgrade to Indicated Mineral Resources with continued exploration. However, due to the uncertainty of Inferred Mineral Resources, it should not be assumed that such upgrading will always occur.

#### *Indicated Mineral Resources*

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed at the 80% cut-off used.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource, but has a higher level of confidence than that applying to an Inferred Mineral Resource.

Mineralisation may be classified as an Indicated Mineral Resource when the nature, quality, amount and distribution of data are such as to allow confident interpretation of the geological framework and to assume continuity of mineralisation.

Confidence in the estimate is sufficient to allow the application of technical and economic parameters, and to enable an evaluation of economic viability.

### *Measured Mineral Resources*

A 'Measured Mineral Resource' is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.

Mineralisation may be classified as a Measured Mineral Resource when the nature, quality, amount and distribution of data are such as to leave no reasonable doubt, in the opinion of the Competent Person determining the Mineral Resource, that the tonnage and grade of the mineralisation can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability.

This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.

Confidence in the estimate is sufficient to allow the application of technical and economic parameters and to enable an evaluation of economic viability that has a greater degree of certainty than an evaluation based on an Indicated Mineral Resource.

## **8.8.2 Sirius Classification**

SRK has assigned portions of the Sirius Mineral Resource into the Indicated and Inferred categories. In determining this, the following factors were considered:

- the quality and quantity of data used in the estimation;
- the geological knowledge and understanding, focusing on geological and grade continuity at the 80% cut-off grade used;
- the quality of the geostatistics and interpolated block model; and
- SRK's experience with other deposits of similar style.

### *Quality of Data*

SRK considers that both Sirius and FWS have used industry best practice methodologies for the 2011-2013 drilling programme and for all associated basic Quality Assurance Protocols and Quality Control Measures to monitor the precision, accuracy and repeatability of data collected. The historical drillholes used have been validated by both FWS and SRK, and SRK is of the opinion that they are of a suitable quality and the data reliable to be used for estimation purposes.

The results from the QAQC programme show no evidence of material bias within the laboratory, in addition to no significant precision or accuracy issues, or material problems of sample swaps in the drilling programme.

SRK has been supplied with electronic copies of the drilling database and while the database is relatively simple, the systems used for data capture and storage appear to be satisfactory, with no observable errors when importing the data into mining software packages.



### *Quantity of Data*

Due to planning and permitting restrictions, the deposit has not been drilled on a regular grid. The current spacing between parent drillholes ranges from 1.1 to 5.7 km, and between daughter drillholes 30 to 60 m.

Bulk density measurements were undertaken by SRK. These results were used to calculate the density of the polyhalite for both seams as  $2.75 \text{ g/cm}^3$ .

### *Geological Knowledge and understanding /geological and grade continuity*

The geology of the polyhalite seams in the area of interest is complex and numerous faults have been identified using seismic survey interpretations. Although polyhalite has been shown to be widely distributed throughout the area, there are variations in seam thickness between mother holes and the associated deflections at a mining scale. However the SM11, SM11A and SM11B drillholes demonstrated good continuity over a short scale, and this has been taken into account whilst classifying the resource.

SRK has used all identified large scale faults to bound the resource area. Within the resource area there are also estimated to be 125 lower displacement faults (throw 15-60 m) of which 15 are traced and 110 untraced and in addition significantly more faults less with than 15 m throw which are sub-resolution.

SRK has relied on estimates of the hangingwall and footwall locations which are solely reliant on the drilling and analytical information available and could change with further infill and delineation drilling.

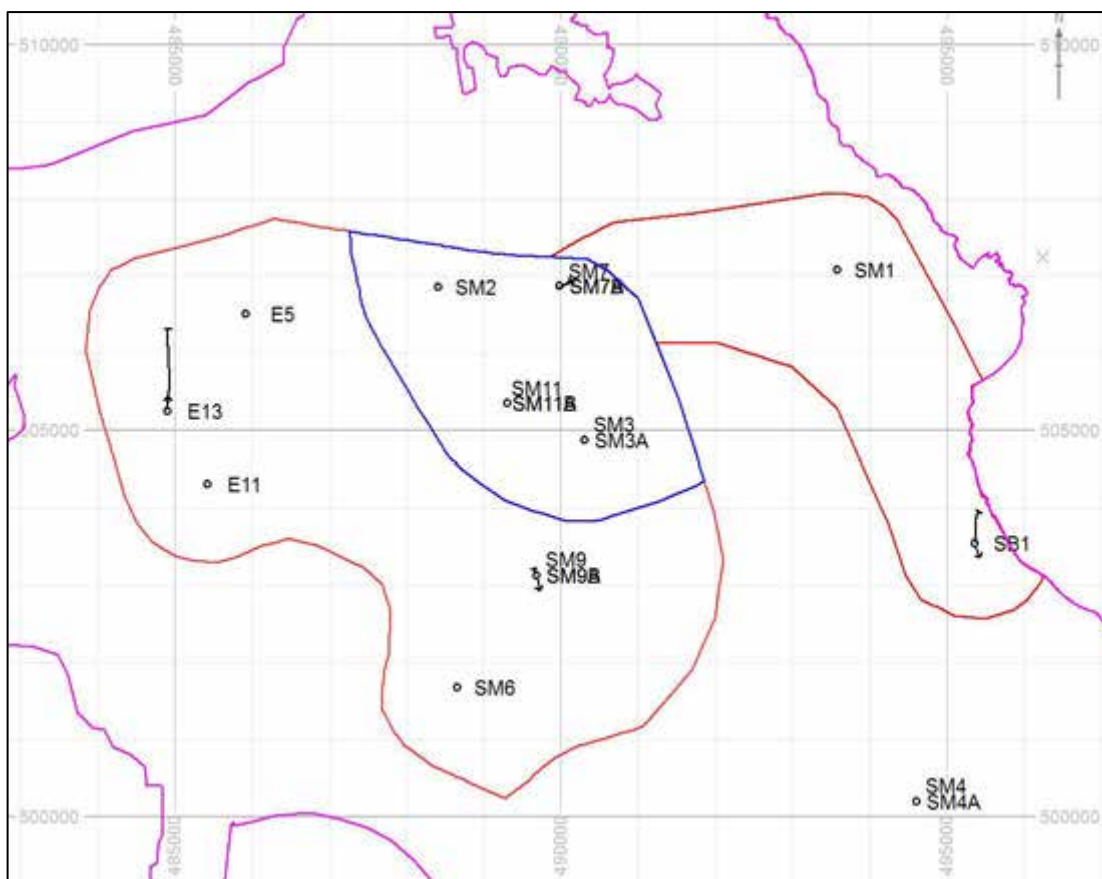
### *Quality of Geostatistics and Grade Interpolation*

The results of the geostatistical analysis produced variograms of poor quality. SRK notes this is due to the wide spaced nature of the drilling and limited number of drillholes. However, short scale structures could be modelled which reflect the short scale drilling between parent and daughter holes.

The resultant block model validates well when compared to the input sample data. The validation process was completed visually and statistically, and SRK considers the model to be as robust and unbiased as possible considering the data available.

### *Resource Extent*

SRK has defined areas within the Shelf and Basin seams where intersections of polyhalite have been intersected and where it considers it prudent to extend the reported resource to laterally. In general, this area, which is shown below (Figure 8-3), relates to an area of influence of approximately 1 km around each drillhole. All material shown to exhibit lateral continuity at a short scale (mining scale) has been classified as Indicated, whilst all other material has been classified as Inferred.



**Figure 8-3: Area of Indicated (Blue line) and Inferred (Red lines) category resources for the shelf and basin seams of the Project (the pink line indicates the current AOI)**

## 8.9 Mineral Resource Statement

In SRK's opinion, the Project has been explored and sampled using appropriate methodologies and at sufficient spacing to support the estimation of Indicated and Inferred Mineral Resources in accordance with the JORC Code. The fact that the Mineral Resource has potential to be exploited is evidenced by the results of the DFS.

The SRK Classified Mineral Resource Statement is shown in Table 8-8.

**Table 8-8: SRK Mineral Resource Statement**

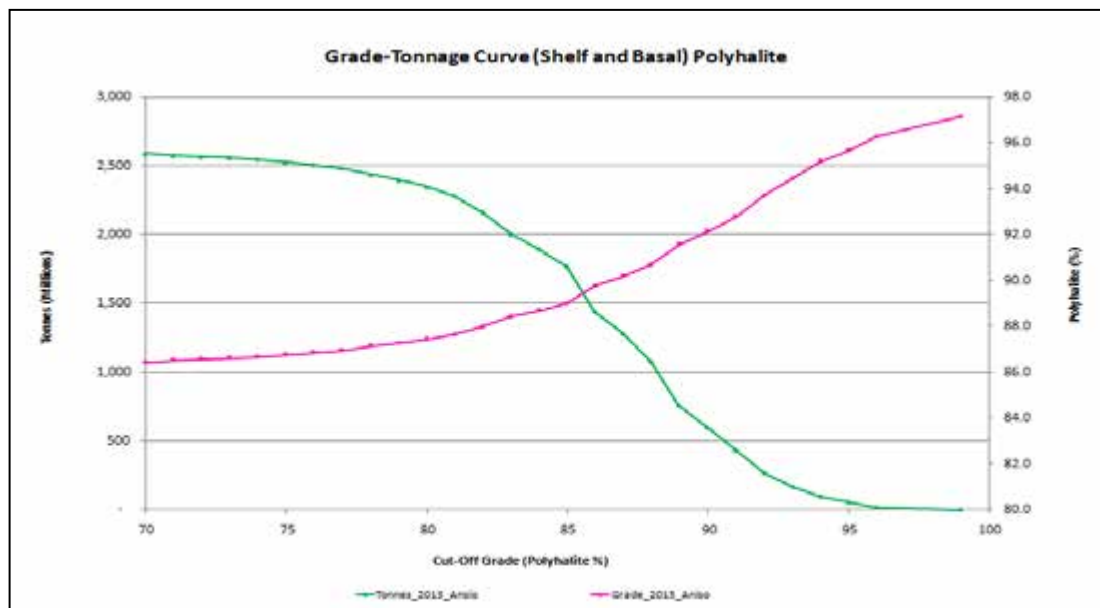
Seam	Resource Category	Mean Thickness (m)	Tonnage (Mt)	Density	Mean Polyhalite Grade (%)	Polyhalite Content (Mt)
Shelf	Indicated	27	820	<b>2.75</b>	87.3	710
Shelf	Inferred	11	840	<b>2.75</b>	85.7	720
Basin	Inferred	26	1,000	<b>2.75</b>	84.7	850
<b>All</b>	<b>Total</b>		<b>2,660</b>	<b>2.75</b>	<b>85.7</b>	<b>2,280</b>

The Mineral Resource Statement was produced in May 2013 based on information available at that time and is based on information compiled under the direction of Dr Mike Armitage C. Geol., C Eng, who is a Member of the Institute of Materials, Minerals and Mining which is a 'Recognised Overseas Professional Organisation' (ROPO) included in a list promulgated by ASX from time to time.

Dr Armitage is a full time employee of SRK and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined by the JORC Code. Dr Armitage is also the Competent Person for the Ore Reserve statement given below.

SRK has produced a Grade-Tonnage Curve for polyhalite for the Indicated and Inferred Mineral Resources, which is shown in Figure 8-4.

There has been no additional drilling completed since the above Mineral Resource estimate was produced and in SRK's opinion this therefore remains valid as of the date of this CPR.



**Figure 8-4: Grade-Tonnage Curve for combined Shelf and Basin Indicated and Inferred Mineral Resource**

## 8.10 Ore Reserves

As with its Mineral Resource statement, SRK's Ore Reserve statement has been reported using the terminology and guidelines proposed in the JORC Code. Specifically, it comprises the tonnage of mineralisation reported above as an Indicated Mineral Resource which is planned to be mined, as reported in the following section of this CPR, and then transported to Teesside and is presented inclusive of losses and dilution incurred during mining and includes the mineralisation in the shaft pillar and that would be mined on final retreat from the mining areas. Notably, this is a sub-set of the Indicated Mineral Resource presented above and not additive to this.

The definition of an Ore Reserve as defined by the JORC Code is *"the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at the Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified"*

Further the JORC Code only allows the reporting of Probable Reserves from Mineral Resources classed as Indicated regardless of whether or not the completed work is at a Pre-Feasibility Study or Feasibility Study level and therefore in this case the entire Ore Reserve has been classed as Probable.

SRK's Ore Reserve Statement for the Project is presented below. The economic viability of exploiting this has been confirmed by the DFS and also by the valuation presented later in this report. Notably, this remains the case if the financial analysis is based on the mining of this Ore Reserve only; that is, making the assumption that no further Inferred Mineral Resources will be upgraded to Indicated status and assuming no further Mineral Resources are delineated.

**Table 8-9: SRK Ore Reserve Statement**

Seam	Reserve Category	Mean Thickness (m)	Tonnage (Mt)	Density	Mean Polyhalite Grade (%)	Polyhalite Content (Mt)
Shelf	Probable	25	280.2	2.75	88.4	247.7

SRK can confirm that no Inferred Mineral Resources have been converted to Ore Reserves and notes that the Mineral Resource statement reported above is inclusive of, and therefore includes, those Mineral Resources used to generate the Ore Reserve.

The large difference between SRK's Mineral Resource statement and its Ore Reserve statement is partly a function of the relatively low mining recovery inherent in the mining method employed and partly a function of the fact that SRK has limited the Ore Reserve statement to the Indicated Mineral Resource and therefore the Shelf Seam only.

As commented above, the Ore Reserve also incorporates losses and dilution expected to be incurred during mining. Notably, some 15% of the Mineral Resource comprises material not considered for conversion to Ore Reserves as it is either too thin, and in some cases too thick, for the mining method envisaged or is located in areas that might not justify the development, or is below the 81% polyhalite cut-off applied over mineable distances, while a further 60% of the remainder remains in mining pillars and in pillars around drillholes.

Notwithstanding the above, SRK considers that there is a good likelihood that a proportion of the currently reported Inferred Mineral Resource will be upgraded to the Indicated Mineral Resource and Ore Reserve stratus once the mine has been established and the polyhalite horizons have been accessed and that additional Mineral Resources and Ore Reserves will be generated following ongoing exploration and assessment during the mine life.

## 9 MINING

### 9.1 Introduction

Sirius plans to access the polyhalite via to two vertical mine shafts and to mine polyhalite at rates of 10 Mtpa. Sirius also plans to design and partially equip the mine such that mining rates of up to 20 Mtpa are achievable with additional capital investment.

The polyhalite will be extracted by mechanical means using a room and pillar layout, and by drill and blast stoping methods where the polyhalite seam is thickest.

Polyhalite will be transported by belt conveyors from production zones to loading stations at the -1520 m Level before being loaded into skips and hoisted some 1160 m in the Production Shaft. Skips will discharge onto conveyors on -360 m Level with mineral then transported in the Mineral Transport System (MTS). Belt conveyors will transport polyhalite to the processing plant and materials handling facility located at Teesside where it will be granulated and stored before sale and shipping.

While some additional work has been undertaken since the completion of the DFS, notably in relation to ventilation and shaft bottom infrastructure requirements, this work is ongoing and so the mining infrastructure and production plans as presented here remain as presented in the DFS and inform the financial model presented in Section 13.

## **9.2 Access**

### **9.2.1 Introduction**

Two vertical mine access shafts are planned to be developed to access the polyhalite located at the Doves Nest site. The two shafts, which are designed 100 m apart, are identified as the Production Shaft, and the Service Shaft. Both shafts will have a finished diameter of 6.75 m.

Access and egress for personnel and materials are to be via the 1,565 m deep Service Shaft while the polyhalite will be hoisted via the 1,600 m deep Production Shaft. The mine will be ventilated with air entering the mine via the Service Shaft and being exhausted via the Production shaft. Surface elevation at the proposed shaft site is 200.7 m AOD.

A shaft protection pillar of 800 m diameter around the shaft barrel will be established in which no production mining will be allowed. Essential mine infrastructure located in the pillar at the shaft bottom development area will commence at -1520 Level (-1,314.64 m AOD, or -1520 m below shaft collar level) from which mine working areas designed beyond the boundary of the shaft protection pillar will be accessed.

Sirius has confirmed that AMC is the preferred contractor to develop the shafts and associated infrastructure for the mine. AMC is a consortium consisting of four named partners:

- Deilmann Haniel GmbH;
- Thyssen Schachtbau, GmbH;
- J.S. Redpath Ltd; and
- Thyssen Mining Construction of Canada Ltd.

Each of the above companies has significant experience of developing shafts for underground mines and as a consortium has delivered shafts for other mining projects, including Potash, around the world.

### 9.2.2 Shaft Arrangements

In Phase 1 (10 Mtpa) in addition to the main Production and Services shafts, a number of supporting shafts will be constructed near surface.

Excavations directly associated with the Service Shaft (downcast and fresh air intake shaft) will comprise:

- an Intake Ventilation Shaft which will direct air into the downcast shaft via a connecting drift between Service Shaft stub and Intake Ventilation Shaft; and
- a Services Drift from surface to the collar of the Service Shaft at -45 Level.

Excavations directly associated with the Production Shaft will comprise:

- a TBM (Tunnel Boring Machine) Shaft to enable the positioning, construction and launch of the TBM that will bore the MTS tunnel. On commissioning, the TBM shaft will direct return air out of the mine.
- a ventilation connection between Production Shaft stub and TBM Shaft; and
- infrastructure on -360 Level for skip unloading, maintenance facilities and connection to the MTS tunnel.

In Phase 2 (20 Mtpa) a new shaft (7.8 m finished size) will be sunk below the TBM shaft. This will be equipped for mineral hoisting in addition to the Production shaft, and will upcast the mine's return air. The existing Production and Service shafts will both downcast air.

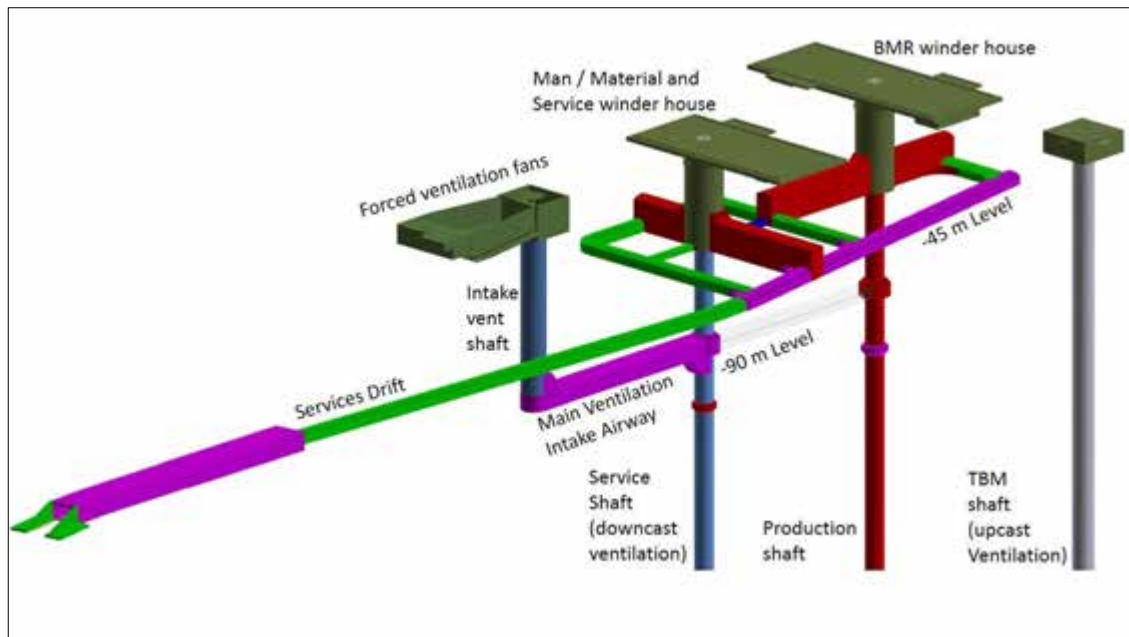
### 9.2.3 Shaft Facilities

#### *Surface and near surface infrastructure*

The planning permission for the mine stipulates that all surface structures are to be less than 11.7 m in height above the ground level. As a result, all surface infrastructure will be located in specially constructed subterranean chambers to house the necessary equipment.

Permanent arrangements on surface, as shown below, will consist of:

- an access drift from surface to the -45 Level;
- a Head Frame chamber from surface to the -45 Level for both shafts;
- a sunken headframe including all the safety devices and an airlock arrangement;
- a shaft collar to support the headframes;
- surface mounted winders; and
- forcing ventilation fans atop the Intake ventilation shaft.



**Figure 9-1: General Surface Arrangements**

The -45 Level will consist of interconnections between the access drift and both shafts and the necessary infrastructure to facilitate installation and replacement of skips, ropes and other shaft equipment, together with a secondary means of egress from the mine.

The -90 Level will be the ventilation connection between the ventilation intake shaft and the main shafts.

The surface chambers will be located within protective excavations and, where applicable, behind a grout curtain. In addition these structures are lined to prevent water ingress from the shallow aquifers present at the Doves Nest site.

The winding house chambers will be excavated to a depth of 9m and the shaft collars are located within these extents. The main shafts will consist of further excavation at an 18m diameter to house the submerged headframe to a depth of -45 m below ground level (bgl). At this point the diameter reduces to 6.75 m for the remainder of the sink. The shaft headgears will be located below the winding chambers and extend to the -45 mbgl.

The intake ventilation shaft chamber will be excavated to -10mbgl and the collar will extend to -14mbgl.

The Doves Nest shaft collar is constructed to include the ventilation bell and will extend to a depth of -6 mbgl.

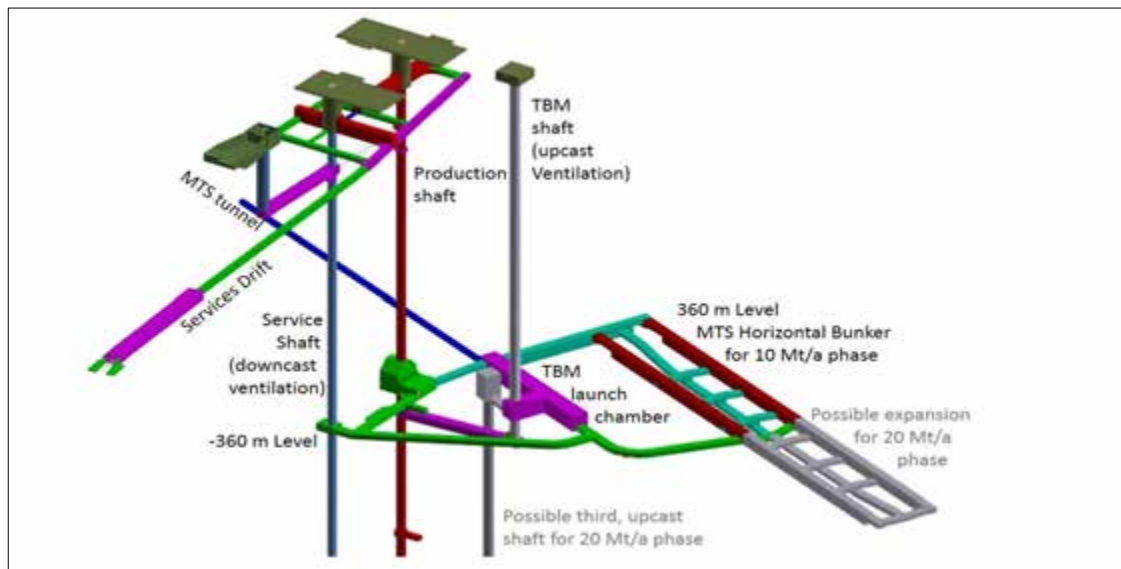
General arrangement layouts have been supplied by AMC for the shaft headgears and bank level infrastructure respectively. The material take-offs and budget cost elements for the headgear and subsurface infrastructure were developed through a number of iterations and have been firmed up to a high level of accuracy.

#### *-360 Level Infrastructure and connection MTS*

The -360 level connects the main shafts with the MTS tunnels and the TBM shaft.

Permanent arrangements on the 360 Level, shown below, will include:

- an interconnection between the shafts;
- an interconnection to the MTS drive/maintenance arrangement;
- mineral transfer off-loading infrastructure including skip discharge bins, mineral surge bins; and
- the return airway between the production shaft and the TBM shaft at approximately -390 mbgl.



**Figure 9-2: 360 Level General Arrangements**

In addition to the interconnection with the MTS infrastructure the production and services shafts include reinforced shaft collar with toe-in, foundations and plinths for the steel structural work as part of the concrete floor plinths running throughout the level.

General arrangement layouts have been developed by AMC for the material transfer infrastructure 360 level installations. The material take-offs and budget cost elements for the shafts to the 360 level and the shaft take off headings were developed through a number of iterations and have been firmed up to a high level of accuracy.

#### *Shaft Bottom*

As part of the shaft sinking arrangements, AMC has allowed for the development of:

- insets above the -1,520 Level for later development from the production level to serve as the return airways from the workings;
- insets on the -1,520 Level to house skip loading and mineral transfer arrangements, to connect to the service shaft for both ventilation and as a future means of emergency egress; and
- the pit bottom (sump) arrangement for dealing with water pumping, spillage handling and securing of guide ropes.

The lateral development in the shaft bottom area is allowed for as part of the shaft bottom development as is dealt with in the mining section.



*SRK comments*

The surface infrastructure and shaft installations were laid out and conceptualised by Worely Parsons (WPRSA), the appointed shaft development consultant. These layouts were further developed by AMC who have developed budget pricing for the shaft development and equipping to a high degree of accuracy. AMC has used its experience in developing shafts in similar ground to ensure that, where possible, the appropriate design and construction methodologies are used. SRK has assessed the shaft bottom infrastructure as designed at January 2017 from a geotechnical perspective and has confirmed that no material deformations or long term creep is indicated which could affect the shaft for the layout as planned.

Planning constraints have been imposed on the mine due to its location, which require the use of innovative engineering solutions to ensure compliance. Examples of this would be the submerged headframes or the MTS tunnel. Whilst in themselves these are not unique constructions, the need to combine them on one site introduces complexity into the construction process. The plan to combine the surface prep-works and shaft sinking into a single work packet mitigates this complexity and has enabled AMC to develop an integrated development plan and schedule for the construction of the mine infrastructure.

Provision has been made for the detailed design phase to be completed as part of the pre-works schedule. As with all major construction projects, there is a risk that changes may be required to the design, schedule and, ultimately, the construction costs as the detailed design stage progresses into construction and the ideas are analysed and tested. AMC has utilised the available data and highlighted areas where more information is required. Predominantly this information relates to the portions of the shaft that are associated with the Bunter Sandstone and the Transition Zone.

A further drillhole, SM14B, plus deflections has been planned and costed which will add significantly to the information available and will allow for more detailed estimates to be developed. AMC has assisted in developing the requirements of this drill programme which will take place as part of the early works. This will allow AMC to coordinate with the drilling contractor and be involved in the collection of the data. The timing of this hole will be such that it will provide the necessary information prior to the completion of design phase.

AMC is satisfied that the areas of concern are sufficiently well understood at this phase to allow for the development of appropriate designs to mitigate the anticipated conditions. The design is sufficiently conservative and should cover most likely eventualities that could be encountered. So, whilst there are scenarios which could cause an increase in cost and/or schedule equally the drilling of SM14B could indicate that the opportunity exists to further improve the costs and schedule in the event that the conditions are found to be less challenging.

SRK has included a sensitivity analysis in its financial analysis presented later in this report which shows the potential impact on the economics of the project of delays in construction.

**9.2.4 Approach to Shaft Sinking**

Shaft sinking is to be carried out by the preferred specialist shaft sinking contractor, AMC, utilising conventional drill and blast mining methods. The preferred specialist shaft sinker will develop all the shafts relating to the project including the MTS shafts located at Doves Nest and Lockwood Beck. Each shaft will be developed as an individual work packet and work will

be carried out independently of each other.

#### *Production and Ventilation shafts*

AMC will carry out the pre-sinking development including the surface site preparation for sinking and the subsurface chambers for the mine infrastructure. The current design assumes that a diaphragm wall will be built to a depth of 120 mbgl to control water related to the near surface aquifers. This will be to a diameter of 6.75 m. An additional wall will be built at a diameter of 15 m to a depth of 45 mbgl to allow for the construction of the submerged headframes. The shaft collar will be engineered as part of the diaphragm wall construction.

Upon completion of the pre-sink a five deck sinking platform will be installed in each shaft and the main sink will commence. Cover drilling activities ahead of sinking will take place every 36 m of sink to guard against water, gas or other intrusions.

Insets will be developed for the -45 m and -360 m Levels and pumping cubbies will be developed at regular intervals down the shafts.

Design information for the shafts was obtained from the partial shaft borehole information and from the on-site experience of developing and operating the shafts at the nearby Boulby mine. The strata is sufficiently similar to Boulby to allow for reasonable assumptions to be made relating to the likely impact of the strata on sinking rate and the degree of engineering required to overcome the issues. The planned drill programme to be undertaken as part of the early works will provide the necessary information to allow for detailed designs to be developed.

In order to develop through the Bunter Sandstone, a combination of pre-grouting and a combined concrete and tubbing liner with water seals at the upper and lower extents of the zone is planned to seal the shaft and prevent water inflows during normal operations. AMC has proposed an engineering solution for the tubbing area and this is factored into the sinking time and cost estimates.

#### *Ventilation, TBM and Lockwood Beck Shafts*

At the Doves Nest site, the main shafts and TBM shaft will have priority for ground preparation, including cementation and pre-grouting works. Once the main shafts and TBM shaft are complete the ventilation shaft pre-works will commence. The Lockwood Beck shaft will be developed as a separate package.

Shaft development for each shaft will consist of a 9 m box cut and shaft collar installation. In the case of the ventilation shaft this will be included as part of the fan housing sub-surface development. Lateral Development

The -45 Level will be developed using traditional drill and blast mining techniques and front end loaders to muck the faces. This will commence with establishment of a portal and the development of the services drift. The -45 Level will develop from the drift and development and will therefore be developed concurrently with shaft sinking operations. The shaft sinkers will develop insets from the shafts during the development phase to allow for breakthrough from the development without impeding the shaft development.

The -360 Level stations will be developed from the shafts as part of the shaft development.

The shaft stations will be connected to the TBM shafts by development from the TBM launch chamber.

### 9.2.5 Shaft equipping

Shaft equipping is to be carried out by AMC. Shaft development is timed such that the production shaft will be completed and equipped prior to the services shaft to allow for the development of the shaft bottom infrastructure for using the production shaft. Completion of the shaft equipping is planned to coincide with the completion of the MTS. At this point the mine will be capable of producing up to 10 Mtpa. Prior to equipping taking place, there will be a period following the completion of shaft sinking activities where the shaft bottom area will be developed utilising roadheaders.

The equipping of the main shafts is forecast to take a period of 10 months and will include the installation of the rope guides and the necessary services infrastructure to allow for mining operations to commence. This will include the water supply column, the return water column, power reticulation, communication and data systems and any necessary ventilation infrastructure.

AMC has proposed installing the final hoisting configuration early in the project and using these for the sinking phase rather than using temporary sinking equipment. This reduces the complexity of the fit out and streamlines the development of the shaft and surface infrastructure which improves the project schedule and cash flow.

#### *Service Shaft*

The Service shaft will be equipped with a twin-deck men and materials conveyance and a twin-deck service conveyance. The planned men and materials conveyance has a rated 20t capacity for equipment and a maximum capacity of 180 persons and will be driven by a surface mounted, double drum winder linked to the cage and a counterweight. The conveyance will not be able to transport the largest equipment, such as the continuous miners (CMs), in one piece, however, it is sized to accommodate the largest equipment sub-assemblies. This will result in some equipment assembly being required underground, however the dimensions of the conveyance allow this to be kept to a minimum.

The service cage is to provide support/ service functions and in the event that the main winder is not operational. It is driven by a surface mounted, single drum winder.

The shaft is to be equipped with rope guides for the conveyances to run in and these will be tensioned at the shaft bottom. The rope guides are appropriate for this depth of shaft and the anticipated workload of the shaft and will allow for the equipping cycle to be completed much faster.

The main cage will operate from the -45, -360 and -1,520 Levels. Conveyance and rope changing facilities will be provided on the -45 m Level. Men and materials will be loaded on the -45 Level having first been transported down the service drift by transporters. It is planned that materials will be containerised at the off-site stores facility, to be transported from the stores and then underground on flat bed trailers. These will be sized to allow them to be transported in the conveyance.

A material handling study has been done and there is sufficient capacity in the service shaft to

allow for the anticipated men and materials movements.

The service shaft is a force ventilated downcast shaft and forms the main ventilation intake into the mine. It will be equipped with the necessary airlocks to facilitate the required ventilation flow.

#### *Production Shaft*

During Phase 1 operations, the production shaft will be equipped with four, 47 t skips in rope guides. The winders are two surface mounted Blair Multi-Rope (BMR) winders, each winding a pair of skips at a rate of 6.7 Mtpa. The total installed shaft production capacity will be 13.4 Mtpa. In Phase 2 the increase to 20 Mtpa will be achieved by installing an additional sub-surface mounted BMR winder with two skips into the ventilation shaft.

The skips are identical bottom discharge skips with the capacity to install inspection cages underneath from which to conduct shaft inspections. The production shaft is configured with a service ramp to shaft bottom to allow for cleaning of spillage and access into the shaft bottom area.

The rope guides will be clamped at shaft bottom and hydraulically tensioned via tensioners installed in the headgear and equipped with load cell arrangements to ensure the correct operating tensions. The skips will be located and will travel within a specific quadrant in the shaft.

The winders will transport mineral from the -1,520 to the -360 Level for offloading into the MTS. Skips and rope changes will be carried out on the -45 Level.

The production shaft is the upcast shaft and will form the main ventilation return for the mine. During Phase 2 operations an additional ventilation shaft is required which will form the main return and the production shaft will become an additional intake.

#### *Ancillary Shafts*

The ventilation, TBM and Lockwood Beck shafts will be equipped with temporary infrastructure during sinking and tunnel operations to allow for the necessary equipment and materials to be moved in and out of the mine.

The permanent infrastructure in these shafts will be kept to a minimum and be as follows:

- ventilation shaft: main fan housings;
- TBM shaft: ventilation évasé, permanent shaft steelwork for the emergency cage and winding, and 66kV power supply reticulation for MTS from the Doves Nest supply; and
- Lockwood Beck shaft: arrangement for the temporary installation of an escape cage if required.

#### *SRK Comments*

The proposed shaft infrastructure is applicable for the duty and service required and the production rates for the selected winders are well within operating norms and depths for such equipment.

The shaft equipping schedule has been developed by AMC and is to an acceptable degree of confidence. While the use of rope guides in conveyances introduces the risk of skips moving

laterally as they pass each other which can also create ventilation bottlenecks in the shaft, Sirius understands this concern and SRK has recommended the carrying out of specific modelling work at the detailed design phase to assess this.

## 9.2.6 Shaft Geotechnics

### *Introduction*

While the mine development infrastructure and facilities consisting of the shafts and systems necessary to support underground mining of polyhalite has been designed by TWP with input from Arup, the geology and geotechnical parameters are based on the factual reports provided by FWS.

The design of the shafts has been based on applying proven solutions to suit the specific ground conditions based on case studies and the Company's in-house experience of Boulby. The large cavern designs have been guided by published information on comparable projects. SRK has carried out a stability analysis of the shaft pillar at the mining depth taking into consideration the layout of the shaft bottom infrastructure as planned at January 2017. The analysis indicates that no material adverse deformations are associated with the proposed layout based on current data.

### *Service and Production Shaft Geotechnical Characteristics*

The FWS factual reports allow a geotechnical specialist to qualitatively characterise the rock mass conditions. Interpretation of the rock mass quality, structural and hydrogeological conditions were not, however, carried out by FWS.

A good amount of investigation has been carried out for the mine head infrastructure and a pilot hole has been drilled in the vicinity of each shaft, SM11 Service Shaft, SM14 (incomplete) at the Production Shaft.

SRK's structural interpretation identified a possible fault in the vicinity of the shaft locations. This interpreted fault was assigned a moderate confidence (confidence decreases towards the southwest, becoming low as the shaft location is approached). While the interpreted fault has a maximum throw of 60 m at the Kirkham Abbey Formation, which is approximately 100m below the mining horizon, this is likely to decrease both to the southeast and upwards to the mining horizon and shaft. The presence or absence of this interpreted fault has not yet been confirmed by the SM11 holes or the partial drilling of SM14.

Further clarification will be obtained after completion of the proposed SM14B and its deflection holes. The drilling, testing and interpretation of SM14B and its deflections have been included in the cost estimates given in Section 13 of this report. These are planned to be drilled using triple tube coring assemblies which SRK fully endorses.

If the interpreted fault referred to above is confirmed during drilling of the SM14B borehole then this may require modifications to the design of the shaft or shaft bottom infrastructure. AMC has prepared the sinking estimates for costs and schedule based on the information provided to date. Contingency costs have been determined based on the information available from the boreholes drilled to date and the experience of AMC in negotiating the ground conditions likely to be encountered. Information derived from the SM14B holes will be incorporated into the design as part of the detailed engineering process.

### *Service Shaft*

Pilot hole SM11 for the South Service Shaft was open hole drilled from surface to near the top of the evaporite sequence at a depth of 1236 mbgl (1037m BOD). Wireline logging by Schlumberger captured geotechnical data from 155.2 m to 1160.6 mbgl. Coring from 1236 m to 1577.55 mbgl (1374.45 m BOD) provided good geotechnical information for the shaft design with exception of the Carnallitic Marl, from which only disturbed samples were recovered. Undisturbed samples from the Carnallitic Marl by triple tube drilling would better define parameters for the sinking of the shaft and the liner design. In the absence of undisturbed samples, the shaft contractor will rely on published information and the Company's in-house experience of shaft liner design in the marl from Boulby. Deflection holes SM11a and SM11b were cored through the entire polyhalite orebody which provides good geological and geotechnical information on the polyhalite structure.

### *Production Shaft*

Pilot hole SM14 for the North Production Shaft was to be fully cored from surface to the final shaft depth at 1,594 mbgl (1,395 m BOD) to provide detailed geotechnical and hydrogeological data for the full clastic sequence including the main aquifer of the Sherwood Sandstone and the evaporite sequence, including the Carnallite Marl and Boulby Halite units which are known to present challenges during shaft sinking. This was to be the only site specific core data to be collected and tested.

SM14 did not, however, reach the Carnallitic Marl. It encountered problems at 1078.56 mbgl (875.46 m BOD) in the Transition Beds of the Roxby Formation, when the drill string became stuck and the hole was abandoned.

Drilling of SM14 was re-established via a deflection higher up in the hole at 804 mbgl. This however also became stuck in the Lower Bunter Shales, 70 m below the SM14 obstruction. The hole was abandoned at a depth of 1149 mbgl (945.9 m BOD) some 350 m short of the intended shaft depth. The reports indicated bottom-hole assembly twist off, complete loss of drilling fluid and collapse of cement into the hole from plugs used to seal the zones of fluid losses (at 700 m to 787 mbgl in the Rot Salt and at 1110 m to 1138 mbgl Lower Bunter Shales).

Following an inspection of the core and the driller's log, SRK interprets the problem to be related to the presence of closely spaced subvertical open joints present in the Eskdale Group Transition Beds causing flush losses and a stuck drill string. Similar open jointed conditions had been encountered in other SM holes, but not such that caused the loss of the holes. A review of the chips obtained from SM14a did not indicate the presence of a fault.

### *Shaft Pillar*

A shaft pillar of 400m radius has been defined based on the geotechnical data available from SM11. The integrity of the pillar and the stability of the shaft and the arrangement of the service excavations in the polyhalite, anhydrite and halite have been assessed by 3D numerical modelling. The Company's experience gained from Boulby has been incorporated

into the design of the shaft bottom infrastructure. The majority of the service excavations will be located in headings developed by continuous miners in the polyhalite orebody. The surge bins and vertical bunker will be excavated using raise bore methods. The infrastructure caverns will be supported by bolting and reinforced shotcrete as required by their dimensions and lithologies and function.

#### *SRK Comments*

The shaft sinking information is generally well thought through and the sequencing of events is logical and the level of design is appropriate based on the information available.

Areas of likely poor ground have been identified and appropriate mitigation applied. The development rate through poor ground and through the tubing zone of 1 m/day appear reasonable to SRK, as do the pre-sink rates applied to all shafts. The assumed sinking rate for good ground conditions is 2.25 m/day and the overall sinking rate and the time allowed for shaft development is appropriate. This is confirmed by the schedule developed by AMC.

The design of the shaft liner considers the geological conditions from surface to bottom and identifies the problematic zones that pose geotechnical risks to the liner. Sirius's knowledge and in-house experience of Boulby and AMC's experience of sinking shafts through soft ground have been utilised to develop a liner methodology that is appropriate for the anticipated conditions.

As SM14 was terminated before entering the evaporite sequence a 162 m section between 875 m BOD (SM14 termination) and 1037 m BOD (SM11 start of coring) has yet to be assessed geotechnically and hydrogeologically in the vicinity of the Production Shaft. In addition the Carnallite Marl and Boulby Halite require sampling and testing. These gaps have been noted by SRK and AMC and the information will be captured during the drilling of the planned SM14B borehole as part of the early works.

## **9.2.7 Shaft Hydrology**

### *Introduction*

Water supply to the underground operation will be via pipes in the service shaft, which will be regulated by a valve mounted on the surface. Water from the surface will report to a storage tank on the 1,520 Level, which will be level-controlled. This tank will be sized to ensure there is sufficient water available to support the operation for 24 hours in the event of a water supply failure.

Water seepage in to the underground workings, from the seepage rings, from mining sections, the shaft bottom and return air precipitation, will report to the mine return water (MRW) reservoir on the 1520 level. It will then be pumped in a single raise to a second reservoir on the 360 Level and from there discharged via the pipeline in the MTS tunnel to the Wilton site.

### *Hydrogeological Setting*

Development of the shafts will entail passing through a large number of geological formations with distinct and varied groundwater characteristics, some of which will present challenges for the sinking operation. In particular, there are sandstone aquifers within the top 110 m with elevated permeability and storage, such as the Moor Grit Formation, that could result in significant impacts both on the surface excavations required for the shaft infrastructure at

Dove's Nest and on a local nature reserve and neighbouring communities. This has been identified and in the current design, the use of grout curtains and diaphragm walls is proposed around the subsurface excavations to prevent the draining of these aquifers as a result of mining operations.

Below 110 m to a depth of 804 mbgl, the formations including mudstone, sandstone, shale, anhydrite and Röt Salt at the base are generally much tighter and it is likely that conventional shaft sinking operations should be adequate for most ground conditions in this section.

Directly beneath the Röt Salt is some 240 m of Bunter Sandstone (part of the Sherwood Sandstone Group) and whilst this is a major aquifer in the region, at the depths encountered at Dove's Nest this formation contains highly saline water (denoting long residence time) and appears to possess a lower overall matrix permeability. Nevertheless, experience at Boulby has demonstrated that particular attention has to be paid to the methods employed for shaft sinking through this rock-type. It is proposed to use grouting whilst developing to prevent water inrush. This will be reinforced with tubbing and water seals to minimise the water that enters the workings through this region.

The Bunter Sandstone is underlain by 92 m of transition beds, where the permeability is considered to decrease on the grounds that this sequence is increasingly dominated by claystones and siltstones with lesser amounts of sandstone. However, there are various sources of evidence that suggest hydraulic pathways persist within this sequence including geophysics and core logging results from holes drilled at Dove's Nest and isotope studies conducted on mine water from Boulby. In addition, there has been a history of drilling mud loss in the transition beds, particularly so in SM2 where there was total loss at 947 m measured depth (MD) and again at 1162 m MD, in SM7 where there was significant loss at 1133 m MD, in SM11 with problems at 1150 m MD associated with dropping pressures and most recently in SM14 at 1079 m MD in the main hole and 1149 m MD in the deflected hole when fluid and drill string loss culminated in the hole being abandoned some 350 m short of the intended shaft depth.

As commented earlier in this report, SRK recently undertook an inspection of the core in SM14 and the formation micro-imager (FMI) logs from SM11 and SM14 and came to the conclusion that these losses are very likely related to the presence of closely spaced sub-vertical open joint sets that are present in the Eskdale Group Transition Beds. The mud losses witnessed in holes across the area of interest would imply that this phenomenon is quite pervasive and not necessarily attributable to a single, discrete geological structure.

Below the transition beds, the formation is dominated by low permeability marls and evaporates and, consequently groundwater movement will very likely be negligible.

#### *Water Management during Construction and Operation*

An order of magnitude investigation of technologies to seal the shaft and surface structures during excavation and the operational life of mine has been undertaken to support the DFS. This investigation has determined that grouting is preferred over ground freezing because this method is more effective in fractured hard-rock settings and because it is appreciably more cost-effective.



### *Surface Excavations*

The box-cuts for surface excavations will be protected from water ingress through the construction of a grout cut-off wall around the perimeter. Nominally, this cut-off wall will be installed to a depth of 8.3 m, but where the excavation is greater than 8 m deep the grout will be injected using percussion boreholes to 5 m below the maximum extent of the structure. If subsequent hydrogeological testing of the area sealed-off by the grout (contained area) still shows appreciable inflows, then the design includes an option to install a thick grout blanket at the base of the excavation.

### *Shaft Construction*

According to the shaft contractor's design proposed currently, the shafts will be sunk in two cementation phases:

Phase 1. Installation of a diaphragm wall from surface to a depth of 120m, around the periphery of the future shaft to isolate the excavation from the shallow aquifer sequences described above. This grout curtain will be keyed 6m in to the low permeability Whitby Mudstone Formation to create a hydraulic seal at the base.

The Service Shaft will be accessed using a Service Drift at the 45m Level. The present DFS design assumes that groundwater control of this decline will also be achieved using pre-cementation grouting techniques, although grouting from cover drilling boreholes is also considered valid.

Deployment of a pre-cementation grouting approach should prevent any impacts to the surface excavations at Dove's Nest and on a local nature reserve and neighbouring communities.

Phase 2. Grouting during shaft sinking: the design assumes that only the Sherwood Sandstone will be subject to special grouting measures using two grout rings. This decision was based on experience gained at Boulby where such measures were not required between the Ravenscar and Bunter Sandstone aquifers. Cover drilling will, however, be practiced all the way down the shaft and contingency is made for grouting of high-flowing features should they be encountered outside of the designated aquifer zone.

Grouting through the Sherwood Sandstone will consist of outer and inner grout rings respectively with diameters of 7.65 m and 4.95 m. The outer ring will consist of 20 grout holes, plus a contingency of 20 % for a higher than expected grout take. These will be grouted using a combination of CEM III and ultrafine cement and raked 5° and spun 10° clockwise to address the array of sub-vertical discontinuities that exist in this formation. The inner grout ring shall consist of 10 grout holes, plus a contingency of 60 % for a higher than expected grout take. These will be grouted using low-viscosity chemical acrylamide and will be raked

3 ° and spun 30 ° counter-clockwise.

To cover the Sherwood Sandstone, a minimum of 9 such double-ring grout covers will be required; the depth of each cover will be 42 m with an overlap of 6.0 m.

The contractor design does not presently include similar grouting measures for the Transition Zone, but depending on the results of testing planned for Borehole SM14B, the design may be modified to extend a double ring grout cover to the base of this zone.

The shaft sinking phase also incorporates a design for an emergency dewatering system to counter the risk of intercepting a high-flowing fissure, or aquifer during excavation. This system includes dewatering pumps capable of raising 40 L/s in a series of 290 m lifts up the shaft. The pumps and tanks associated with each lift will be installed in excavated cubbies at pre-determined locations in the shaft barrel. In addition, the design factors-in kibbles, which can be used to transport water up the shaft; the present design assumes that the kibble can deliver a further 19 L/s to the surface.

The main hydrological risks flagged for the shaft revolve around high formation pressures and flows in the Sherwood Sandstone making it difficult for grout injection to occur; and the correct choice of grouting technology for lining of the shafts. These concerns have been mitigated by the planning and design conducted to date. Additionally, further ground investigation to be conducted will gain more information on likely flows and by ensuring there is sufficient contingency on site in terms of grouts and pumping equipment on standby will address problems as they arise.

#### *Shaft Operation*

Seepage water that collects in the bottom of each shaft will be transferred initially to a receiving tank on the 1520 m production level using two submersible pumps, one in the base of each shaft, both of which are designed to deliver water at 6 L/s.

Water from the receiving tank will then overflow by gravity into the MRW reservoir, which will have a design capacity of 1500 m<sup>3</sup>; this roughly equates to one day of mine inflow based on an estimated inflow rate of 17.4 L/s. Mine water will then be transferred in a single raise to a second reservoir on the 360 m Level using two positive displacement reciprocating 4-inch plunger pumps (MRW pumps), each capable of pumping 8.66 L/s against a head of 1170 m. The column capacity is greater than this anticipated flow and in the event of greater inflows arising additional pumping capacity can readily be added.

The shaft base submersible pump and MRW pump set-ups will both consist of duty pumps and stand-by pumps. In the case of the MRW pump set-up, the DFS indicates this set-up will comprise two duty pumps and one stand-by pump. The shaft base submersible pump arrangement will consist of one duty and one stand-by pump in each shaft.

#### *Site Investigation*

From a hydrogeological standpoint, the shaft design has been partly based on ground investigations conducted at the Doves Nest site and partly based on experience gained from the management of groundwater at Boulby.

Hydrogeological investigations have been performed in the near surface environment to support the shallow infrastructure studies; and at depth in Boreholes SM11 and SM14 to support shaft construction through the Bunter Sandstone and underlying formations.

The shallow investigations performed by FUGRO Engineering Services (FUGRO) under the direction of FWS include straddle packer tests in the Moor Grit, Scarborough, Cloughton and Saltwick Formations. These Lugeon-style injection tests produced hydraulic conductivities (K) ranging between  $1\text{E-}06$  m/s and  $4\text{E-}05$  m/s. Whilst FWS believes these K values to be generally higher than expected for the formations concerned, this range is not untypical for siltstones and fine grained sandstones.

The hydrogeological testing in hole SM11 is documented in two Schlumberger (SLB) reports (2013). SLB deployed two tools to quantify the hydraulic properties of the rock matrix in SM11: the *Modular Dynamics Formation Tester* (MDT) and the *Express Pressure Tool* (XPT). There are two slight drawbacks associated with these tools in the manner they were deployed in SM11, since neither was set-up to characterise fractures, or boreholes that have irregular (damaged) surfaces where seals are poor, nor could they sample large volumes of formation water, meaning that the derived hydraulic conductivity is only representative of the formation over a very small radial distance from the borehole.

A total of 17 tests were performed in the Bunter Sandstone using the MDT probe. These tests were performed in locations where neutron and density probes had previously picked out zones of higher porosity and lower clay content. Even so, the majority of such tests indicate moderate to low K (circa  $1\text{E-}07$  m/s) in the Bunter Sandstone.

The MDT probe could not be utilised below 1235 m MD in SM11, due to reduced borehole diameter so it was substituted with the XPT probe to further investigate the rock matrix characteristics of the Brotherton Formation and Fordon Evaporites. The XPT tests indicate that the rock matrix in the Brotherton and Fordon Evaporites is of extremely low permeability.

SLB also undertook two complimentary testing methods to determine the hydrogeological properties of the formations in SM14, namely nuclear magnetic resonance (NMR) and a MDT dual packer assembly. The NMR tool uses resonance to identify pore fluids, establish rock porosity and estimate permeability from pore-size distribution and does so continuously down the hole. The MDT dual packer assembly measures discrete intervals, usually containing fractures that have been previously identified using a suite of wireline logging tools.

In the case of SM14, the FMI logging tool picked out four conductive fractures between 187 m MD and 1120 m MD. Two of these, the first in the Middle Shale between 912.29 m MD and 920.34 m MD, and the second in the Middle Bunter Sandstone between 990.01 m MD and 1003.5 m MD were selected for MDT testing. SRK notes that no testing was attempted further down the hole in the location where significant mud loss had been experienced by the drillers.

The K values for the Upper Bunter down to and including the transition beds derived from these two techniques range between  $1\text{E-}08$  m/s and  $8\text{E-}08$  m/s. SLB stated that this is somewhat lower than the values derived from the testing in SM11, but attributed this to differences in test interval length; that is, the small probes used in SM11 were able to focus on very discrete higher flowing features and, as such did not suffer the averaging effects of lower K materials captured in the larger SM14 test intervals.

#### *Estimation of Groundwater Inflow*

SLB built a mesh-based numerical groundwater model using the results of the investigations described above to predict the effect of dewatering the shaft.

The results indicate that inflow rate to the shaft over the modelled interval (Upper Bunter to Transition Zone) will be of the order of 3 L/s, but due to remaining uncertainties regarding the rock mass K, the flows could be a factor of 6 higher; up to 18 L/s. If this elevated inflow rate is encountered, then it will be controlled through additional grouting.

#### *SRK Comments*

In groundwater management terms, while further work is required to be done as part of the detailed design process, the concepts that underpin shaft design are generally sound. There has been some very useful characterisation of the deep and shallow portions of the two shaft holes respectively by SLB and by FUGRO under the direction of FWS. The packer testing results in the near-surface formations are broadly as expected. However, whilst the test work by SLB, particularly below the Röt Salt, indicates that the main formations of concern present in the Sherwood Sandstone and in the transition beds below are of low permeability, the mud losses witnessed in the transition zone in a number of holes drilled across the area of interest would suggest that K values can be higher locally. In this regard, the present design philosophy for the shaft lining is to extend a double grout ring cover in the Sherwood Sandstone from the Röt Salt down to the base of the Sherwood Sandstone. Given that the logs indicate sub-vertical joints associated with mud loss extend through the transition zone, it is possible that this will require a similar grouting arrangement as the Sherwood Sandstone. Plans for further investigation in SM14B to determine whether this is the case are sensible.

The pumping arrangements for the shaft are adequate for normal operations and there will also be capacity to cover for exceptional (unforeseen) inflows because there will be sufficient spare capacity in the shaft riser pipes to accommodate such flows and extra pumps can be added to the system with little engineering if required. Because of the rapidity with which inrushes can occur, SRK presumes that the pumps will be quick to locate, procure and install should the need arise.

The question of water in-rush to the mine is primarily addressed in the underground mining section of the DFS, since the potential for this phenomenon to occur is most likely linked to geological structures that are present either within the mining zone, or on the fringes of the resource block. Nevertheless, because the shaft is an essential link in the dewatering chain, it is important to demonstrate that there are adequate mitigations in place to significantly reduce the risk associated with this phenomenon. This will be done by using remote sensing (geophysics) and seepage mapping underground to pick out geological structures and zones with higher inflow potential, by implementing a programme of cover drilling and grouting throughout the mine life when pushing out roadways and headings, by ensuring a reasonable stand-off distance from faults when they are encountered and by using excavated panels as emergency overflow sumps to provide buffer capacity in the event of an emergency, all of which SRK considers to be appropriate.

## **9.3 Mine Design**

### **9.3.1 Introduction**

The upper surface of the Shelf polyhalite seam is relatively flat. The seam is over 40 m thick

near the centre of the deposit, thinning at the deposit's known extremities. The thicker areas also contain higher grade mineralisation (>88% polyhalite), are located nearest to the shafts and are scheduled for mining first. Access to mining areas is to be by mechanical excavation using continuous miners. Drill and blast stoping areas will also be developed by continuous miners.

At full production, Sirius will have amongst the highest annual outputs of any underground mine in Europe. A highly productive mining system will be employed utilising equipment, monitoring and maintenance systems necessary to achieve these rates. Sirius plans to undertake exploration and "in-fill" drilling to ensure orebody knowledge will support the extent and number of working areas necessary.

Short scale variation in polyhalite seam thickness observed in close spaced boreholes and daughter boreholes presents some production risk. There is potential for the orebody to be more complex at a mining scale than has been modelled, potentially changing parameters assumed in the mining plan such as length of panel, mineable thickness of stoping areas or total grade of a panel. This risk will be mitigated by drilling ahead of mining to determine the lateral extents of the panels and to identify any major features or displacements ahead of mining. In-fill drilling will follow the initial development to determine the lower extent of the orebody and allow for the short term planners to layout Lift 2 and Lift 3 for extraction.

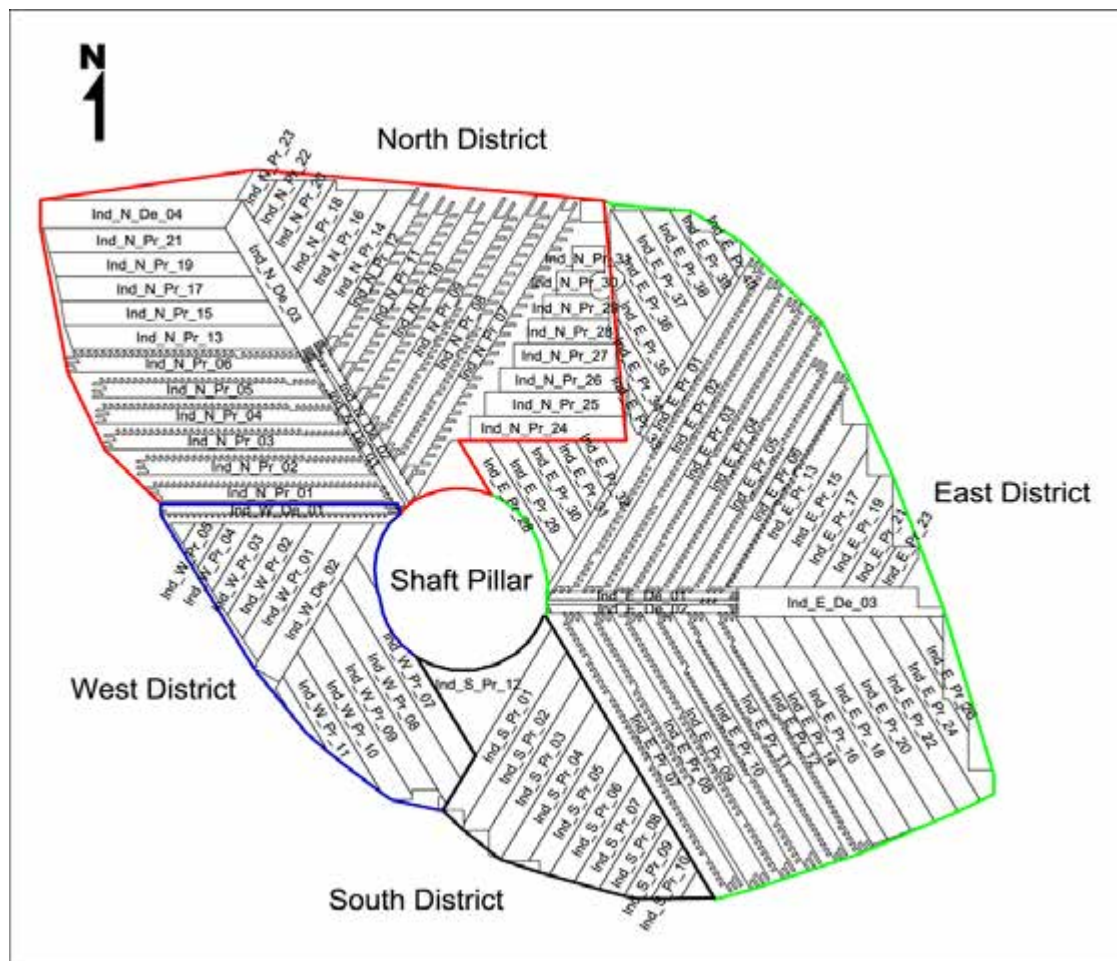
The mining schedule produced by SRK incorporates Inferred Mineral Resources as well as Indicated Mineral Resources. It should be noted, however, that, only Indicated Mineral Resources have been converted to Ore Reserves, it would be reasonable to expect that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration and the valuation presented later in this report presents scenarios with and without this Inferred material.

### 9.3.2 Approach to Mining

Four mining districts will be accessed by roadways that remain open throughout the life of mine. Two main roadways will be developed from the shaft pillar to access the North and East Districts. The West and South Districts will be accessed from the North and East roadways respectively. The main roadways are to be developed as six parallel and interconnected drifts and used for ingress and egress of men and materials, mineral transport, ventilation and services. Production panels are developed from the Roadway panels. The main features of the mine plan are:

- main developments access the north and east districts where better polyhalite grades and thicker seams are located;
- panel layouts considers polyhalite cut-off grade, shaft position, shaft pillar design and access to the north and east districts;
- production from the lower quality south district is scheduled later in the mine life, after mining north and east districts is finished;
- mining areas are limited by geological features that have been modelled; and
- the 800 m diameter shaft protection pillar will contain all shaft bottom infrastructure.

The mining layout to extract mineral from Indicated Mineral Resources is shown in Figure 9-3 below.



**Figure 9-3: General Mine District Layout in Area of Indicated Resources**

### 9.3.3 Roadway and pillar design

Access roadways and mining panels will advance on a room and pillar layout which will be determined by geotechnical conditions and the continuous miner (CM) and flexible conveyor train (FCT) equipment selected. Cross cut breakaway angles of 60° from the heading centre line are used for optimal performance; the FCT's length, which is connected to the conveyor belt limits the maximum panel width. The geotechnical constraints to excavation size are derived from 2D numerical modelling and application of a minimum Factor of Safety (FoS) of 1.2 and are summarised as:

- a maximum total permissible mining height within the resource of 40 m;
- maximum drive dimensions of 5.5 m high x 8.0 m span in all main development and life of mine access roadways; and
- a maximum roadway span of 12 m in all other panels, mining conditions allowing 20 m barrier pillars between mining and development panels.

Access roadway panel design has smaller openings to ensure they remain stable to enable continued access for personnel and equipment the life of the mine. The length of time required for access in panel developments is shorter so larger openings can be made.

### 9.3.4 Extraction Lifts

The polyhalite will be extracted in up to three lifts to accommodate varying seam thickness.

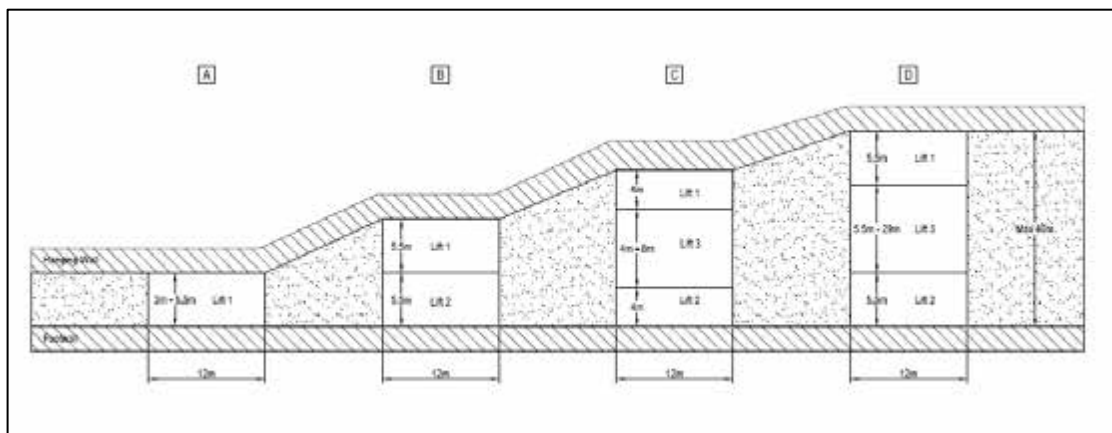
In Lift 1, polyhalite would be mined against the upper extent of the mining horizon, identified as the hangingwall (HW).

From Lift 1, the lower level of polyhalite that defines the panel's thickness will be tested by drilling. Seam thickness and subsequent panel design defines the position of Lift 2, which is the second stage of extraction, and whether or not Lift 3 located between Lifts 1 and 2 is required.

Man entry is limited to excavations less than 11 m high, which is equivalent to a double pass by a CM. To mine seams more than 11 m thick, Lift 1 and Lift 2 will be excavated by CM equipment, blastholes would then be drilled up from Lift 2 and mineral in Lift 3 blasted for extraction.

Three alternative extraction layouts are shown in Figure 9-4 for different seam thicknesses notably:

- minimum mining height (A);
- extraction heights up to 11 m using double pass CM mining (B);
- mining heights between 11 m and 16.5 m using blasting to extract Lift 3 (C); and
- mining heights between 16.5 m and 40 m using blasting to extract Lift 3 (D).



**Figure 9-4: Illustration of Extraction Lifts**

When blasting Lift 3, the panel will be extracted from the end of the panel towards the panel's access and the main development. Mineral will be excavated using remote controlled, electric powered LHDs from Lift 2. Blasted mineral will be hauled to and dumped onto a feeder breaker, which sizes the mineral to -150 mm before feeding it onto the panel conveyor. Lift 1 will be used as a return airway and is considered a no-go area for people and equipment.

To ensure the in situ parting between Lift 1 and Lift 2 remains stable before and during extraction a minimum parting thickness equal to or greater than the mining excavation height below it will be maintained. Further, in those areas where the extractable seam is thicker than

40 m, extraction is limited to 40 m and the remaining portion of payable mineral outside the mining horizon is not extracted.

## **9.4 Mining Geotechnics**

### **9.4.1 Introduction**

SRK has carried out a detailed mining geotechnical study which has defined input parameters to facilitate stable mine layouts and a safe mine design. The geotechnical study comprised:

- characterisation of the polyhalite ore horizon, footwall and hangingwall rock masses from a detailed programme of core logging and laboratory testing;
- defining mine design criteria including continuous miner room and pillar and shaft pillar dimensions and excavation support for various orebody thicknesses; and
- definition of potential surface subsidence for various mining scenarios utilising 3D numerical models.

### **9.4.2 Mining Geotechnical Characteristics**

Engineering characterisation and model input parameters were based on the detailed geotechnical logging and subsequent laboratory testing of selected drillcore. The field and test work included:

- Geotechnical logging by SRK of boreholes SM1, SM2, SM3, SM3a, SM6, SM7, SM7a, SM9, SM9a, SM9b, SM11, SM11a and SM11b. The SM11 drillhole is a pilot hole for the Service Shaft (south) and provides information on the ground conditions for the shaft bottom infrastructure. SM14, the production shaft pilot hole was abandoned due to drilling conditions before it reached the evaporate sequence. A replacement hole, SM14B and deflections, is to be drilled during 2017.
- A suite of laboratory geomechanical tests on samples of hangingwall and footwall waste and ore polyhalite core. The test programme on the ore and immediate roof and floor was comprehensive including triaxial testing and long term creep testing.
- Creep testing undertaken by the Institute for Geomechanics ("IfG") rock mechanics laboratory in Germany, specialists in testing the creep behaviour of salt materials.
- Waste rock samples were sent for uniaxial compressive, tensile and triaxial compressive strength testing to Geolabs in the UK.
- Interpretation of geotechnical properties from a suite of geophysical wireline logs.

Overburden strata units above the roof zone up to the clastic sediments consist of widely jointed to massive anhydrite, halite, mudstones, dolomites and limestones. Intact rock strength varies from moderate strong to very strong.

Rocks forming the immediate 10 m roof predominantly consist of medium to high strength, brittle anhydrite, which is significantly stronger than halite rocks which form the mining roof in many potash deposits. A strong unjointed hangingwall reduces risk of roof failure and reduces the need for roof support.



As opposed to traditional salt deposits composed of halite or sylvinite, the polyhalite ore is strong and will behave in a brittle, non-creep way to mining induced stress. The higher strength of the polyhalite will allow the development of smaller pillar dimensions and more stable roof spans.

Weak halite interbeds and veins in the polyhalite ore are thin and estimated to be less than 10% of the polyhalite zone.

The footwall of the rooms and roadways will generally be in polyhalite. The footwall will generally be gradational into anhydrite and then halite. The strength of the footwall rock (anhydrite-halite-polyhalite) will vary with mineral composition with higher halite content causing a decrease in strength. A mixed floor with similar overall properties to the anhydrite roof has been modelled.

Rocks of the Far Footwall are predominantly halite, which has long term creep behaviour. Published uniaxial compressive strength (UCS) data from the nearby Boulby Mine fit well with the data obtained by Sirius.

#### 9.4.3 Major Structures

A number of faults have been identified from a structural study. These influence the mining layout. The faults defined fall into: high displacement faults (throw >60 m), lower displacement faults (throw ≤60 m) and strike slip faults and identified that throw is typically greatest at the top of the Kirkham Abbey Formation in both the high displacement and lower displacement faults.

The longer high displacement faults tend to have greater vertical extent and penetrate into the overlying Triassic-Jurassic sediments (the Bunter Shale and Sherwood Sandstone). Detailed geotechnical and hydrogeological investigation of these faults has not yet been carried out and therefore the potential of these faults to provide pathways for groundwater movement remains a risk needed to be managed. Notably though, the mine design includes 100 m exclusion zones around the identified faults to mitigate this risk. Unidentified high displacements faults also present a risk due to the low limited amount of data. A similar risk is faults that penetrate the underlying Kirkham Abbey Formation which can contain gas.

The lower displacement faults will impact on the mining method as they will affect ore continuity and grade causing dilution and ore loss. The structural investigation indicates that possibly over 100 faults of 15 m to 60 m throw could affect the mining area. The number of faults with throws of ≤15 m in the resource area will be more than there are with throws between 15 and 60 m and these would also affect the continuity of the CMs and their productivity.

For the purposes of the mine design, it has been assumed that these small scale fault features will be picked up prior to mining by the use of exploration and in-fill drilling from within the seam and that the mining layouts will be adjusted by the short term planners prior to mining taking place.

These layout adjustments could take the form of relocating the planned panel layouts so that the barrier pillars coincide with the features. Alternatively panels could be cut short or re-orientated to accommodate the features; however, the impact of this cannot be quantified until mining has commenced in the shaft bottom area and more detailed information is available on

the seam characteristics.

#### 9.4.4 Orebody Geometry and Continuity

In practice the orebody geometry, grade and thickness continuity will define the mining layout. Generally there are few geomechanical constraints to a layout conducive to continuous mining. The thick ore over much of the deposit will allow large size continuous mining. Continuous mining with double pass benching is proposed in ore up to 12m thick. Whereas much of the deposit is expected to be amenable to large CMs, variable grade continuity and more steeply dipping footwall and hangingwall geometry may require mining machinery and methods with more flexibility than large CMs provide. Smaller more flexible equipment may be employed to recover the ore in such areas.

The polyhalite hangingwall grade cut-off is relatively consistent and will define the initial mining horizon. The geometry of the footwall grade cut-off is much less consistent, which causes considerable variations in the thicknesses of the mineable unit even over relatively short lateral distances. This will be taken into account during the detailed mine planning.

Good information in thickness and grade continuity is provided by exploration boreholes with deflections. The deflections provide information of around 30 m to 50 m away from the parent hole. Table 9-1 below presents the ore dip and thickness variations.

**Table 9-1: Thickness of orebody in geotechnical drillholes**

BHID	Thickness (m) at 80% cut-off	HW "Dip" Degrees	FW "Dip" Degrees
SM3	18m		
SM3A	35m	11° (apparent)	16° (apparent)
SM7	57m		
SM7A	60m	22° (apparent)	21° (apparent)
SM7B	28m		
SM9	2.5m		
SM9A	0	16° (true)	15° (true)
SM9B	0		
SM11	21m		
SM11A	36m	3° (true)	17° (true)
SM11B	44m		

The thickness variations between the close spaced drillholes suggest that the thicknesses at holes without deflections must be viewed with caution. As already commented, Sirius is aware of this and plans to use advance definition drilling to inform the mine plan and, if needed, to use smaller more flexible equipment to improve recovery in these areas.

#### 9.4.5 Geotechnical Design Parameters

Geotechnical analyses have been carried out for 12m room widths and mining heights from 10 m to 50 m. In areas of the deposit where the thickness of orebody is more than a double pass of the CM, a footwall and hangingwall drive may be developed and the orebody between the two drives will be mined out using drill and blast methods. The room and pillar dimensions are provided below.

**Table 9-2: Room and Pillar Dimensions**

Mining Ht (m)	Room Width (m)	Pillar Width (m)	H:W Ratio	FoS	Comments
10	12	10	1	1.3	Stable
20	12	15	1.3	1.2	Stable
30	12	20	1.5	1.2	Stable - Some tensile stresses in walls
40	12	40	1	1.2	Stable - Some tensile stresses in walls
50	12	50	1	1.2	Stable - Some tensile stresses in walls

The standard support regime for various underground developments is presented below. Re-bar bolts should have a minimum diameter of 20 mm and a maximum tensile load of 25 t and cable bolts should have a diameter of 23.5 mm and yield strength of 50 t.

**Table 9-3: Underground Support Requirements**

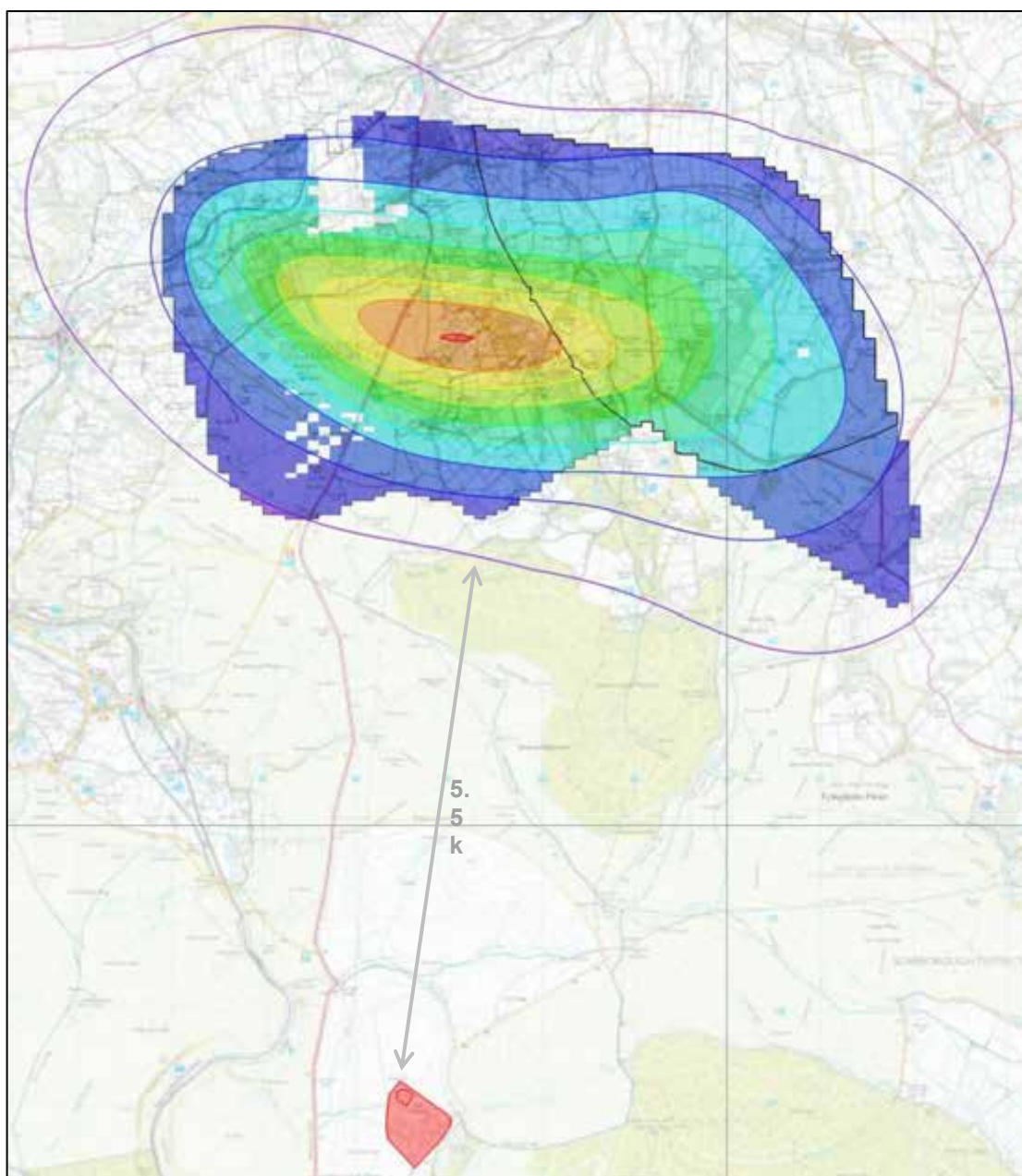
Excavation	Permanent Roadways and Infrastructure	Single Pass Production Headings	Production Headings, Roadway Intersections and large span infrastructure excavations
Primary Support Type	Resin grouted re-bar bolts with face plates	Resin grouted re-bar bolts with face plates	Resin grouted cable bolts
Minimum Bolt Length	2.4 m	2.4 m	6.0 m
Spacing	1.5m centres	1.5m centres	2.0m centres
Location	Back	Back	Back
Additional Support	Straps in poor ground	Straps in poor ground	Straps in poor ground
Excavation	Double Pass Production Headings - First Pass	Double Pass Production Headings - Second Pass	
Primary Support Type	Resin grouted re-bar bolts with face plates	Resin grouted re-bar bolts with face plates	
Minimum Bolt Length	2.4 m	2.4 m	
Spacing	1.5 m centres	1.5 m centres	
Location	Back and ribs	Ribs	
Additional Support	Straps in poor ground		

#### 9.4.6 Subsidence Potential

Modelling to determine the impact of mining on surface infrastructure was undertaken utilising FLAC3D. In particular, any potential impact on RAF Fylingdales, located 8.5 km south-south-west of the Doves Nest site and 6.1 km from the southernmost point of the planned mining area was assessed.

The modelling shows a maximum subsidence of around 40 mm at the centre of the deposit extending some 5 km east-west and some 3 km north-south, to the surface subsidence limit shown as the outermost contour line on Figure 9-5 which shows 5 mm vertical displacement

contours over the mining area.



**Figure 9-5: Location of RAF Fylingdales in Relation to the Project**

## **9.5 Mine Hydrology**

### **9.5.1 Introduction**

There are a number of factors that constrain the mine design and these include major and minor geological structures (mainly faults), the mining thickness, the location of the shaft pillar and the presence of exploration boreholes drilled from the surface. Of particular relevance to the groundwater assessment are the geological structures and the exploration holes, since these potentially provide conduits for groundwater and for gas in to the mining level, the former particularly from the overlying Sherwood Sandstone Group (SSG) and the latter from the underlying Kirkham Abbey Formation.

The mining block is fringed on three sides by regionally important sub-vertical boundary faults. Those that are most likely to affect the mining horizon are the Donovan and Whitby faults, which run to the north and north-east of the mining area and which extend from the Kirkham Abbey Formation in the basement through the evaporate horizons, including the polyhalite, into overlying strata which embraces, amongst various sediment types the potentially water-bearing sandstones of the SSG.

The basis of design for the Project is that the workings on the mine level will be dry. Hence, the present mine design includes a number of precautionary measures to mitigate the risk of water ingress including:

- a) a pillar of 100 m thickness between the interpreted position of the regional boundary faults and the panel design;
- b) a 100 m diameter exclusion zone around the location of each exploration borehole in the mine plan and the tonnage within each zone excluded from the extraction plan;
- c) a policy of cover drilling throughout the mine's life to ensure that significant, potentially flowing structures are identified and either avoided, or grouted in advance of roadways and headers;
- d) an emergency pumping system capable of pumping enough water should there be a sudden in-rush;
- e) the use of excavated panels as emergency overflow sumps and the necessary infrastructure established to deliver flood water to these areas installed to provide buffer capacity in the event of an emergency; and
- f) the establishment and implementation of an appropriate emergency response plan.

### 9.5.2 Site Investigation

The groundwater study to support the design of the underground mine has drawn significantly from literature sources and from logging activities carried out during the development of the exploration holes.

A limited hydrogeological testing programme mainly targeting the Sherwood Sandstone Group and underlying formations has been performed in holes SM11 and SM14 using SLB's wire-line logging tools. SLB deployed three tools to quantify the hydraulic properties of the rock matrix, including MDT, XPT, and NMR.

A total of 19 tests were performed in the SSG using the MDT, 17 in SM11 and a further two (using a straddle packer arrangement) in SM14. These tests were performed in locations where neutron and density probes had previously picked out zones of higher porosity and lower clay content. Even so, the majority of such tests indicate moderate to low hydraulic conductivity ( $1\text{E-}08$  m/s -  $1\text{E-}07$  m/s) in the SSG and underlying transition zone.

The MDT probe could not be utilised below 1235m measured depth in SM11, due to reduced borehole diameter and so it was substituted for the XPT probe to further investigate the rock matrix characteristics of the Brotherton Formation and Fordon Evaporites. The XPT tests indicate that the rock matrix in the Brotherton and Fordon Evaporites is of extremely low permeability.

### 9.5.3 Estimation of Groundwater Inflow

The limited amount of site-specific hydrogeological data prompted the decision to conduct sensitivity analyses to illustrate the potential risk of flow from uncharacterised faults and fractures within the area of the mine.

Modelling has illustrated that a single heading measuring 12 m wide by 5.5 m high has the potential to produce a significant quantity of water as it approaches a conductive fault and this finding, in turn influenced the decision to design for emergency pumping system capable of pumping at 100 L/s in the unlikely event that the measures identified above fail to identify/mitigate against the presence of such an inflow

### 9.5.4 SRK Comments

While the overall approach in terms of groundwater management has of necessity been very precautionary on the grounds that uncertainty remains about the groundwater regime, in particular the role of faults in this setting, the DFS has correctly identified the risks attached to groundwater in this setting and introduced appropriate mitigation measures to the mine design.

Whilst there would be considerable benefit in conducting further hydrogeological testing to de-risk the project and also, if the opportunity presents itself to test high and low displacement structures within and on the periphery of the mining block, much can also be gained from methodically recording and analysing the lithologies, structures and seepages encountered in the future mine through mapping, logging results of cover drilling, grouting and any underground remote sensing designed to pick out structures in advance of the roadways and headings. The latter does not obviate the obvious advantages for further up-front site investigation, but would be an important and necessary adjunct to it.

## 9.6 Mine Ventilation

### 9.6.1 Introduction

Mine ventilation design by Bluhm Burton Engineering (BBE) details the requirements for the underground mine and infrastructure to support the mining operation. Heat and heat stress management will be the most significant ventilation issues in the mine.

In Phase 1 (10 Mtpa) the Service Shaft (6.75 m finished diameter and 1570 m deep) will be downcast force ventilated and the Production Shaft (6.75 m finished diameter and 1602 m deep) will be the upcast shaft. This will provide a ventilation capacity of 597 kg/s (468 m<sup>3</sup>/s) to underground intakes, limited by exhaust shaft upper velocity of 14 m/s in the Production Shaft.

The mine will introduce controlled partial recirculation (up to 30%) and refrigeration after a production rate of 10 Mtpa is achieved. This requirement increases as production areas extend over a larger area and which are further from the shafts nominally assumed to be at a distance in excess of 1.5 km from the shaft.

In Phase 2 (20 Mtpa) the Production shaft will become an additional downcast and a new upcast shaft (7.8 m finished size) will be sunk below the TBM shaft, and upcast return air from the mine. This will provide a ventilation capacity of 1,086 kg/s (852 m<sup>3</sup>/s) to underground intakes, limited by exhaust shaft upper velocity of 20 m/s at the top of the exhaust shaft.

### 9.6.2 Design approach

The main fans will be located on surface and will force ventilate into the downcast shaft. Two duty and one standby mixed flow axial fans, each rated at 5.5 MW motor power, will be located in a 'sub-surface' excavation near the top of the shaft. The shaft-top bend, trifurcation, drift-work, fan motor sets, electrical rooms as well as air inlet zone will all be covered with barn-type structures on surface. The benefits of this configuration will be to minimise the ventilation plume from the exhaust shaft, reduce measures necessary to achieve permitted noise levels, eliminate the need for shaft heaters, and to facilitate a longer fan life than an exhaust configuration.

The winder houses will be enclosed buildings with independent HVAC systems and air lock door access arrangements. The principal ventilation challenges for the mine are:

- high thermal gradient and use of mechanised mining equipment and conveyor belts resulting in hot working conditions for employees;
- contamination of mine ventilation from mechanised mining methods, diesel equipment and blasting;
- high density of hoisting equipment (skips, cages) in the shafts could lead to ventilation constraints; and
- gas inrush due to the proximity of the polyhalite to gas bearing strata. Whilst it is acknowledged that this is a low likelihood event the potential consequences in such an event could be high and therefore it is acknowledged in the strategies adopted and the design of the equipment being considered in the mine.

### 9.6.3 Heat Management Strategy

Heat and heat stress management are the most significant ventilation issues in the mine. Strategies are:

- ventilate main equipment (such as substations and conveyors) to return air;
- minimise number of main and panel ventilation intakes to reduce intake heat load from strata impacting on face environments.
- minimise potential for leakage and short-circuiting of fresh air to return;
- where possible, workers operate in air conditioned cabins or use remote control equipment and maintain air velocity of 0.50 to 0.75 m/s for workers outside air conditioned zones for improved cooling power;
- implement a heat stress management plan, fitness-for-work screening, acclimatisation protocols, hydration, implementation of work-rest cycles and appropriate clothing; and
- timely implementation and commissioning of refrigeration and controlled partial recirculation systems by forecasting of future conditions based on monitored conditions.

#### 9.6.4 Controlled Partial Recirculation and Refrigeration

The ventilation and cooling system design is constrained by the shaft capacity and impacted by fan configuration; the main fans being located on surface and providing force ventilation will add heat to intake ventilation. To supplement the primary ventilation, controlled partial recirculation of ventilation will be employed for higher production rates. In the recirculation system, a portion of return air (up to 30%) will be scrubbed and cooled in spray chambers and re-mixed into the intake ventilation flow.

Both controlled partial recirculation and refrigeration will need to be introduced simultaneously and the capacity of which will follow the production scheduling. The basis of design is that:

- Production can commence up to 10 Mtpa with four CMs and one blasting panel without refrigeration or controlled partial recirculation.
- Refrigeration and controlled partial recirculation of mine air is expected to be required after a production rate of 10 Mtpa is reached. The actual timing of when refrigeration and controlled partial recirculation is introduced will depend on the heat and air quality measured as part of the Heat Stress Management programme. Heat and air quality depends on the diversity of mining locations and quality of ventilation controls installed at this time. It is expected that to maintain acceptable return air temperatures at production rates of 10 Mtpa working areas will be within 1.5 km of the shaft during the first 10 years of mine life.
- The controlled partial recirculation and refrigeration system will consist of a surface refrigeration plant (modular chillers with dry cooling towers) supplying chilled water via shaft columns to secondary heat exchangers underground located in northern and southern sections of the mine from where chilled water is reticulated to bulk air cooler/recirculation locations. Currently, four bulk air cooler/recirculation systems will be established during the life-of-mine.

A number of reasonable assumptions regarding the geothermal properties of the strata have been made which will require confirmation once detailed mine planning is complete. Ventilation and heat management requirement predictions indicate:

- 20 to 25 MWR of underground cooling will be required in Phase 1, on average;
- the current refrigeration system concept (modular up to 46.4 MWR surface plant for 40 MWR underground cooling including a contingency of about 20%) is appropriate for LoM heat management requirements;
- if circumstances, such as persistent strata gas emissions, were to prevent the use of controlled partial recirculation, mine production could be constrained subject to blend of CM and blasting panels employed and their distance from the shafts. Assuming refrigeration is introduced it is expected acceptable return air temperatures at production rates of 10Mtpa working areas could be maintained for a time beyond 1.5km of the shaft but the latter end of the mine plan will require adjustment to trade off longer mine life with lower production rate; and



- the mine plan ultimately requires the main airways to be extended relatively far from the shafts serving at least six CM's at the furthest north and south extent of the mine. To prevent excessive intake-to-return leakage booster fans will be used in addition to those used in the recirculation systems. Provision for the booster fans has been made in the sustaining capital but these will only be required at the point where mining is taking place at distances greater than 2.5km from the shafts. Based on the current mine plan, it is anticipated that this will be after a period of at least 10 years.

## **9.7 Mining Schedule**

### **9.7.1 Introduction**

The mining schedule comprises four main phases:

- shaft sinking;
- construction of shaft bottom development and commissioning of infrastructure;
- roadway access development, and Production Ramp up; and
- production mining.

### **9.7.2 Shaft Sinking**

Shaft sinking schedules have been developed by WPRSA and confirmed by the preferred shaft sinking contractor. The base assumption for mine scheduling is that the Service and Production shafts reach the production level (-1520 Level) in a predetermined sequence to allow for the development of the production level to commence.

### **9.7.3 Construction and Ramp Up**

The construction and ramp up phases leading up to full production are defined as follow:

- Construction phase (month -10 to -1): Construction of critical mining facilities in the shaft bottom area.
- Time zero (month 1): Time when the permanent hoisting and tunnel conveying facilities are complete and ready for operation.
- Ramp up Phase 1 (month 1 to 4): Commences when the Production shaft is operational and concludes when the first continuous miner starts.
- Ramp up Phase 2 (month 5 to 12): Commences when first continuous miner starts and concludes when the pit bottom roads and all permanent facilities within the roads have been completed.
- Ramp up phase 3 (month 13 to 27): Commences when pit bottom roads have been completed and concludes when the first drill and blast panel commences operation.

The Production and Service shafts will both be equipped during the construction and ramp up phase. The Production shaft will be equipped from month -10 to time zero after which the Service shaft will be equipped.

Roadheaders will be used for excavation prior to commissioning of the first continuous miner.

Figure 9-6 below shows mine production ramp up in relation to the commissioning of major infrastructure.

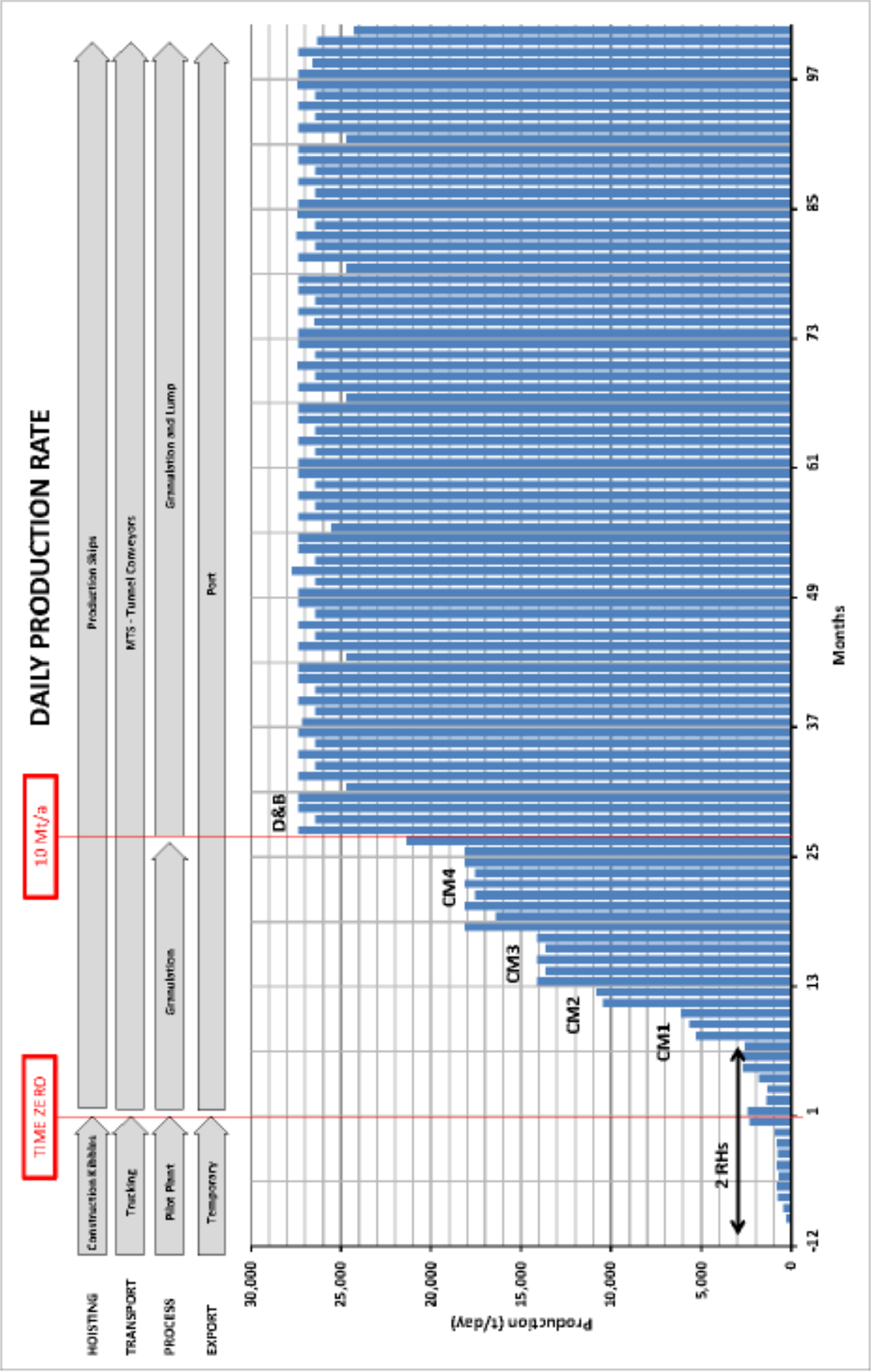
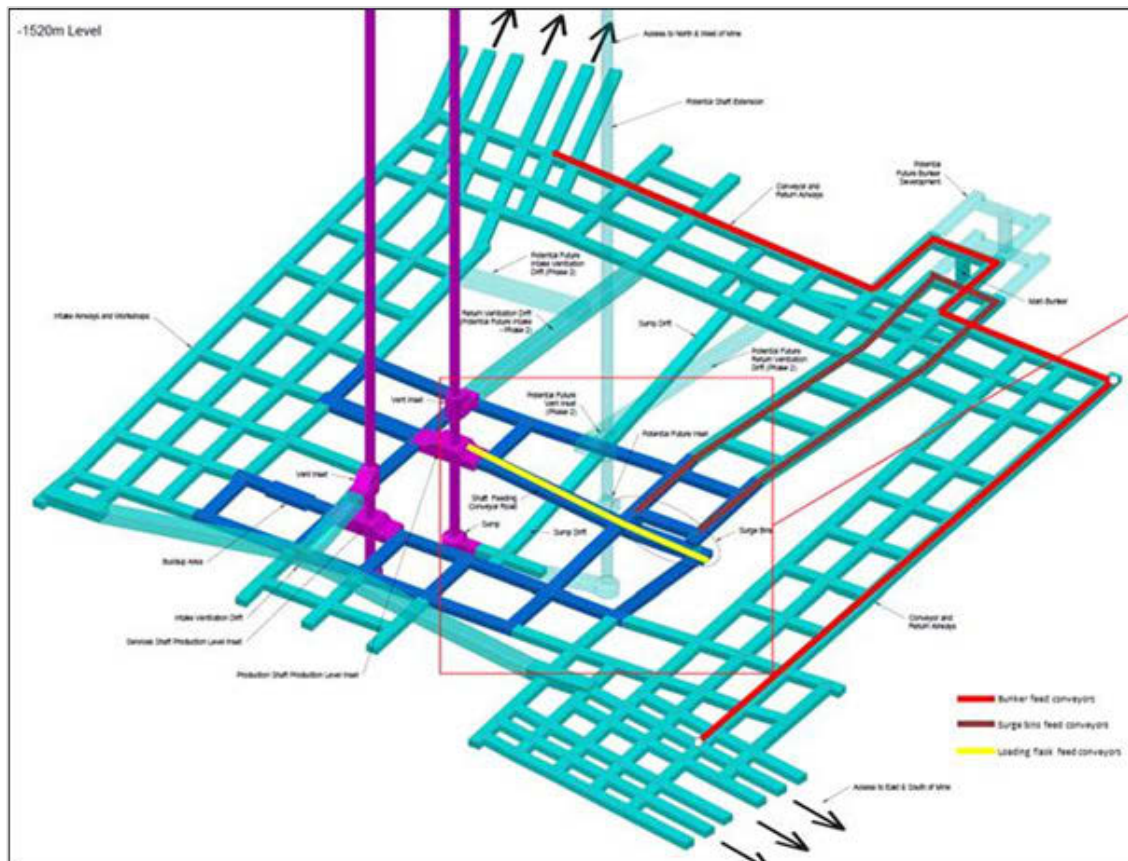


Figure 9-6: Production Build Up Showing Implementation of Major Facilities (Sirius)

### 9.7.4 Development Schedule

Development of the shaft bottom area (shown below) and associated facilities have been incorporated into the overall mine schedule with provisions for construction and equipping of underground infrastructure and facilities.



**Figure 9-7: Shaft Bottom Layout**

### 9.7.5 Production Schedule

#### *Production Targets*

Sirius has targeted sales of 10 Mtpa of polyhalite for Phase 1. The granulation process involves addition of 1 to 1.5% starch to bind the polyhalite grains. Consequently, the run of mine target production rate is set at 9.9 Mtpa.

Equipment productivity simulations were run which constrained production at 10 Mtpa. The simulation indicated that an annual rate of 9.97 Mtpa would be achievable with four CMs at 1.6 Mtpa each and a suite of blasting equipment (at 3.6 Mtpa). Using these parameters for the mine production schedule it was found that the rate of completing drill and blast panels was faster than their rate of development resulting in some monthly variation in the total production rate. An annual average production rate of 9.9 Mtpa is achieved with some years' production rates exceeding 10 Mtpa by around 50,000 t.

The mine production simulation analysis was based on a 10 Mtpa hoisting limit and was undertaken prior to finalisation of the Phase 1 hoist arrangement at 13.6 Mtpa. The additional 50,000 t required to increase underground production to 10Mtpa (approximately 1.7 days production) and completely utilise the downstream processing capacity of the plant should be achievable as the higher instantaneous hoisting rate will increase the production capacity of the underground Mineral Handling System.

#### *Production Sources*

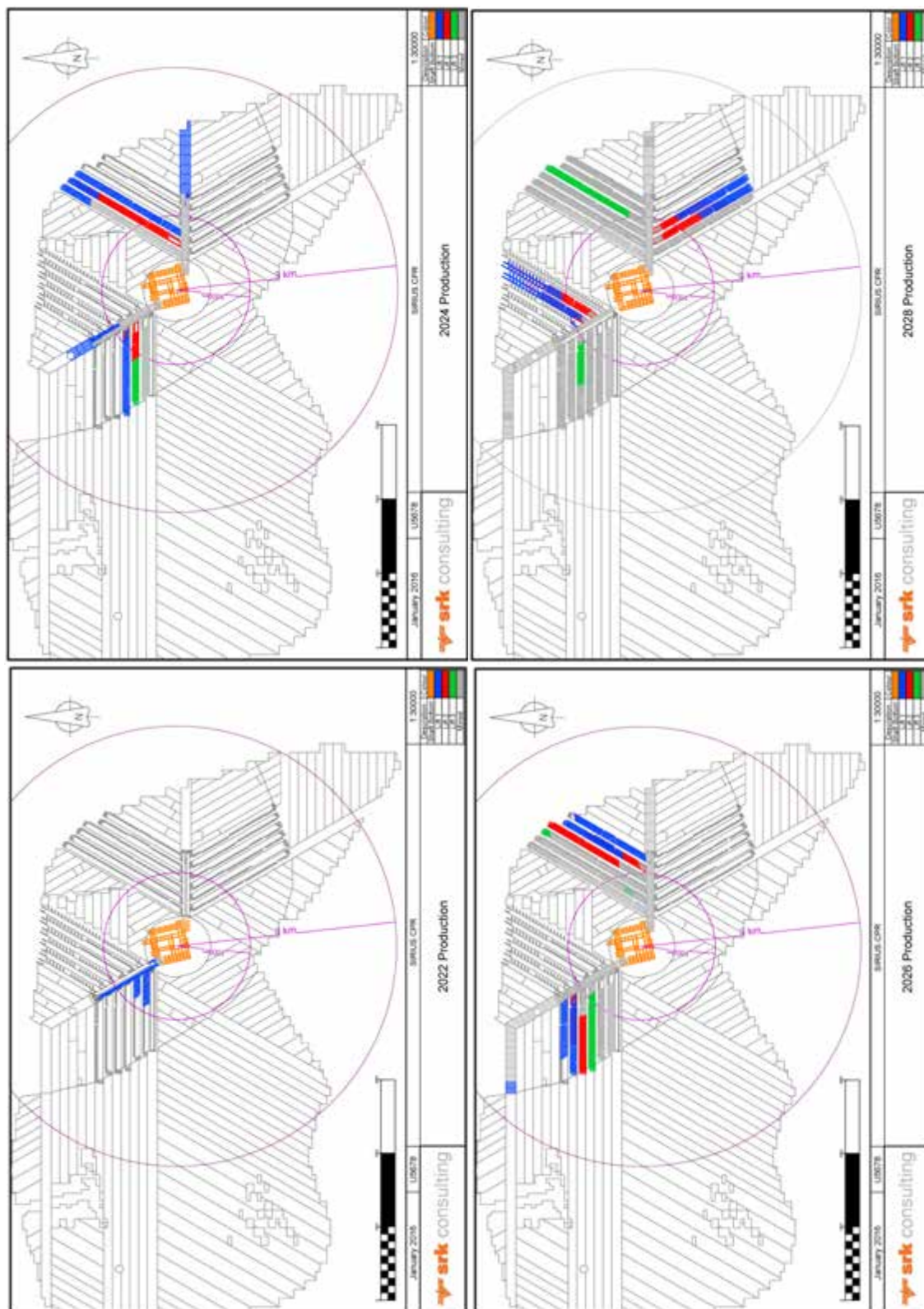
The mine schedule is based on a logical geographical sequence, which prioritises higher grade mining blocks with the aim of achieving an average grade of 88% polyhalite; but the scheduling process does not target head grade or blend production sources to smooth polyhalite grade. Deleterious elements contained within the polyhalite are not reported. These aspects will be considered as part of the detailed mine planning process during mine operations. Detailed mine planning will be based on the results of in-fill drilling which is allowed for in the mining operating costs. The aim of the in-fill drilling is to optimise the mining grade and better direct mining operations to ensure that a consistent grade is supplied as required. It is possible that optimising the mining grade may result in a reduction in the available Mineral Resource but it is anticipated that ongoing exploration drilling beyond the extents of the current Mineral Resource will replace this.

A summary of the life of mine (LoM) production by district is shown in Table 9-4 while the sequence of mining by lift is shown as production mining activity over the first twenty years of production in years 2022, 2024, 2026, 2028, 2030, 2035 and 2040 in Figure 9-8.

Total planned extraction is split between Indicated Resources (49%), and Inferred Resources (51%). The first 17 years of production is from Indicated Resources only. The production profile by resource classification is shown in Figure 9-9.

**Table 9-4: Life of Mine Production Schedule by District**

District	Mineable Indicated Resources		Mineable Inferred Resources		Total Mineable Mineral Resources	
	Tonnage (Mt)	Polyhalite (%)	Tonnage (Mt)	Polyhalite (%)	Tonnage (Mt)	Polyhalite (%)
North	112	87.1	92	86.2	204	86.7
East	104	89.5	0	0.0	104	89.5
South	20	90.6	48	90.2	67	90.3
West	27	85.7	159	85.3	186	85.7
Total	280	88.4	298	86.4	577	87.4





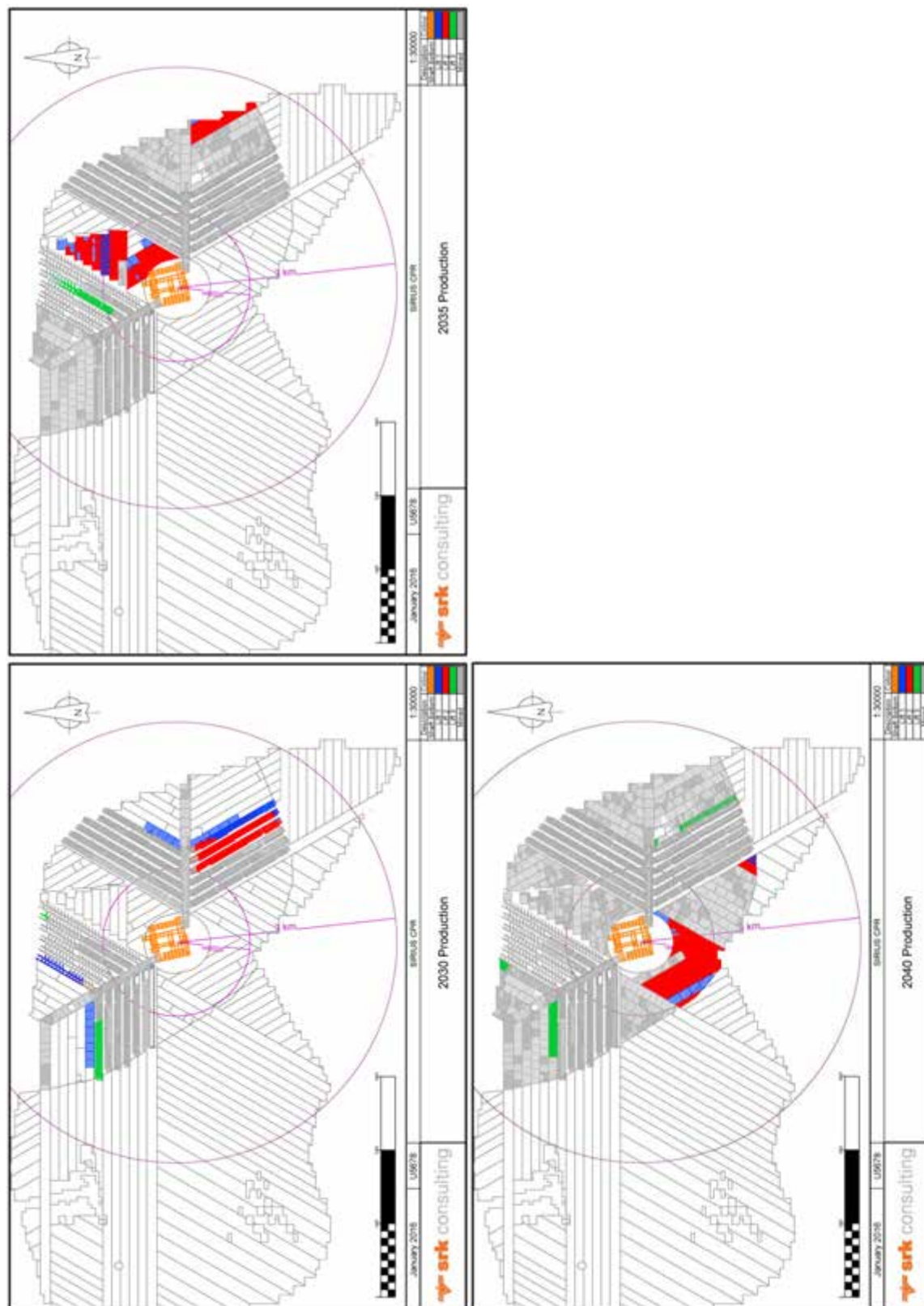
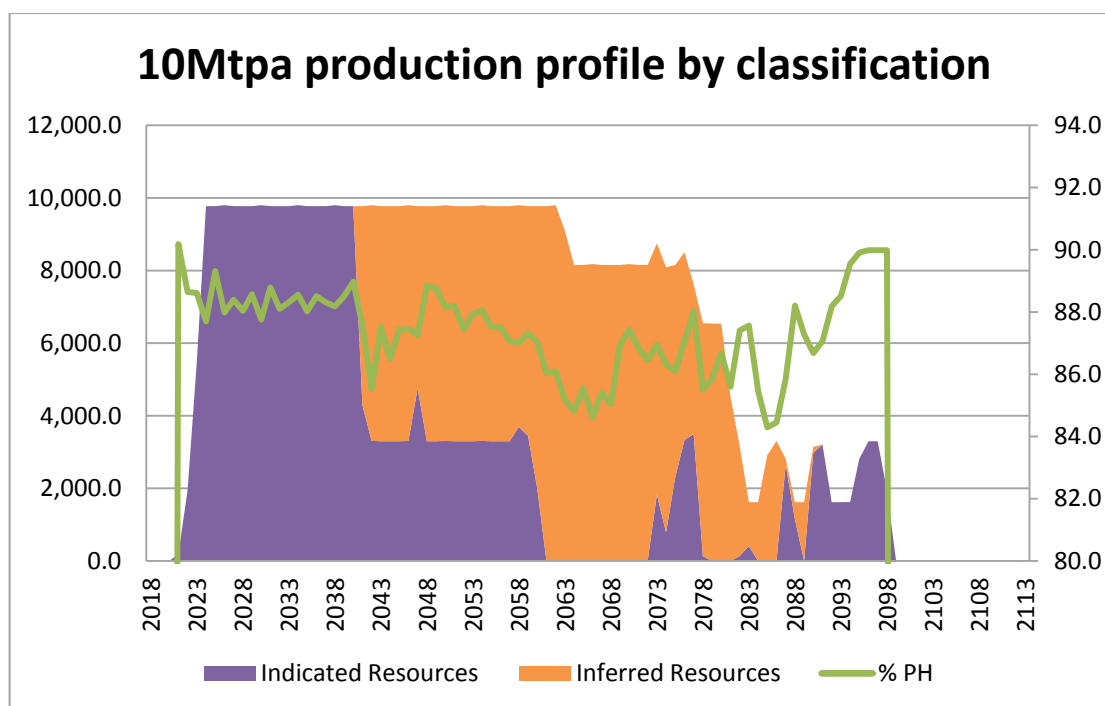


Figure 9-8: LoM Production Schedule



**Figure 9-9: Life of Mine Production by Ore Classification**

There is a long period when production is sourced from both Indicated and Inferred Mineral Resources. This occurs when panels in Indicated Mineral Resource are extracted with Lift 3 and new panels are being developed with Lift 1 and Lift 2 being extracted from Inferred Mineral Resources. The Indicated Mineral Resources extracted at the end of the mine life are those areas with essential infrastructure such as access roads and the shaft pillar, and remnant areas.

During mine operations further drilling underground will be undertaken to support conversion of Inferred Mineral Resources to Indicated Mineral Resources which will then likely be converted to Ore Reserves. The mine plan assumes that all Inferred Mineral Resources with grade identified to be >81% polyhalite will convert to Indicated Mineral Resources and be available to mine in the future.

#### *Polyhalite Grade*

The basis of the production schedule is to achieve a target head grade of 88% polyhalite. This compares to the polyhalite grade of 87.3% polyhalite in Indicated Mineral Resources, and 85.7% polyhalite in Inferred Mineral Resources. Some selectivity in mining is therefore required, particularly from the Inferred Resource areas, introducing a risk to maintaining target head grade.

A general trend observed across the deposit is for higher grade at the hangingwall and footwall contacts. The implication is that better grades are expected when mining Lift 1, grades would decrease during Lift 2 extraction and then increase in those areas where Lift 3 is extracted.

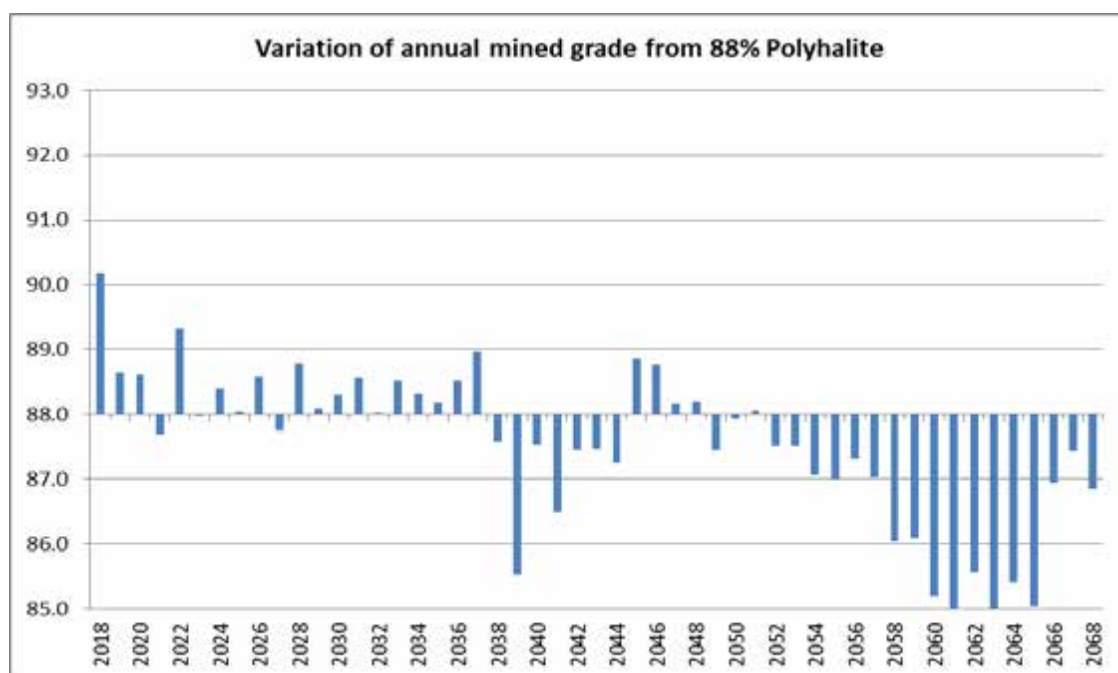
SRK has assessed variation in the scheduled run of mine (ROM) grade for suitability of the approach being taken and to understand issues that might arise.

Data used in this analysis is derived from the mineral resource estimate in which mineral grade is spatially distributed in the block model. While overall continuity of mineralisation between boreholes appears to be good, the continuity of the geometry on a smaller scale remains uncertain. Therefore, mineral grade on a macro basis is correct, but mineral grade estimated in individual blocks is not to be relied upon. It follows that analysis of ROM grade on a daily basis can only be considered indicative of the type of variation that might occur during mining.

SRK considers the LoM production schedule reported is suitable for the needs of the study in the respect that average annual ROM grades meet the Project targets and analysis shows that target shipping grades can be achieved over extended periods.

Short and medium term mine planning will utilise in-fill drilling from underground to increase geological knowledge prior to mining panel design and layout and more optimal sequencing of panels to manage ROM grade to the targeted 88 % polyhalite is expected. Current LoM average grade is 87.4 % polyhalite; and the first 20 years of production (10 Mtpa) has an average annual ROM grade of 87.8 % with a minimum of 85.5 % and maximum of 90.2 % polyhalite.

Lower grades from Inferred Resources are mined later in the mine's life, and average annual ROM grade is first consistently below 88.0 % in year 21. Figure 9-10 shows the grade variation to year 50 during the period in which most of the Indicated Resources are mined; the average mined grade over this period is 88.2 % polyhalite.



**Figure 9-10: Variation of Annual Mine Grade Over 50 years**

Shipping is expected in vessels of around 60,000 DWT which account for around 2.0 days of mine production (at 10 Mtpa). To understand the sensitivity of the production schedule to influence the grade of shipped product, SRK has assessed the daily variation in mine grade for the years 2020, 2021, 2022 and 2031.



These years were selected to assess upper, mid and low ROM grade in the first half of the production schedule; basic data on the daily grade distribution for the selected years are shown below.

**Table 9-5: Distribution of Daily Polyhalite Grade for Selected Years**

		2020	2021	2023	2031
Minimum polyhalite grade	(%)	83.8	88.0	88.6	86.1
Maximum polyhalite grade	(%)	89.8	90.0	90.1	90.2
Average polyhalite grade	(%)	87.1	89.4	89.5	88.7

## 9.8 Mining Equipment

### 9.8.1 Introduction

CMs operating with FCTs are considered by Sirius to be the most effective and productive method of developing the polyhalite orebody. Sirius has worked with Joy Global (Joy) to identify appropriate equipment and maintenance regimes to provide the high productivity, high capacity system that is required to meet mine production rates of up to 20 Mtpa.

### 9.8.2 Cuttability of Polyhalite

Polyhalite is a stronger material than would normally be mined mechanically and as such the cutting conditions may present different challenges to those normally experienced when using continuous miners. As a recognised leader in continuous miner equipment development Joy has assessed the cuttability of polyhalite by testwork carried out on core samples as part of the geotechnical test work for the DFS. This indicated that it may be difficult to cut, but not abrasive to the cutting picks. CMs commonly cut material up to 70 to 80 MPa. Polyhalite intact rock strength averages 65 MPa with some recorded tests being 110 MPa. Notably, Joy recently tested one of its existing HM36 machines which is successfully cutting polyhalite at a nearby mine and data gained confirms that the material can be cut and indicates the cuttability targets set in the DFS are achievable.

Joy has recommended use of its newly developed 12HM46 CM, which is designed to specifically deal with the harder cutting conditions that are likely to be encountered by being heavier and more powerful than previous models. Cutting performance is a key parameter and, as there is still limited worldwide experience of mining and mechanical excavation of polyhalite, this aspect of mine productivity will be subject to continued investigation. Pick consumption of 18.1 t cut/pick provided by Joy for the DFS was derived from its in-house experience, database information, design work, and the limited testing undertaken. Recent trials indicate this to be potentially conservative.

Mine design production rates have been calculated using the advice provided by Joy, performance parameters provided by Sirius and productivity estimates of the mining system using this equipment based on results from discrete event simulations undertaken by Labrecque Technologies in conjunction with SRK.

The new 12HM46 machine will be commissioned in other operations before production at Sirius commences, and as the equipment manufacturers experience of cutting polyhalite increases greater knowledge of those parameters that determine cutting performance in polyhalite will improve confidence in planned performance. This relates to the hardness of the polyhalite, which affects production rate and pick consumption, which impacts mining cost and productivity.

### 9.8.3 Fleet Requirements

In addition to identifying Joy CMs and FCTs on which to base mine productivity, for the purposes of their study, Sirius also identified Joy equipment for the mechanised mining equipment fleet for the purposes of capacity calculations and cost estimates. Equipment requirements include roadheaders and battery haulers for the initial shaft bottom development and, CMs, flexible conveyor trains, shuttle cars, roofbolters, feeder breakers and conveyor belts for the main mine development. This is established technology which is being applied to excavation of polyhalite.

During routine mining operations, panel development is initiated and advanced 300 m using shuttle cars after which an FCT is installed. Two shuttle car fleets each comprising three Joy 10SC32 shuttle cars and one Joy feeder breaker are required.

Standard long hole drilling equipment will be used for mine production by blasting. Load Haul Dump (LHD) equipment will load blasted polyhalite from the stope, haul to a tip point fitted with a feeder breaker located in the panel, from where the panel conveyor will transport the mineral to the trunk conveyor system.

A range of miscellaneous equipment required for crew transport and provision of support services has been allowed for, including: LHDs; grader; Integrated Tool Carrier (ITC); shotcrete sprayers; a concrete batch plant; and personnel transport.

### 9.8.4 Mineral handling

Mineral would be removed from the mining areas to the shaft bunkers by conveyor. Two sizes of conveyors are planned: 1,200 mm panel conveyors and 1,400 mm trunk conveyors. For the purposes of the study, conveyors are scoped in 1.5 km lengths.

Trunk (or district) conveyors and are sized to convey mineral from multiple panels. The nominal design capacity for the trunk conveyors is 3,000 t/h.

Panel (or production) conveyors serve one production section only. The nominal design capacity for panel conveyors is 1,000 t/h. During geographic expansion phases development panel conveyors can be upgraded to trunk conveyors using the same frames with new belts and drives. For the 20 Mtpa option it is anticipated that conveyors will be doubled up and that two conveyors will run in parallel to remove the material from the mine.

## 9.9 Productivity

### 9.9.1 Equipment Productivity

Each CM is scheduled to produce 1.6 Mtpa as determined by the production cycle simulation analysis undertaken. The analysis showed that a total output from the four planned CM sections on the mine to be 6.4 Mtpa. SRK consider that for the purposes of this study, scheduling CM production at 1.6 Mtpa is possible based on the input parameters provided by Joy and the simulation analysis by Labrecque Technologies. Joy has confirmed that it is confident that its new machines can produce at this rate.

### 9.9.2 Mine Operations

Sirius plans to use state of the art communication systems for data, control and communications of mine systems, operations and maintenance. A mine control room manned 24 hours, will form the main communication point between the underground and surface, and will monitor operations in order to direct and support mine operations as required. Fixed plant information will be transmitted to the control centre where data display, analysis and supervisory systems are installed. The mine SCADA system would provide an overall view of the underground environment and would display control, state and management data.

The arrangement will enable Sirius to: have short interval monitoring and direction of activities in the mine; direct activities according to the mine plan; and implement preventative maintenance practices.

#### *Communications and Control Systems*

A mine wide communication system (data and voice) will be based on a fibre cable system. It will incorporate: automated conveyor belt control and monitoring, including remote camera installations; machine monitoring, data capture and reporting; equipment and personnel tagging and tracking; environmental monitoring and reporting; 11 kV substation monitoring and control, including energy management of the underground reticulation system. A telephone communication via internet protocol (IP) telephones will also be provided at key locations such as belt drives, production sections, workshops and rescue bays, and radio communications via a leaky feeder cable will be installed.

Two armoured fibre optic cables would be installed in the men and materials shaft. One cable to provide redundancy with automatic switching between the two cables at the shaft bottom should a fault occur in one of the cables. An armoured 8-fibre multi-mode fibre optic cable 'backbone' would be installed along underground roadways throughout the mine to enable various system elements to be connected to the fibre through ethernet switch access points.

Mine Control will direct and support mine operations during the shift by assessing:

- The status of the ventilation and environmental conditions underground such as, fan operating status, airflow in key areas, temperatures underground and the presence of noxious and/ or flammable gases.
- The operating status of equipment within the mine including CMs, fixed infrastructure such as conveyors, shaft loading, skipping, fans etc and mobile equipment.
- Planning and dispatch of mine and maintenance personnel and equipment to help ensure operations are working to plan.

- The location and wellbeing of underground mine personnel.
- Emergency readiness: the control room will provide command and control facilities from where disaster management plans will be coordinated.

Asset tracking and management of equipment are identified as an essential component to enable management of the mine's operation, although a preferred system is not yet specified.

The mine will operate two 10 hour production shifts and one 4 hour maintenance shift per day. Preventative maintenance practices incorporated into the mine operating design include:

- Performance analysis of mining system against an agreed set of KPIs;
- Remote Health Monitoring & Technical Support on a 24/7 basis;
- Condition monitoring, including vibration and oil analysis; and
- Reliability Centred Maintenance based on utilisation of individual pieces of equipment.

#### *Personnel Safety*

Personnel and mining equipment will be tagged so that their approximate whereabouts can be known. Proximity detectors on heavy equipment will detect personnel within the hazardous operating zone of their equipment. These systems improve mine safety, improve the rigour of operational checks and would assist an emergency response by helping to locate and identify personnel that may need assistance.

### **9.10 SRK Comments**

The Project will be a high output and highly productive mining operation capable of mining and transporting 10 Mtpa of ore in Phase 1. Mechanical excavation of mineral and use of automated fixed plant to transport mineral from over 1500 m underground and then via the Mineral Transport Tunnel some 37 km to the processing plant will form the basis of mine operations.

Engineering designs for the entire operation address the expected long mine life in excess of 50 years, and also accommodate a variability of factors that might be found. The inaccessibility of the orebody, and relative inexperience the industry has of mining polyhalite means a variety of design parameters are not fully known. The data used and assumptions made are based on the best knowledge available to date, but it is expected that changes/optimisation will occur as orebody knowledge increases. SRK considers that the necessary engineering solutions to mechanical excavation technology will be made and any unforeseen challenges will be overcome in time and accordingly the mine ramp up is phased over a period of two years. The opportunity exists to improve this should any potential challenges be overcome sooner. At present it is understood that trials of cutting polyhalite in situ are in progress to start proving the assumptions made.

In addition to the cutting equipment a number of control methodologies are required to cut at the planned rate and SRK considers that appropriate engineering design, equipment monitoring and control systems, communication infrastructure and maintenance programmes for fixed and mobile plant are being planned for. Successful implementation of these aspects by an underground workforce established with appropriate job planning and training, provided with communications systems, work planning and management of the operation is required. The DFS articulates a reasonable approach in this area and appropriate allocations of time and budget are made.

The mine will have a hot working environment. The Heat Stress Management Programme and monitoring of environmental conditions underground will be essential to ensure mine worker safety and to maintaining productivity.

There has not yet been an opportunity to study polyhalite mineralisation at a mining scale. Close spaced parent and daughter boreholes indicate that there could be variation in the cuttability, grade distribution, variation of seam thickness, and seam continuity over mining scale. The impact of these over distance is not confirmed. It is anticipated, however, that as the shaft bottom development is undertaken a greater understanding of the mineral will be developed. Accordingly, developing orebody knowledge by examination of these parameters will enable mine designs and production plans to be optimised during the shaft bottom development phase. This will be supported by ongoing in-fill and resource drilling.

At 10 Mtpa, the mine plan schedules the mining of Indicated Mineral Resources for about 18 years, and at a rate of around 35% Indicated Mineral Resource material for a further 20 years.

Key aspects of design that will need to be further considered to ensure efficient and cost effective mine operations are as follows:

- As more resource information is made available, the geological models will need to be updated and the mine plans reviewed to further enhance the value of the mine.
- CM and drill and blast operations will need to be balanced.
- Detailed ventilation and electrical reticulation modelling should be undertaken as part of the detailed design phase.
- Once access is developed on the mineral horizon, a resource drilling programme will be commenced and, as knowledge of mining polyhalite increases, a detailed short term mine plan developed.
- A detailed polyhalite grade distribution study based on new resource information from mine development to develop a long term mine planning strategy for managing ROM grade. This might include the use of mined out stopes for stowing waste material or stockpile lower grade material.

## 10 MINERAL PROCESSING

### 10.1 Introduction

Processing of the polyhalite ore will be undertaken at the Material Handling Facility (“MHF”) located at Wilton, Teesside and will consist of grinding the material received from the underground conveyor (Material Transport System, or MTS) followed by granulating of the ground material into the final physical form for despatch / sale. The ore will not be subjected to any beneficiation or upgrading. A small portion of the coarse material will also be extracted from the comminution circuit and stockpiled for sale after crushing and screening.

### 10.2 Processing Strategy

#### 10.2.1 MHF Description

The process flowsheet for the MHF will consist of the following unit processes:

1. crushing of the as received ore (nominal 150 mm top size) delivered from the MTS to a Coarse Ore Storage bin to a nominal target size of 80% -20 mm using a Mineral Sizer operating in open circuit;
2. screening at 20 mm using a banana screen, producing +20 -50 mm “raw” product as required (to the Finished Product Store (“FPS”));
3. crushing of excess +20 -50 mm material using cone crushers operating in parallel and in open circuit: note that the screening and cone crushing stage can be by-passed as required;
4. grinding of the crushed material to a target product size of 80% -200 µm, using High Pressure Grinding Rolls (“HPGR”) operating in closed circuit with air classifiers;
5. granulation, using pin mixers for binder addition followed by disc pelletisers;
6. drying of the granules using gas fired rotary dryers followed by screening at 2 mm and 4 mm. -4 +2 mm material is product, and -2 mm and +4 mm material would be returned to the HPGR grinding circuit; and
7. polishing and wax coating of the sized granules, which will then be stored in the FPS ahead of shipment.

The plant is designed for an initial capacity of 10 Mtpa of ore, producing 0.5 Mtpa of raw product and 9.5 Mtpa of granulated product. The facility has been sized to allow for the potential doubling of the production capacity.

An 800 t/d Temporary Processing Facility (TPF) will be installed within the FPS to process polyhalite ore that is mined as the shafts and MTS tunnel are being constructed. The flowsheet for the TPF will be the same as for the full scale plant, and it will use one of the granulation and drying modules from the plant (the plant will contain 10 such modules) preceded by a mobile crushing plant.

## 10.2.2 Supporting Testwork

### *Comminution*

A comminution simulation study was conducted by Worley Parsons for K Home International (KHI) and formed the basis of the selection and sizing of the crushing circuit equipment – mineral sizer, HPGR and Sturtevant Whirlwind air classifier. The simulation was undertaken using the Bruno software developed by Metso Minerals (Metso), where the HPGR simulation was conducted using HPGR product particle size distribution data from an analogous project. Classification was simulated using a screen model.

Sturtevant Whirlwind air classifiers were selected on the basis of capital cost, as they do not require external fans, or baghouses for dust control.

The Worley Parsons report recommended confirmatory HPGR testwork. Such testwork was subsequently conducted by ThyssenKrupp at a laboratory scale. The testwork used a 15 kg sample of ore, which was crushed to -11.2 mm as required by the laboratory scale HPGR. The HPGR was operated in closed circuit with screens, and achieved a product size of 80% -185 µm at a 210% circulating load. Testwork was also conducted to determine the abrasivity of the ore, to estimate the likely wear rate of HPGR components.

Subsequent Bruno simulations were undertaken by Metso for the screening and tertiary (cone) crushing stages, and by Sirius of the granulation and final product screening sections.

### *Materials Handling*

The Wolfson Centre for Bulk Solids Handling Technology, University of Greenwich, UK, was commissioned by KHI to undertake a materials handling study to assist hopper and chute design. Testwork was undertaken on two samples, one 2-4 mm granulated material and the other a powder.

In addition to determining hopper design parameters, the testwork indicated that the granules were generally resistant to breakage although prone to segregation, and that both the granules and powder absorbed significant moisture at a relative humidity above 80%, causing the powder to become sticky and the granules to soften. While the moisture reduced on drying, there was a degree of residual caking of the material; however, the sample of granulated material supplied for testwork had not been wax coated; the coating stage is intended to minimise moisture adsorption and is typically applied as the final stage of processing.

### *Granulation*

Granulation testwork has been focussed on two major process options, compaction and pelletisation. Compaction granulation testwork was undertaken by Köppern and by Sahut Conreur, and pelletisation granulation testwork was undertaken by FEEO and Mars Minerals. Further pelletisation testwork, in the form of a production run to produce 40 t of pellets for agronomy testwork, was undertaken by Staffs Powder Processing.

The feed material used for this testwork was polyhalite sourced from ICL's Boulby operation, namely the "Polysulphate" commercial product, which is produced as a 2-4 mm oil coated material.

The pelletisation granulation testwork was conducted both at bench scale (FEEO International and Mars Minerals) and at pilot scale (Mars Minerals, Staffs Powder Processing). The testwork was conducted using dry milled material, however due to the different mechanism of forming aggregates, pelletisation granulation was thought to be unaffected by the presence of the oil coating.

The pelletisation granulation testwork tested different binders, and produced granules with generally acceptable mechanical properties. The testwork at Staffs Powder Processing progressed to the point where only 15% of the pelletised product was out of the desired 2-4 mm range.

#### *Product Coating*

The application of different proprietary coating reagents was tested by Holland Novochem. The main purpose of the coating agent, applied to the product granules, was to prevent dusting and reduce moisture adsorption during storage and transport. The coated granules exhibited reduced dusting characteristics to acceptable levels. The granules, uncoated or coated, exhibited very good caking resistance and low moisture uptake.

#### *Agronomy Testing*

A significant body of agronomy testwork has been undertaken and is ongoing; however, of most relevance to the process plant is the work conducted by NRM Laboratories, which compared the nutrient release rates between 2-4 mm granules and “natural” 0.8-1 mm and 2-4 mm polyhalite chips. The release kinetics of the granulated material were faster than the 0.8-1 mm material which in turn were faster than the 2-4 mm material. Given that the 0.8-1 mm material is used as a grass fertiliser, where a 6-8 month release period is targeted, and that Sirius is targeting the arable market for its product, where a release period of 3-4 months is desirable, Sirius concluded that the polyhalite ore would need to be ground to a fine size rather than be produced as a crushed chip.

### **10.2.3 Ongoing/Planned Testwork**

Sirius outlined a programme of future testwork to further develop, refine and optimise the selected process and this process has now commenced.

The first stage of testwork is an extensive programme undertaken using Boulby sourced polyhalite as this is available in significantly greater quantities than material sourced from the Sirius lease. A two stage programme is proposed, an initial stage consisting of batch tests and a second stage consisting of continuous tests. The batch stage testwork will consist of the following elements:

- comminution parameters: Bond Ball Mill Work Index, Bond Abrasion Index, HPGR wear rate;
- air classification (vendor testwork);
- granulation testwork, seeking to optimise parameters such as size distribution, binder type and addition rate and mixing and granulation operating parameters, seeking to optimise the product to reject ratio;
- drying tests, aiming to determine parameters to achieve the target crush strength;
- coating agent tests; and



- materials handling characterisation testwork.

The second stage of testwork will use as its feed source material from a proposed geotechnical diamond drillhole, supplemented by material from historical drillholes.

The testwork programme will include more extensive comminution parameter determination (UCS and Bond Crushing Work index in addition to the parameters listed previously). This will be followed by pilot scale HPGR testwork, initially in open circuit, but culminating in closed circuit testwork using air classifier oversize as well as granulation rejects. Further batch HPGR testwork will process air classifier oversize from further air classifier testwork, and further granulation, drying and coating testwork will also be conducted. Screening testwork will also be conducted on granulation and final product material.

A final stage of testwork will be undertaken using the TPF, and the testwork outcomes will provide commissioning parameters for the full scale MHF, as well as some fine tuning of the circuit.

### 10.3 SRK Comments

The configuration of the MHF flowsheet is based on two key drivers:

1. The agronomy testwork which has indicated, for the market that Sirius is targeting, that the polyhalite must be ground to around 200  $\mu\text{m}$ , to ensure the desired nutrient release profile.
2. That powdered polyhalite is not an acceptable final form of the product and that therefore it must be granulated and that while compaction granulation typically represents a lower overall cost option, a pelletised product will be a superior product, in terms of product consistency, and its transportation and handling and spreading characteristics. Notably, as Sirius is introducing a new material to the market (at least in significant quantities), Sirius has chosen to present its product in as high a quality as possible.

In terms of the testwork conducted to date:

1. SRK notes that the initial HPGR size (for the production of 6.5 Mtpa of granulated material) was selected on the basis of the Worley Parsons simulation work using the Bruno software where, given that Bruno does not include a HPGR model, the data that was used was based on analogy. While the HPGR size for the revised production rate was selected based on advice from suppliers, SRK notes ThyssenKrupp's recommendation that "reliable design of an industrial HPGR requires further test work on a large scale test HPGR with air separator". This testwork has now commenced as part of the detailed engineering phase.

2. The laboratory scale HPGR testwork conducted by ThyssenKrupp was sufficient for proof of concept, and SRK notes that the circulating load achieved in that testwork – 210% – has been adopted for the plant design. SRK also notes that the laboratory testwork was conducted on feed crushed to -11.2 mm (80% -8 mm), the HPGR product was approximately 80% -1.7 mm and that size classification was conducted by screening. The plant design parameters are that the HPGR feed will be at least -20 mm, and up to -50 mm, the design HPGR product is 80% -5 mm and that the same circulating load is expected through the use of air classifiers. While based on the coarser plant design HPGR product, SRK believes that the circulating load may be higher than the design 210%, which may in turn mean that equipment would need to be modified from that currently assumed. SRK has not made any allowance for this in the financial model as any increase in capital or operating cost is unlikely to be material.

The ingress of rocks greater than the gap size between the HPGR rolls is known to lead to significantly increased wear of the rolls, and so SRK has recommended that the benefits of installing an oversize screen ahead of the HPGR is assessed. While SRK acknowledges that Mineral Sizers provide a greater degree of top size control than alternatives such as cone crushers, SRK believes that operating without an oversize protection screen may mean that the wear experienced by the HPGR rolls may be higher than expected.

3. SRK understands that the selection of Sturtevant Whirlwind air classifiers for the classification duty was based on capital cost, with the units neither requiring external fans nor baghouses for dust control. Notwithstanding this, SRK believes that some form of dust control will be required for such units and that such units are prone to high wear, and are very sensitive to the performance of the lubrication system for the main bearing, which operates in a high dust environment. Sirius understands this issue and plans to undertake further work during the detailed engineering phase to assess this further.

The Company plans to address the recommendations made by SRK above, as part of its additional testwork programme which is now underway. Notably:-

1. The comminution testwork (grinding and classification) will be aimed at confirming the circulating loads (based on the closed cycle pilot scale testwork), the ability of the selected air classifiers to handle the material at the expected unit feed size distribution and the performance and operational parameters required in order to confirm the size selection for the HPGRs.
2. The granulation testwork (including drying) will be aimed at establishing the granulating conditions in order to maximise the amount of correctly sized material produced, the likely variability in granulation performance, and the means to control this unit operation, and the establishment of drying conditions so as to produce product granules with the required physical characteristics, such as strength.

In summary, SRK considers that the testwork completed to date in combination with that underway and planned to be done as set out above and incorporating recommendations made by SRK will provide a sound basis for finalising the process design and ensuring this is optimised in terms of both producing the required product quality and optimising the capital and operating costs.

## **11 PROJECT INFRASTRUCTURE**

### **11.1 Scope of Review**

The Project requires extensive infrastructure to support the mining and export operations, which include the welfare and support facilities at the Doves Nest site, the MTS, the MHF at Sembcorp's Wilton site and the conveying and bulk terminal port facility planned for Bran Sands, Teesside.

Since completion of the DFS, contractual discussions have been ongoing with AMC but the plans as presented here remain largely based on those presented in the DFS.

### **11.2 Project Access**

Site access at the Doves Nest site is via A-roads which under the planning requirements require improvements to facilitate construction and operation. Road improvements have now commenced and work is underway prior to construction starting. Improvements are also needed at the intermediate shaft site for the MTS development. The MHF (at Wilton) and proposed bulk terminal port facility are currently accessed from existing regional infrastructure links which do not require improvements. Once the project is in operation, a bus service will bring employees to the Doves Nest site and product transport will be via the MTS.

### **11.3 Project Services**

#### **11.3.1 Power Supply**

There will be three electrical supplies for the Project:

- a 66 kV supply to Doves Nest from the Sembcorp Utilities UK Greystones power station on the Wilton site to supply the MTS, mine and related shafts.
- two 11 kV cables from the Sembcorp to supply the MHF and port; and
- emergency power generators positioned at the Doves Nest site.

A transmission voltage of 66 kV has been selected for the primary power supply along the MTS to the mine and related shafts and infrastructure.

The Project power demand / load list has been defined and a detailed study of the mine power distribution infrastructure has been completed and feeds into the load list as with the MHF Wilton site. Power is readily available from Sembcorp's power generation facilities at Wilton but there is also a choice of alternative providers.

#### **11.3.2 Water Supply Strategy and Surface Water Management**

Sirius anticipates Sembcorp supplying potable and process water to the MHF. Sirius has completed an options study and estimated the water demand for construction and operation phases at the Doves Nest site and identified potential supply sources through consultation with service providers. Two study documents support the DFS studies for the Doves Nest site and the MTS intermediate site.

Surface water management proposals have been developed for all sites, with consideration to the requirements for both the construction and operational phases. For the purposes of the DFS, drainage capacities have been calculated using Micro Drainage WinDes models and hand calculations have been carried out to size the pipe network and swales.

Contact water from processing or inflows from the mine workings and MTS / shafts (termed “non-domestic wastewater” and abbreviated to “NDWW” in the DFS) will be housed in a conduit located within the MTS to the Wilton site for treatment, re-use or discharge.

### **11.3.3 Other**

Other utilities required at the MHF and supplied by Sembcorp include compressed air, natural gas, steam and effluent water.

The communication and SCADA systems are project-wide integrated systems, with a fibre optic backbone that would run from Dove’s Nest to the port via the MTS tunnel, with a parallel standby cable. A number of systems would be run from this backbone such as secure data, voice and video communications between sites and personnel, operations and management data to control the plant and related equipment data etc.

### **11.3.4 SRK Comments**

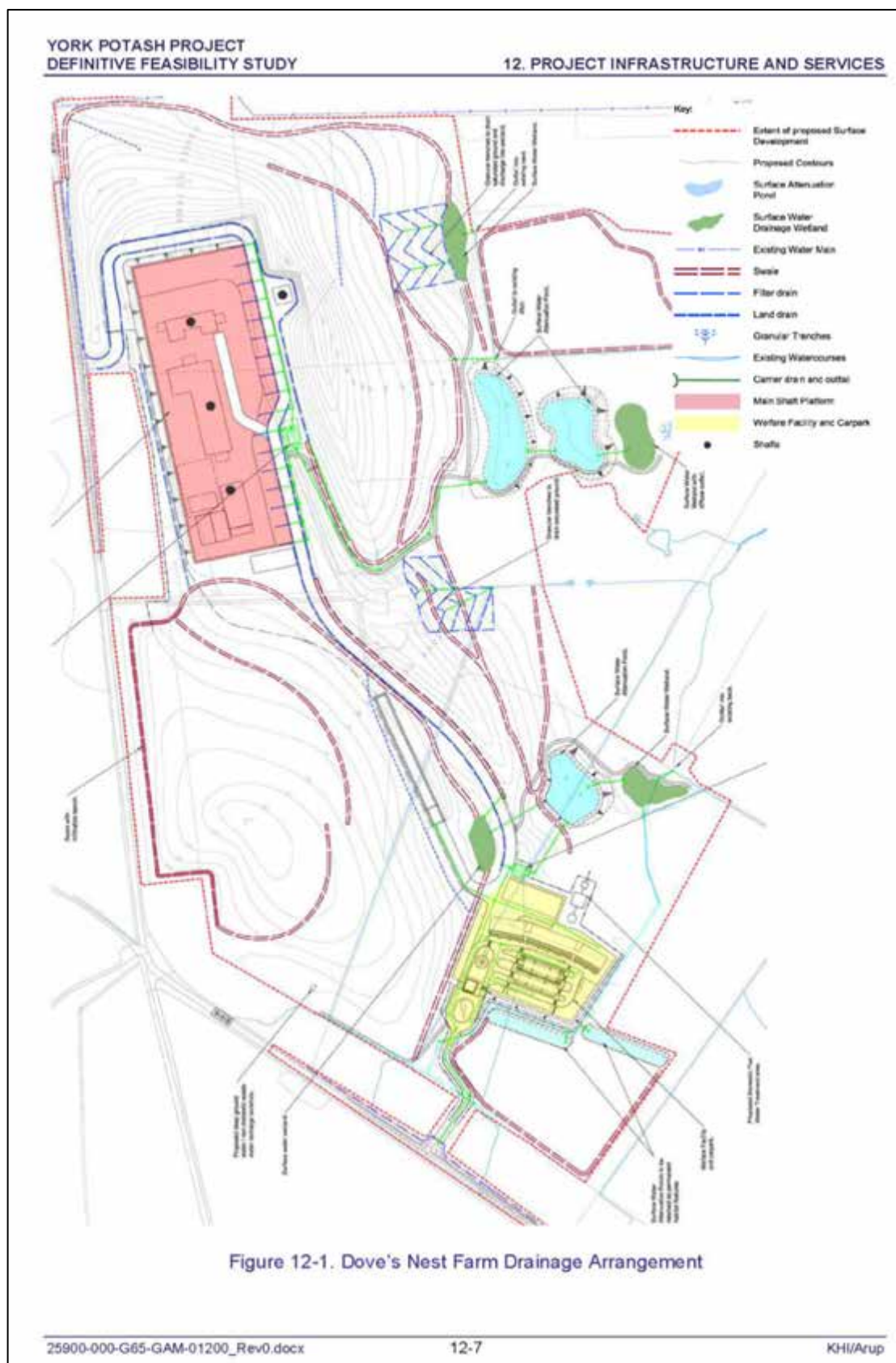
Overall the power supply strategy appears sound and should provide sufficient energy to the Project. The designs and costs are based on an electrical load list identifying major load centres and based on detailed studies. The MTS tunnel design and space proofing accounts for the presence of the 66 kV cable; a lower transmission voltage would incur too high a transmission loss and 132 kV would be too high to be deemed safe in the multi-use MTS tunnel. Utilising the tunnel avoids permitting and construction of overhead or buried cables through the national park.

Surface water management and water supply, particularly at the Doves Nest site were critical areas of focus during the DFS as they are required initially for construction and development and are within the national park.

## **11.4 Mine Site Infrastructure (Doves Nest)**

Given the sensitive location of the minehead within the NYMNP, a key focus has been the construction phase planning for the Doves Nest site to facilitate shaft sinking and then future development of the Doves Nest site (see Figure 11-1). Improvements were required to access routes and this work is now underway to allow site enabling works to discharge planning conditions.

Besides the shaft head equipment and equipment housing at Doves Nest, which are commented upon earlier in this report, the main infrastructure asset at this location is the welfare facility.



**Figure 11-1: Example of drainage arrangement for Doves Nest (source: DFS, 25900-000-G65-GAM-01200\_Rev0.docx page 12/7)**

The welfare facility is a multipurpose two storey building providing support to personnel before and after their shifts and also for surface maintenance activities. The building will include the following function: change house and lamp room, control room, medical facility, laboratory, canteen, office area, training facility and maintenance area providing outdoor and covered space for repair and maintenance of mining and support equipment. There will also be a mine shuttle bus terminal and parking area to provide space for mining and support staff not using the shuttle buses from the park and ride facility.

The design and sequencing of the enabling works, and the earthworks and surface water management designs have been developed to an advanced level of detail. Engineering work has been completed to a lesser degree on the welfare building, which will not be constructed until later in the schedule and further work will be needed at the next stage of study / detailed design. The designs appear sufficiently detailed and to have been well considered and fit for purpose.

## **11.5 Mineral Transport System**

### **11.5.1 Summary**

The MTS will connect the mine site at Dove's Nest to the MHF at Wilton and has been designed by Arup, Worley Parsons, Joy and KHI. It comprises a 37 km long tunnel with a diameter of 4.3 m which provides an infrastructure corridor between the mining production shaft at 360 m Level and the MHF to accommodate the following elements:

- the ore conveyor system for primary crushed polyhalite ( $P_{100}$  of 150 mm) with bulk density of  $1.8 \text{ t/m}^3$ ;
- a narrow 768 mm gauge rail system for access and maintenance;
- high voltage 66 kV power supply cable to the mine with provision for a second;
- addition support services - fire detection, communications, safety equipment;
- central drainage system from the mine, tunnel and shafts; and
- a ventilation system.

### **11.5.2 Geotechnics**

FWS produced a factual report on data from six boreholes drilled along the MTS corridor to identify and characterise ground conditions. The six boreholes intersected the MTS elevation and were geologically and geotechnically logged and samples obtained were sent for geomechanical testing. The drillholes were surveyed using downhole geophysics and were used for hydrogeological testing. It is proposed to carry out a second phase of investigation to intersect specific structures and fill data gaps at a later stage of the Project.

SRK focussed its review on the core from approximately 15m above the crown of the tunnel, the approximately 5 m tunnel intersection and approximately 5 m from the invert of the tunnel. The six boreholes at these elevations intersect unfaulted Redcar Mudstone.

Bedding plane laminations contained within the Weak to Very Weak Redcar Mudstone will be a consideration in the MTS tunnel support design to reduce bedding plane separation. Slake durability test results indicate susceptibility to moisture and the need for sealing.

SRK considers that the ground investigation carried out by FWS is sufficient for this stage of the Project. The next phase of site investigation should be undertaken in the immediate areas surrounding the likely MTS route. A surface geophysical programme to identify the location and condition of the faulting together with advance drilling during construction should be considered in the second phase of investigation. Following the geophysical programme, infill drilling along the line of the tunnel should be considered.

### 11.5.3 Tunnel Design

The design criteria proposed for the MTS is for a low serviceability tunnel with a design life of 50 years. Civil engineering specialists, Arup, investigated the MTS alignment, defined design sectors and proposed a structural support system that consists of a fully segmented pre-cast concrete liner. This system negates the tendency of the Redcar Mudstone to deteriorate with time and can provide adequate support in all of the anticipated conditions. SRK concurred with that design to achieve a long term low risk and low maintenance facility and endorses Sirius's plan.

Further ground investigations focusing on the tunnel alignment, and specifically investigating known faulted ground are recommended for the tunnel boring whichever lining method is adopted.

### 11.5.4 Hydrogeology

With the MTS being mostly located within the Redcar Mudstone, it can be expected to have low hydraulic conductivity. The alignment will avoid the base of the glacial till at the approach to the Wilton portal and will also avoid historical ironstone workings and old flooded mines.

Management of groundwater is proposed by probing ahead of the MTS tunnel excavation and grouting to control water ingress at the Wilton portal and wherever faults are encountered along the alignment. Tunnelling will be on shallow inclines so that seepage waters flow away from the construction face.

During construction, water will flow to the Wilton portal and to sumps located at the Doves Nest and Lockwood Beck caverns. During the operational phase, drainage will occur via the MTS tunnel to the Wilton portal.

Seepage control measures are included for the finished MTS. This seepage will pass along bedding gravel under a pre-cast concrete invert and in to a 12 inch perforated pipe.

The most likely post construction inflow rate is 117 L/s generated by the tunnel modelling excluding additional inflow from the mine and shafts.

Investigations on the MTS were carried out by FWS and FUGRO in 2014 along the tunnel alignment to collect geological, geotechnical and hydrogeological information.

The hydrogeological information included a total of 43 packer tests in seven boreholes (and the collection of groundwater and pressure measurements in five of these holes).

Fifteen Packer tests were performed in the Redcar Mudstone indicating that the hydraulic conductivity of the mudstone is low, ranging between  $3.7\text{E-}10$  m/s and  $1.4\text{E-}07$  m/s for the matrix and as high as  $5.9\text{E-}07$  m/s for intervals that intersected minor fissures. One hole intersected the Lealholm Fault, the major known fault along the alignment.

Inflow sensitivity studies performed show that peak flows may be as low as 17 L/s or as high as 385 L/s, which reflects the uncertainty associated with the small data set that exists for the site.

The evaporation modelling has shown losses due to this phenomenon may be quite significant compared to total inflow; for example, the central 'design' evaporation rate (95 L/s) works out to be about 80 % of total inflow to the tunnel (117 L/s).

The most prominent risk flagged at the front of the register is to the construction contract due to the limitations of the ground investigation along the tunnel, particularly with regard to the conditions at the faults. SRK recognises, however, that Sirius proposes to carry-out additional ground investigations to inform the final tunnelling contract. Comprehensive investigations are also proposed to comprise geophysics, lithological logging, geomechanical testing and packer testing in a targeted series of vertical and inclined holes. The approach of a fully concrete segment lined tunnel will minimise schedule risk and the additional ground investigation planned should enable the schedule to be confirmed as appropriate.

### 11.5.5 Infrastructure

#### *Conveyor System (Joy)*

The ore conveyor system will consist of two belt conveyors between Doves Nest and Lockwood Beck and Lockwood Beck and Wilton of 23.8 km and 12.8 km respectively. The total lift across the system is 176 m. There will be five horizontal curves located along the MTS tunnel and the belt designers have assumed 6,000 m horizontal radii. The belt will run at a speed of 7.5 m/s. SRK notes the bulk density of the crushed polyhalite is 1.8 t/m<sup>3</sup> based on benchmarking from neighbouring operational data. The conveyor system has a total installed load of 16.8 MW.

#### *Rail System (Arup)*

The following design points are noted for information:

- the maintenance train would be a "Schoma" type diesel or equivalent battery locomotive;
- the track will be a single line with a passing loop at Lockwood Beck cavern and stabling points at Doves Nest and the MHF;
- the majority of rails will be mounted on pre-cast invert segments;
- "spaceproofing" has been undertaken to inform the overall tunnel design including static, kinematic and swept envelopes to model the anticipated movement, required clearances and tolerances for the locomotive and intended payload; and
- operational speeds vary between 7 mph and 18 mph depending on gradient.



### *Space Proofing (Arup)*

Space-proofing of the tunnel has been carried out by Arup and incorporated the rail system and conveyors, the Phase 1 and Phase 2 power supply cables, as well as support infrastructure such as local power supply, safety equipment, communications, site drainage for NDWW (contact water) and working room for access and maintenance and inspection.

### *Box-cut and Wilton Portal (Arup)*

The MTS portal at Wilton will be developed in made ground, glacial till and Redcar mudstone formation. The box cut design consists of an open trough and closed box cut and cover tunnel comprising reinforced concrete. The conceptual design was based on this available preliminary data from the MTS borehole.

### *Shafts (Worley Parsons)*

There will be two access shafts to the tunnel, which will be used for TBM launch and operational access.

## **11.5.6 SRK Comments**

The Level 3 detailed project schedule takes into account the ground type being developed and the type of ring segment being installed and the development rate of the TBM's vary accordingly. These development rates have been benchmarked against similar projects and are in line with other similar developments utilising this type of equipment.

It is anticipated that outstanding ground investigation and the required detailed design work for the tunnels is to be carried out during the excavation of the shafts/ portal and the launch chambers. SRK notes that there is sufficient time to carry out this work to a high degree of accuracy and further refine the tunnel design.

The Level 1 schedule indicates that there is a total period of five years to access, develop and commission the tunnels which would appear reasonable and in line with similar projects globally. The three TBMs will operate concurrently which is typical for this type of tunnelling project.

The MTS conveyor was designed by Joy. Based on SRK's discussions with Sirius, SRK understands the conveyor design has developed through a number of iterations and that Sirius has since discussed the designs with a number of OEMs who have validated the overall design and offered variations but along the same theme; SRK understands the main point of discussion was the number of conveyor flights and location of booster drives. SRK notes the overall capital cost appears reasonable and is built from first principles. A component of the conveyor capacity at the proposed 20 Mtpa is driven by conveyor speed which, at circa 8 m/s, which is relatively high however SRK also understands that Sirius has undertaken detailed discussion with conveyor designers and manufacturers to confirm these speeds are achievable, assuming that the design speed meets the anticipated Phase 2 production rate. SRK notes the opportunity to review the power requirements for Phase 1 and defer some capital cost for the conveyor.

It is evident from the documents and discussions that considerable work has been undertaken on the development and optimisation of the tunnel and in particular the space proofing aspect to reduce the tunnel diameter as far as is practicable.

In groundwater management terms, the concepts that underpin the basis for design of the MTS are sound, while further investigations are planned to address the uncertainties in respect of the ground conditions.

The preferred contractors for the shaft sinking and tunnel development have presented schedules to develop the necessary infrastructure and the overall project schedule has been aligned to these. As with all major construction projects the potential exists for project overruns however contingency has been allocated in line with the confidence in the data on which the design and scheduling decisions have been made. The financial section presented later on in this section includes an analysis to show the sensitivity of the project to construction delays.

## **11.6 Materials Handling Facility**

### **11.6.1 Introduction**

KHI is responsible for civil and structural aspects of the MHF design. This section focuses on the support and ancillary infrastructure. The mineral processing flow sheet and design is discussed earlier in this report.

The Wilton site is located adjacent to the A174 and 3 km south of the quay-side of the bulk terminal facility. The MHF will be constructed on a parcel of land within the boundary of the Wilton site which is cleared and levelled. The overall site is a multi-occupancy manufacturing and industrial site owned and operated by Sembcorp, a utilities company that can provide utilities to site occupants as well as providing overall security. The site was originally owned by ICI. Sirius's parcel of land is 36 ha in size and Sirius has an option on the land, under freehold rights, to accommodate the buildings and plant required for processing the polyhalite ore, along with the tunnel portal for the MTS. The 36 ha site is currently with three landowners, with all of whom there is an option to purchase the freehold.

### **11.6.2 MHF Design**

Structures have been designed to house the processing, product storage, reclaim, and conveying equipment. There are also various ancillary facilities (workshop, stores, change-house, office, etc) to support the process facility, utilities supply and distribution and the general supporting civils, bulk earthworks and surface water management.

It is anticipated that all utilities will be supplied by Sembcorp. Communication and SCADA systems will be project-wide integrated systems. To access the Project's MHF site, all vehicles and personnel would need to pass through the Sembcorp safety and security system.

A civil and earthworks design basis was developed which presents the assumptions for the design of structure foundations, earthworks and surface water management. The assumptions are based on a comprehensive desk study and preliminary risk assessment on the MHF site and progressed on the MTS focused borehole (MTS-1) located approximately 370 m to the southeast. From this work, a ground profile and preliminary geotechnical and contaminated land comments have been developed using acquired historical investigation data (dated 2002). A site wide topographic survey was procured.

Around 50% of the land is indicated to be “greenfield” and, based on historical maps, does not appear to have been subject to previous development. The remaining has been previously developed. Overall, the data reviewed confirmed localised areas of contaminated soils and other areas with the potential for contamination.

### 11.6.3 SRK Comments

SRK has visited the Wilton site and observed the overall facilities and viewed the parcel of land for which Sirius has secured an option.

A benefit of the Wilton site is that it is readily available land, is close to existing road and rail infrastructure and has readily available utilities supply from SembCorp, who SRK understands has overcapacity arising from significant decommissioning on the Wilton Complex in the recent past. The proposed ancillary facilities appear sufficient to support the MHF's requirements.

Using the available data, KHI has designed the facilities and produced general arrangements as well as plan and elevation drawings. The designs appear to be sufficiently detailed and to have been well considered and fit for purpose.

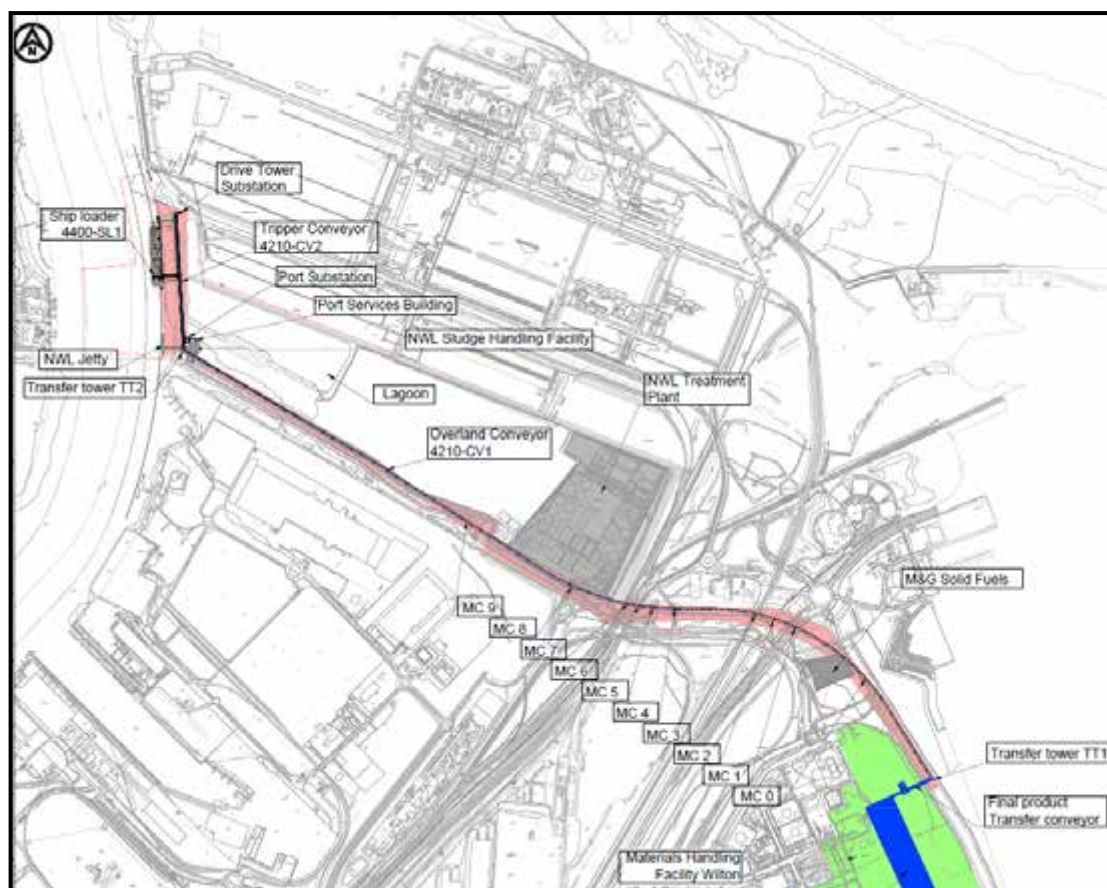
Although the facility designs have been advanced, a site specific ground investigation has yet to be carried out with the geotechnical analysis having been largely a desk top study and there is a risk that unforeseen material may be encountered requiring off-site disposal, containment or remediation. Notwithstanding this, Sirius has a good level of historical geological, geotechnical and geo-environmental data (which is fairly typical for developed areas of the UK) and early indications are that the site doesn't hold significant contamination. Therefore the absence of a site investigation isn't considered unreasonable at this stage and Sirius will be conducting further investigations in due course. In SRK's opinion, there is enough time in the schedule to deal with this work provided the investigation and enabling works design is undertaken early on in the process.

## 11.7 Bulk Terminal Facility (Port)

### 11.7.1 Description

The port area under consideration is highlighted in red in Figure 11-2. The text in this report assumes that the port will be constructed and operated by Sirius as envisaged in the DFS but SRK notes that Sirius' implementation strategy assumes that this aspect of the Project is outsourced, the implications of which are presented in Section 13.

The port area starts at the point where the overland conveyor exits the MHF at Wilton and extends to where the berthing facility will be located at Bran Sands on the eastern side of the Tees Estuary, immediately upriver from the former Redcar Steelworks site. Once at the transfer tower (“TT2”: see Figure 11-2) the conveyor runs parallel to the berthing face of the quay.



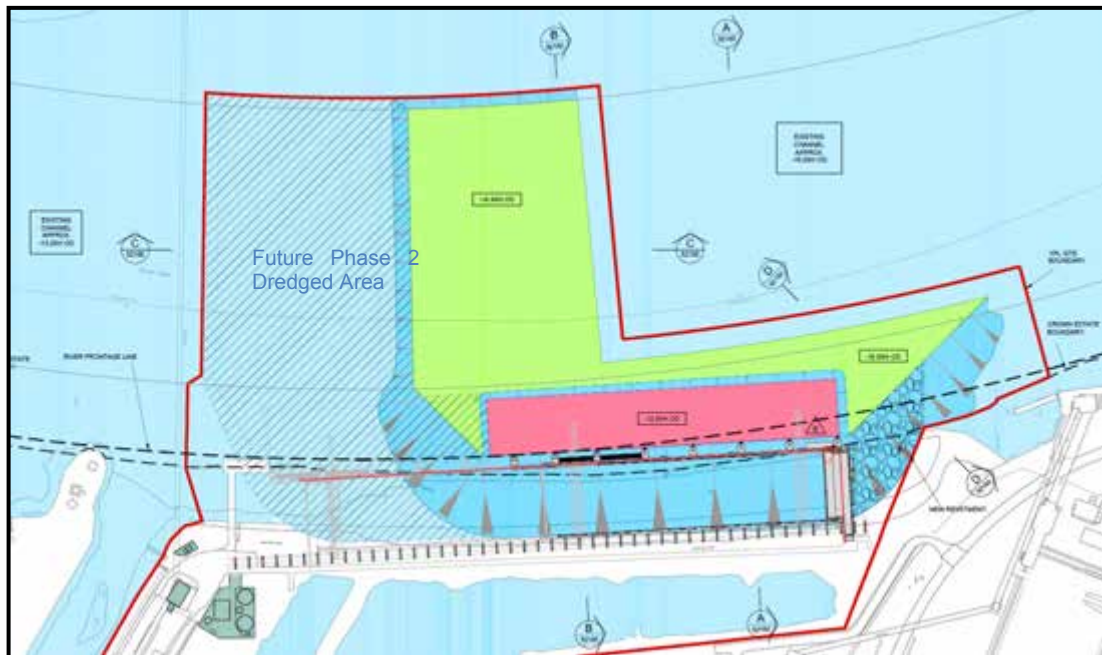
**Figure 11-2: General Layout (ref. extract from Drg.No. 25900-RHD-JOY-4000-53001, DFS)**

Sirius scoped two overland conveyor route options; a southern route, and a northern route. Although both routes intersect a significant existing linear infrastructure (roads, rail, utilities), and Sirius has initiated discussion with the respective owners of such, the southern option was preferred and initially presented in the Feasibility Study on the basis of fewer transfers intersections and an existing wayleave south of the water treatment plant. However, the Development Consent Order (DCO) issued in July 2016 gives consent to the northern route only, which now requires design development at the next stage of study.

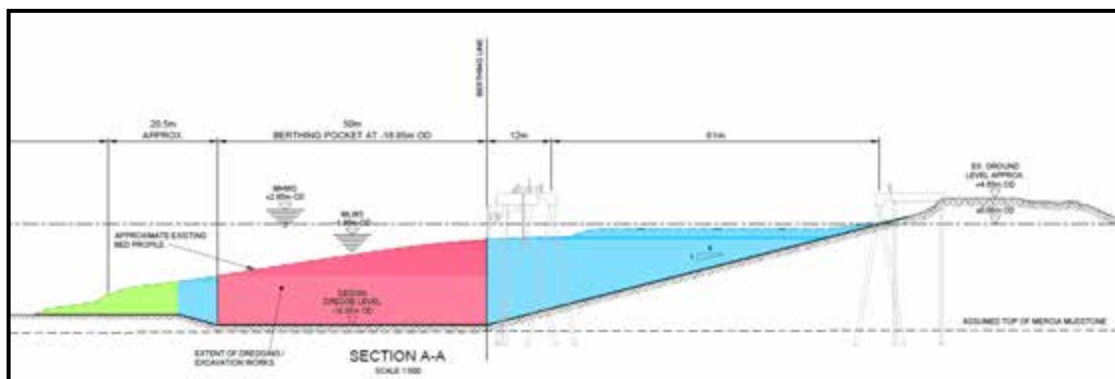
The Phase 1 berth is to be located at the northern end of the river frontage and will be constructed first (Figure 11-3). The quay consists of two independent reinforced concrete rail beams supporting a 61m gauge ship-loader for loading the bulk material into the vessels. These beams are held in place by raking piles with no decking in between, except for just a small area at the northern end that will be used as a maintenance area. There is an entirely separate row of piled dolphins in front of the piled rail beams to support the fendering and mooring elements. These structurally independent dolphins are intended to keep the ship away from the loader and its supporting foundations. Phase 2 will replicate Phase 1 with an extension to the southern end of the river frontage.

Dredging levels seem adequate for the ship data given the sequence of arrival, loading and departure of the bulk carriers. SRK notes loading operations are to be suspended for the rainfall intensity >0.5mm/hour (700 hours downtime per annum).

To cater for the large bulk vessels, the approach channel is to be dredged for navigational purposes to -16.85mOD in close vicinity to the berth. A berthing pocket is also to be dredged to -18.95mOD immediately in front of the quay (see Figure 11-3 and Figure 11-4). The capital dredging volume in Phase 1 is estimated as 750,000m<sup>3</sup>, of which 190,000m<sup>3</sup> is expected to be backhoe dredging of hard mudstone which may require pre-fracturing. There are high contaminant levels in the upper bed level which will require treatment prior to disposal. Budgetary costs for dredging and disposal have been obtained from PD Ports Limited (PD Ports) and other providers. These costs have been used for capital and maintenance dredging (berth pocket only) estimates.



**Figure 11-3: Phase 1 Dredging plan also showing the berth construction outline in grey (ref. Drg. Nos. 25900-RHD-S00-4500-52100 Rev B & -52150 Rev A)**



**Figure 11-4: Phase 1 Dredging section also showing the berth construction outline in grey (ref. Drg. Nos. 25900-RHD-S00-4500-52100 Rev B & -52150 Rev A)**

Together with the frontage area, required for the development of the port, the parcel of land under option and which Sirius must purchase also includes the Bran Sands Sewage Treatment Plant and the Bran Sands Landfill (now disused). The Bran Sands Sewage Treatment Plant is owned and operated by Northumbrian Water Limited (NWL Treatment plant, Figure 11-2). The landfill site, which underlies the Bran Sands plant and extends northward has been capped and is currently being monitored by the *Environmental Agency*. Landfill gas is being drawn from the site. If purchased, Sirius would acquire the entire parcel of land, including all liabilities, and also become landowner. The environmental liabilities associated with the purchase of Bran Sands have been assessed in two documents; 'Phase 1 Environmental Liability Assessment' dated November 2012 written by AMEC, and 'Title and Option Report' written by Pinsent Masons dated 1 March 2013.

Regarding the ground surveys necessary for informing the design, some on-shore investigation data is available and has been used but no specific off-shore ground investigation has been carried. SRK understands from discussions with Sirius and RHDHV that knowledge from recent construction work along adjacent sections of the water way was used to assist in the design. The stratigraphy and volumes used in the calculations are based on this available data. A buried services survey has yet to be carried out. Resulting geotechnical risks have been identified in Report 25900-000-G65-GAM-01100 Table 11-10 by RHDHV.

The construction of the port is reliant on retaining the option on the land and obtaining agreement with the Crown Estate for the Project which will be required for the dredging and construction of the quay.

### 11.7.2 Construction Schedule

The Phase 1 construction programme indicates EPC contract award and start of construction in July / August 2019. Practical completion of port would be November 2021, which we would expect to include erection and testing of the shiploader. In SRK's opinion, the overall schedule: mine shaft sinking and tunnelling work are the critical path for the Project and there is adequate time for construction of the port.

### 11.7.3 SRK Comments

Considering the loading operations, we suggest deployment of lightweight hold covers might assist in minimising downtime due to expected rainfall. This can be considered during the next stage of design.

With the berth pocket to be dredged deeper than the approach channel, siltation of the pocket is likely to occur. Dredging of the channel will fall within the ports authority charges however dredging of the berth pocket may attract a premium and Sirius has therefore included an allowance in the operating costs for this based on the communications with PD ports and RHDHV.

Further mooring analysis work is required at the next stage of design. Although the tonnage of the bollards has been identified, the worst case mooring arrangements for a given spectrum of vessels, say 30,000 DWT, 50,000 DWT and 85,000 DWT has not been provided. This further work would ensure layouts of the bollards do not prohibit access for the wide load spreader nor put too high a load on an individual bollard.

The geotechnical / ground engineering risks identified in Report 25900-000-G65-GAM-01100 Table 11-10 have been identified by RHDHV and should be carefully considered. The results of the surveys will impact the following elements:

- a) Requirement for ground improvement works to improve the stability of the 1 in 4 slope to be formed between the dredged pocket and the lagoon embankment.
- b) The riverside piles required to be installed directly into the Mercia Mudstone with little or no overburden. The detail for toe anchorage proposed may require significant enhancement to ensure the required pile fixity is achieved.
- c) Significant buried services exist, which have not been defined at this stage. Definition of the services which affect the existing foundation designs and solutions, and perhaps the alignment(s) and the schedule.

While an offshore borehole survey has not yet been planned, given that very recent knowledge from adjacent construction work has been used and this has been coupled with existing desk study information, this is likely to have provided reasonable base data and allowed a full identification of the risks.

The piled Ship Loader Support Structures presents some risk as the rails are not structurally connected perpendicular to the ship loaders rails. It will be important that the combined displacement of both the waterside and landside rails does not exceed the ship loaders gauge tolerance which is assumed as 30 mm. During detailed design, the piles fixity point and stiffness will both have an effect on the outcome and should be considered carefully to ensure the displacement value is at a safe level.

SRK notes that scour protection has not been considered for the 1 in 4 dredged slope at the toe of the lagoon embankment.

RHDHV has provided a comprehensive list of risk to guide Sirius in the next steps of Project development. The risks seem well considered. In addition, SRK has recommended that Sirius:-

- undertakes a full mooring analysis with worst case ship layouts;
- ensures the lateral deflection of the rail beam is within the gauge tolerances of the wide span ship loader;
- determines if the geotechnical stability of the dredged slope between the lagoon embankment and the dredged pocket will require ground improvement/scour protection or additional support structures; and
- identifies any security risks and provide adequate precautions to the relevant code.

## 12 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND PERMITTING

### 12.1 Scope of review

The environmental and social review was prepared based on a visit to the mine head at Doves Nest on 11 January 2016, meetings with Sirius's Environmental Manager and External Affairs Director on 11 and 12 January 2016, and a desktop review of the following key documents:

- The Project DFS report (March 2016);
- Planning application for the Project, specifically:
  - The Mineral Transport System (MTS) and Mineral Handling Facility (MHF) Environmental Statement (Royal Haskoning DHV, September 2014);
  - Design and Access Statement (Cartwright Pickard Architects, Estell Warren, ARUP, Nathaniel Lichfield and Partners, September 2014);
  - Planning Statement (Nathaniel Lichfield and Partners, September 2014)
  - Statement of Community Engagement (Nathaniel Lichfield and Partners, September 2014);
  - Summary Project Description Document (Nathaniel Lichfield and Partners, September 2014).
- North York Moors National Park Authority Special Planning Committee Report (North York Moors National Park Authority, June 2015);
- Environmental Statement: Executive Summary (Amec Foster Wheeler, May 2015);
- The Project Harbour Facilities Order 201X Environmental Statement (Royal HaskoningDHV, March 2015);
- Notice of Decision of Planning Authority on Planning Application for mine head, MTS and MHF (North York Moors National Park Authority, 19 October 2015);
- Notice of Planning Permission for mine head, MTS and MHF (Redcar and Cleveland Borough Council, 24 August 2015);
- Planning Agreement pursuant to Section 106 Town and County Planning Act 1990 relating to land at Doves Nest and Lady Cross Scarborough, North Yorkshire (North York Moors National Park Authority, 19 October 2015);
- Planning Agreement pursuant to Section 106 Town and County Planning Act 1990 relating to land at Doves Nest, Scarborough, North Yorkshire (North Yorkshire County Council, 19 October 2015);
- Planning Agreement pursuant to Section 106 Town and County Planning Act 1990 relating to land at Wilton, Redcar (Mine and MTS) (Redcar and Cleveland Borough Council, 19 August 2015);
- Planning Agreement pursuant to Section 106 Town and County Planning Act 1990 relating to land at Wilton, Redcar (MHF) (Redcar and Cleveland Borough Council, 13 August 2015);



- Draft Construction Environmental Management Framework (Sirius, January 2016);
- Community and Stakeholder Engagement Framework (Sirius, January 2016); and
- The York Potash Harbour Facilities Order 2016 (2016 No.772)

As part of this review, SRK has provided comment on key environmental and social management aspects on the project including:

- status of planning permissions and permits;
- approach to environmental and social management;
- stakeholder engagement,
- technical environmental and social issues that if inappropriately addressed could lead to risks to the project; and
- status of closure requirements and costs.

The focus on this section is on potential risks to the project. Potential environmental and social impacts that can be readily addressed and/or do not have material cost implications have not been discussed.

## **12.2 Project setting**

### **12.2.1 Introduction**

The main components of the Project include:

- an underground mine located at Doves Nest, south of Whitby in North Yorkshire,
- the MTS consisting of a 37 km tunnel linking the underground mine with a portal at Wilton, Teesside inclusive of an intermediate shaft at Lockwood Beck (24 km from the mine head);
- the MHF associated with the portal site in Wilton; and
- port facilities at Bran Sands including a 3.5 km overland conveyor, a ship berth and ship loader located adjacent to the Port of Teesside on the River Tees.

The underground mine and southern part of the MTS are within the boundary of the NYMNP. The NYMNP is recognised for its expansive heather moorland vegetation communities and breeding bird populations.

### **12.2.2 Mine head**

The mine head is located at an elevation of approximately 200 m above ordnance datum (AOD) within the NYMNP. The shaft buildings and ancillary infrastructure are located within agricultural land associated with Doves Nest and the Haxby tree plantation to the southeast. Construction of the mine head and shafts is anticipated to last for 58 months (4 years and 10 months), with activities occurring 24 hours per day, 7 days per week. The closest communities are Sleights (3 km to the northwest), Sneaton (2.5 km to the north) and High Hawsker (4 km to the northeast).

The mine head site is drained by Sneaton Thorpe Beck which rises from springs and groundwater baseflow within the Dove's Nest site and drains towards the northeast. The headwater tributaries are characterised by small, narrow, low gradient channels that are incised into the underlying peaty silt deposits. The beck flows north and eastward into the Rigg Mill Beck which subsequently flows into the lower reaches of the River Esk and ultimately the North Sea. The geological formations underlying the mine head site include sandstone and fractured limestone units of the Ravenscar Group, which contain aquifers that extend to depths of 100 mbgl and are designated by the Environment Agency as Secondary A aquifers (an aquifer capable of supporting water supplies at a local scale, in some cases forming an important source of base flow to rivers). Lower permeability siltstone and mudstone layers, particularly the Whitby Mudstone, isolate the Ravenscar aquifer system from the underlying Lias Group. Potential impacts from the Project on groundwater aquifers have been assessed by the environmental assessment and are discussed further below.

The habitats located within the Doves Nest site comprise mainly of mixed arable farmland and coniferous plantation and are considered to be common with no special value. Notable species occasionally present include European protected bat species, breeding bird species of conservation concern, badger and common lizard. The site is located adjacent to but outside of the North York Moors Special Area of Conservation (SAC), Special Protected Area (SPA) and Site of Special Scientific Interest (SSSI) which occurs to the west and south of the site. These designations have been applied due to the presence of Northern Atlantic Wet Heaths European Dry Heath and Blanket Bog which are Annex I habitats, internationally important breeding populations of Golden Plover and Merlin and the wide range of habitats and species present in the moorland ecosystem. Ecological impacts during construction particularly from ground clearance and dust emissions would be managed through good practice construction measures and initiation of a landscape strategy.

Landscape value is high within the NYMNP and so surface infrastructure at the mine site has been designed to mitigate visual impacts. The mine head winding gear will be set on a platform approximately 5 mbgl and enclosed within the shaft buildings so that, once operational, there will be no traditional winding gear above ground and all equipment is housed in buildings with a maximum ridge height level just above the level of the surrounding new landforms. Mine buildings have been designed as low rise agricultural style buildings and excavated material is to be placed in landscaped mounds and bunds that will reduce the apparent height of the buildings and provide screening.

### 12.2.3 MTS

The MTS starts at a depth of 360 mbgl at the mine head, and steadily rises to approximately 270 mbgl at Lockwood Beck intermediary shaft site and to surface at Wilton (10 m AOD). The tunnel would be entirely constructed within the low permeability Lower Lias, Redcar Mudstone Formation. This formation lies beneath the sensitive (Secondary A) aquifer units of the Ravenscar Group in the central and southern sections of the tunnel length, and also the Cleveland Ironstone and Staithes Sandstone formations throughout the tunnel length. The Cleveland Ironstone and Staithes Sandstone formations are classed as Secondary A aquifer units but are not used for groundwater abstraction as they are local impacted by mine waters from previous ironstone mine workings. The tunnel has been designed to avoid known areas of contamination from historic mining activities.

The Lockwood Beck intermediate shaft site is not within a designated area but is 200 m from the North York Moors SAC, SPA, and SSSI. The most significant impacts expected from the MTS relate to visual impacts from surface infrastructure at this site. These impacts will, however, be mitigated via the development of a landscape restoration strategy. Blast-induced vibration impacts are also expected from construction of the shaft, but these will be managed through restrictions on blasting activities and meeting specified vibration limits.

#### **12.2.4 MHF**

The MHF is located on the eastern edge of the Wilton International industrial complex in Teesside, an area currently dominated by chemical industries. The Wilton site is surrounded by security fencing and is provided with industrial services including roads, general water, fire water, surface water drainage, steam and power. The MHF site is generally flat and is covered in pasture, however, there are some small remnants of older industrial facilities which have since been demolished. These areas still contain old foundations and some buried pipework. The residential community of Dormanstown, population of around 6,000, is located approximately 1 km to the east of the MHF site. The activities would be visible from residential properties and users of surrounding public open spaces and rights of way until proposed woodland planting matures to screen the site.

The site is drained by the Mill Race, an historic channel dated to the 19th century, which drains into the Mains Dyke. The Mill Race is largely dry during normal flow conditions, although it may receive water from surface runoff and backwater effects from Mains Dyke during periods of heavy rainfall and high flows. The Mains Dyke flows south to north along the eastern edge of the site and ultimately flows into the Tees Estuary.

The site is not located within a statutory or non-statutory designated nature conservation site. The closest statutory designated nature conservation site is the Teesmouth and Cleveland Coast SPA and Ramsar site, approximately 2.3km north at its closest point and provides feeding and roosting opportunities for important numbers of waterbirds in winter and during passage periods. The closest non-designated site is the Coatham Marsh Local Wildlife Site, which is approximately 1.1km to the north-east and is of regional importance for wintering birds and local importance for breeding bird populations.

#### **12.2.5 Port**

The MHF is 2 km from the deep water tidal facility at Bran Sands on the River Tees where the port facility will be located. The port will be constructed within an undeveloped section of the River Tees frontage. The area is entirely industrial; upstream of Bran Sands is an operating container terminal and Teesport and downstream is a steel export quay, and several dock facilities capable of handling petroleum and petrochemical products. The closest residential receptor is Dormanstown located 3 km from the proposed terminal and 100 m from the conveyor at the closest point.

Regional heavy industrial activity has resulted in the Bran Sands site soil and groundwater and the Tees estuary sediments containing elevated levels of metal, hydrocarbons and other contaminants. This has been taken into account in the design of the port facilities. An allowance is included in the design and cost estimate for dredging and disposal of contaminated material using current maintenance of dredging of the estuary navigation channel as a reference point.

The Tees Estuary has also been modified by the construction of breakwaters and port infrastructure but still retains some intertidal sand and mudflats, rocky shore, saltmarsh and sand dunes. Although the proposed port footprint is not within a protected area, a number of sites are designated for nature conservation value, including the Teesmouth and Cleveland Coast Special Protection Area and Ramsar site for marine and coastal water birds and six other SSSIs including Seal Sands which is an important haul-out site for grey and common seals. While most commercial fishing activities happen offshore, Tees Bay and the Tees estuary also provide important habitats for fish species and provide passage routes for salmon and sea trout migrations which peak in July or August.

The port terminal along the river frontage is within the environmental permit boundary of the Bran Sands landfill site. The site has been capped, but the Environment Agency retains an interest in the area covered by the environmental permit in relation to leachate and gas from the landfill. While the footprint of the port facility does not overlap with the extent of the landfill, Sirius has acquired responsibility for the landfill as part of the land purchase for the Bran Sands facility.

## **12.3 Environmental and social approvals**

### **12.3.1 Background**

In the UK, mineral development proposals are subject to two different but linked approval processes: planning permission and environmental permitting.

In England, spatial planning is regulated by the Town and Country Planning Act 1990. The system is used for review and approval of a proposed Project in terms of sustainable development, alternative land uses and impacts within the overall spatial planning framework for the area. The planning permission process provides the primary approval for a development and is administered by the Local Planning Authority (LPA). In the case of mineral development projects, the LPA is designated as the Mineral Planning Authority. Planning consent is obtained through the preparation and submission of a Planning Application, which includes an Environmental Statement (ES) prepared by means of an Environmental Impact Assessment (EIA) process.

Environmental permitting is regulated by the Environmental Permitting (England and Wales) Regulations 2010. It is a separate but parallel process to planning permitting and is used to develop operating performance criteria. In England, environmental permitting is administered by the local authority and the Environment Agency, depending on the facilities being permitted. The Environment Agency also advises the planning authority in setting environmental conditions on the planning permission. There are some activities, for example water abstraction and discharge, which are not incorporated in either permitting system and require separate permits.

### 12.3.2 Planning permission

Due to the type and locations of the four main project components, separate planning application processes were followed for each component. The application process, consenting authorities and status of the planning applications are presented in Table 12-1. Notably, Sirius has obtained planning permission for all project components. The Project has approval for the winning and working of the polyhalite form of potash mineral and trace minerals intermingled with the polyhalite only. Sirius is required by the planning conditions to commence construction within three years from the date of this permission.

The planning application for the mine head and MTS operation was submitted to both the NYMNPA and Redcar and Cleveland Borough Council (RCBC) because the planned route of the MTS crosses the administrative boundary between the NYMNPA and RCBC.

**Table 12-1: Status of planning applications for the Project**

Project component	Application process	Determining authority	Date application submitted	Date of decision
Mine head and MTS	Mineral Planning Application under Town and Country Planning Act 1990	NYMNPA and RCBC	September 2014	Permission granted by RCBC August 2015 and by NYMNPA October 2015.
MHF	Mineral Related County Matters Application under Town and Country Planning Act 1990	RCBC	September 2014	Permission granted August 2015
Port	Development Consent Order under Planning Act 2008	Secretary of State for Transport following examination by the Planning Inspectorate	March 2015	Permission granted July 2016.
Construction accommodation and construction worker park & ride facility	Planning Application under Town and Country Planning Act 1990	Scarborough Borough Council	February 2015	Permission granted August 2015
Whitby operations park & ride facility	Application under Town and Country Planning Act 1990 (to be submitted by North Yorkshire County Council)	NYMNPA	January 2015	Permission granted August 2015

The proposed port facilities are classified as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008, which required Sirius to request authorisation via a Development Consent Order (DCO). When issued, a DCO combines the granting of planning permission with other consents that in other circumstances have to be applied for separately. The DCO, entitled “The York Potash Harbour Facilities Order 2016”, was granted on 20 July 2016. Following the decision on the DCO, there was a six week period in which a judicial challenge could be made but none were forthcoming.

### *Planning conditions*

Due to the size of the proposed development, the planning applications and DCO applications required the completion of an EIA process. A single overarching EIA report (Environmental Statement) was submitted to cover the mine, MTS, and MHF facilities in September 2014. A separate Environmental Statement was prepared and submitted for the port facilities in March 2015. The environmental and social management measures included in the Environmental Statements are used by determining authorities to set conditions of approval (planning conditions) for the development.

Planning conditions for the mine head, MTS and MHF are attached to the planning decision notices received by Sirius in August and October 2015 and were the subject of some negotiation between Sirius and the authorities prior to issue. A total of 130 planning conditions were received and these conditions of approval legally supersede the management commitments provided in the Environmental Statement. The exception to this is where the planning conditions refer directly to the Environmental Statement.

Sirius is implementing a programme to manage compliance with planning conditions for the mine head, MTS and MHF. This programme identifies responsibilities of Sirius and its contractors for ensuring that relevant conditions are discharged as appropriate, either prior to commencing or during the development. Documents for discharge of planning conditions are prepared by Sirius and specialist external consultants, with input from the relevant site contractor. Sirius has also conducted a series of meetings with regulatory authorities to agree on the interpretation of conditions prior to deliverables being submitted for approval, as well as the proposed schedule for meeting the conditions.

Sirius is discharging planning conditions for the mine head, MTS and MHF in a phased manner correlating with phases of site activities. Planning conditions for Phase 1 (highway works at the mine head) have been discharged. Discharge of planning conditions for proceeding with Phase 2 (site preparation works at the mine head) have been submitted to NYMNP with a determination expected in March 2017. Discharge of conditions for highway works and site preparation at Lockwood Beck have been submitted to RCBC on a parallel programme with a determination also expected in March 2017. Site preparation works at both the mine head and Lockwood Beck are scheduled to start early in Q2 2017 once the conditions have been discharged.

“The York Potash Harbour Facilities Order 2016” is a 100-page statutory instrument containing legal requirements that Sirius will need to comply with. Requirements include the need to submit a written scheme setting out all the component parts of the development to the local planning authority for approval prior to the start of construction. The DCO also includes a Deemed Marine Licence that contains some 42 conditions of approval.

### *Section 106 Agreements*

In addition to planning conditions, agreements pursuant to Section 106 (S106) of the Town and Country Planning Act 1990 have been entered into by Sirius and the determining authorities to regulate aspects of the development not dealt with by planning conditions (Table 12-2).

**Table 12-2: Section 106 Agreements associated with planning permissions**

Authority for Section 106 Agreement	Related permission	Date of agreement
NYMNPA	Mine head and MTS	19 October 2015
NYCC	Mine head and MTS	19 October 2015
RCBC	Mine head and MTS	19 August 2015
RCBC	MHF	13 August 2015
RCBC	Port	19 October 2015

The obligations generally relate to payment of monetary contributions to offset potential impacts. The expected cost implications of the S106 agreements are in the order of USD 40 million (M) during the first 10 years of the development and USD 2M for each year of operation thereafter. Sirius is obligated to have payment security arrangements in place at the start of construction sufficient to pay all S106 contributions due for approximately 12 years thereafter. Sirius intends to place a cash amount in an escrow account for this purpose. The authority would be able to draw on the escrow in the event that Sirius was to default on payment. Expenditure relating to S106 contributions and the associated security arrangements is included in the financial model presented later in this report.

Examples of activities that will be funded through S106 contributions are as follows:

- planting of mixed deciduous woodland to offset carbon dioxide production (Core Policy D contribution);
- mitigation and compensation for landscape and ecology impacts;
- establishing a new rail service between Middlesbrough and Whitby and upgrading the rail infrastructure required to facilitate the additional service;
- upgrading of road junctions and repairs to roads used by the Project;
- contributions to fund tourism promotion activities by Welcome to Yorkshire, NYMNPA, local businesses, VisitEngland VisitBritain, Whitby tourism, signage and a tourism impact review;
- contributions to projects involving enhancement of local employment opportunities, training and development; and
- establishment of a multi-stakeholder liaison group to review issues during construction and funding reinstatement works in the event the mine closes prior to operation.

Of the activities listed above, the first two will take up the majority of the S106 contributions. Contributions for these activities, which focus on offsetting carbon emissions and compensation measures for landscape and ecology impacts, will comprise about one third of the total in the first ten years and about 85% of the total over the remaining life of the mine.

### *Amendment to original planning permission*

In parallel with the activities discussed above, Sirius is preparing to submit an application for a minor material amendment to the existing planning permission for the mine head and MTS, under Section 73 of the Town and Country Planning Act 1990. The amendment seeks to incorporate design changes to the project that were not included in the original planning application, but are now desirable. Under the Town and Country Planning (Environmental Impact Assessment) Regulations 2011, an application of this nature is considered to be a new planning application and will require the planning authority (NYMNPA and RCBC) to make a determination on whether additional information needs to be added to the Environmental Statement to reflect the proposed project changes. NYMNPA and RCBC will also determine requirements for statutory consultation as part of the EIA process. Whether changes to the original Environmental Statement are required or not, an Environmental Statement must be submitted with the Section 73 application for development.

A positive determination of this process would result in a new planning permission describing the development and a revised list of planning conditions. In the event that the application is refused, the original permission with existing conditions remains in place.

### **12.3.3 Secondary permits**

In addition to the primary planning approvals, a number of secondary permits will be required such as the environmental permit, water discharge permit, land drainage consent, spoil management permit, ecological licences and hazardous waste producer registration. SRK understands from Sirius that, as is the case with the discharge of planning conditions, secondary permits are also being obtained for each phase of development works. A land drainage consent has been obtained for Phase 1 (highway works at the mine head) and applications for land drainage consents for Phase 2 at the mine head and Lockwood Beck have been submitted. Sirius expects these approvals to be in place by the end of March 2017 and permits required for Phase 3 works are in the process of being applied for and will be in place before June 2017.

Sirius has developed a schedule to align application timeframes for permits required for construction with the construction schedule. Sirius expects that these will be obtained at the appropriate time. Sirius is in the process of determining responsibilities for obtaining secondary permits for construction and operation, but intends to ask contractors to identify and apply for the permits relevant to each construction work package. Sirius will retain responsibility for complex permits, permits that present high risks to the Project and permits for the operational stage.

Preparation of the main Environmental Permit application, including provisions for mine waste management, is underway. Sirius intends to initially apply for a Mining Waste Operation permit for temporary storage of non-hazardous non inert (NHNI) material. This is so a permit can be in place in time to receive NHNI material from the early excavation activity scheduled for July 2017. The Mining Waste Operation permit allows for NHNI to be stored for up to 12 months. This permit will therefore require a variation within this time to a more detailed Mine Waste Facility Permit. Sirius has reported to SRK that the Environment Agency have confirmed this approach is acceptable.



## 12.4 Approach to environmental and social management

Sirius intends to apply different approaches to environmental management for the construction and operation stages.

During the construction stage, Sirius will allocate responsibility for environmental management to the construction contractors. Sirius has developed a Construction Environmental Management Framework that describes the division of responsibilities for environmental management and a comprehensive review procedure.

Sirius will provide guidance to the contractors to standardise approaches and deliverables and will conduct auditing and review to confirm that the contractors are meeting the relevant compliance conditions and Sirius's expectations.

Sirius will develop an overall Environmental Project Execution Plan and ensuring that relevant environmental management requirements are incorporated into contracts. Sirius will then be responsible for ensuring that the contractors have the necessary environmental documentation and management systems to comply with the requirements. Sirius will monitor the contractors' compliance with requirements, develop and implement training programmes to raise environmental awareness and report on compliance and incidents.

At present, the Sirius environmental team comprises an Environmental Manager and an Environmental Management Assistant. Sirius recognises that additional staff will be required to manage and monitor the contractors during the construction phase.

Prior to the operational phase, Sirius intends to design and implement an in-house environmental management system for operations that will meet ISO 14001: 2015 requirements. During the establishment of this system, Sirius will review its internal resourcing for environmental management to determine the number of additional positions that will be required.

## 12.5 Stakeholder engagement

### 12.5.1 Introduction

Since the start of the Project in 2011, Sirius has prioritised developing and maintaining a social licence to operate through effective stakeholder engagement. Sirius has a comprehensive and active stakeholder engagement strategy that exceeds statutory requirements and aims to develop and maintain constructive relationships with stakeholders. The Project's known stakeholders have been identified as the Project has developed and a targeted approach has been taken to engagement methods, timing of engagement and delivering appropriate messages for each stakeholder group.

Engagement events and stakeholder issues have been recorded in a stakeholder database. The historical database is being replaced with a new database that incorporates an issue tracking system.

## 12.5.2 Engagement activities

### *Past activities*

Within Sirius, stakeholder engagement is managed by an External Affairs Director supported by an External Affairs General Manager and two liaison officers, supported by a specialist public relations agency, as required. Past stakeholder engagement activities have included consultation events to support the planning applications, a public affairs programme, stakeholder research, engagement for the education and skills development programme, distribution of corporate literature and community newsletters, media relations activities and maintenance of a Project-specific website.

Consultation activities related to the planning applications and EIA process commenced in 2011 with the launch of the Project website and preparation of local newsletters and leaflets. Formal scoping consultations for the Project occurred in 2012, followed by a series of eight public exhibitions to inform the application submitted in 2013, which was later withdrawn.

The responses collected from the scoping consultations and public exhibitions in 2012 were used to refine the Project design that was presented in the final planning application submitted in 2014.

Pre-application consultation for the 2014 application also included further scoping consultations based on the updated Project design and 10 public exhibitions held in mid-2014. The main issues raised during these consultation included

- increase in heavy good vehicle and other traffic movements;
- potential environmental impacts on existing water sources, wildlife and landscape, light pollution and noise during construction;
- the suitability of the National Park for this type of development;
- Project viability and the market for polyhalite; and
- local economic impact and allocation of jobs to local people.

Sirius responded to these comments in the Statement of Community Engagement that accompanied the planning application.

### *Future activities*

Future engagement activities are set out in Sirius's Community and Stakeholder Engagement Framework (CSEF) which describes the approach to community and stakeholder communications during the construction period. This process has been implemented and Sirius has commenced a dialogue with local communities. It outlines the overall strategy, a process for identifying the main stakeholders and details the engagement objectives and activities. It also sets out the roles and responsibilities for implementing and managing its delivery. Construction contractors will be required to implement community stakeholder engagement plans that comply with the CSEF. Construction contractors will be expected to have community liaison officers within their team that will implement their respective community stakeholder engagement plans and report to Sirius. Sirius will monitor contractors' performance and adherence to the CSEF.

A local liaison forum will be established prior to the commencement of construction. The forum will be chaired by Sirius and attended by representatives from planning authorities, parish and town councils, local residents and wider community stakeholders. At present the forum is expected to meet quarterly throughout the construction and post-construction period to provide regular updates on construction progress and listen to and resolve arising issues. In addition to this forum, a transport management liaison forum will also be established to specifically discuss transport-related issues.

Sirius does not have a grievance mechanism in place for managing complaints from external stakeholders but Sirius will expect contractors to establish and manage complaint procedures and report to Sirius on issues received.

### **12.5.3 Issues raised**

Sirius is committed to maintaining strong positive relationships with stakeholders throughout the Project's lifecycle. Sirius has gained support for the Project across key stakeholder groups; some 90% of people surveyed at the public consultation events indicated support for the Project. However, as a major development, the Project also has received opposition from some stakeholders. In particular, Natural England, Campaign for National Parks, North Yorkshire Moors Association, the Royal Society for the Protection of Birds, the Campaign to Protect Rural England (CPRE) and the Yorkshire Wildlife Trust objected to the planning application for the mine and MTS. These objections were largely based on landscape, visual amenity and biodiversity impacts and impacts of the proposed development on protected areas including the NYMNP. Objections received from other third parties related to the application being contrary to the aims and objectives of the National Park designation. Objections to the application were considered by the planning authorities but the application was approved. Sirius aims to respond to the concerns of opposition groups in a proactive manner.

### **12.5.4 Corporate social responsibility**

Sirius has set up the York Potash Foundation and intends to allocate 0.5% of gross revenue from the Project to local community programmes. Provision for this has been made in the Sirius FM presented later in this report.

Sirius also has a number of initiatives to build capacities of the local labour force. The York Potash Skills Strategy is used by Sirius to work closely with local schools, colleges and universities to support local students studying engineering and earth sciences. Sirius offers apprenticeships, bursaries and work experience to students and aims to expand training programmes for mining skills as the Project progresses.

## **12.6 Technical environmental and social matters**

Key technical environmental and social issues to be managed by Sirius in construction and operation of the Project that will have to be monitored carefully to ensure that the management measures are effective are listed below. These technical issues have been identified in the Sirius Environmental Statement and there are plans in place to address them.

*Groundwater drawdown at the mine head impacting areas of conservation importance:* During construction of the shaft platform and shaft sinking at the mine head, dewatering and reduced groundwater recharge are likely to result in a localised reduction in groundwater levels and changes in flow direction within the Moor Grit aquifer of the Ravenscar Formation. The DFS states that, if unmitigated, this could impact water dependent habitats at Ugglebarnby Moor, which is an area of conservation importance located adjacent to the mine head site. Sirius intends to install a grout wall along the edges of the shaft platform prior to excavation to restrict changes in groundwater flow to the platform area. While the Environmental Statement states this mitigation is likely to reduce impacts on Ugglebarnby Moor to minor significance and Sirius will monitor changes in groundwater level, SRK notes this issue to be of high concern to Project stakeholders and Sirius will be required to demonstrate that significant impacts are not occurring.

*Deterioration of surface water quality during construction:* During construction of the mine head and intermediate shaft sites, there is the potential for increased sediment loading and accidental release of lubricants and fuel oils to local water courses. Where water courses are already in poor ecological condition, the resulting deterioration of surface water quality could significantly affect downstream habitats. Sirius will be implementing standard good environmental management practice measures during construction to control releases to surface water courses however due to the period of construction (almost five years) and complexity of earthworks planned, this will be a significant challenge for the construction team.

*Impacts on the amenity of local area:* Some stakeholders have expressed concerns about aspects of the Project that impact on general amenity of the local area such as traffic (particularly increases in HGV volumes during construction), landscape and noise. Sirius has strict planning conditions relating to these aspects and it considers these conditions to be achievable. Sirius will have to ensure that it does not fail in this respect. Considerable attention will be paid by authorities and surrounding land users to Sirius's performance in these areas. The reputational risk associated a breach of the conditions could outweigh the actual environmental impact caused by the breach.

*Employment of local labour:* There is an expectation from Project stakeholders that local people and suppliers will be employed where possible to maximise the local and regional economic benefits from the Project. Sirius has publically stated that it expects at least 80% of the operational workforce will come from the local area and has a skills strategy to increase the local skills base. This undertaking covers the long term workforce. Sirius also intends to encourage local labour during construction, but has given no guarantees in this respect. While Sirius has been clear in its communications that expertise for construction will have to be brought in, there will be a need for ongoing communication during the construction phase to maximise local employment where possible and to manage expectations.

*Geochemical characterisation of mine waste:* Based on an assessment of 12 samples, the extractive wastes that will be generated by the Project are characterised as non-hazardous and either inert or non-inert according to criteria outlined in the 2008/98/EC Waste Framework Directive. The potential for extractive wastes to differ from the assessment documented in the planning application has been recognised as a potential risk for the Project. SRK agrees that this is a potential risk given the limited number of samples that have been characterised, meaning that spatial or lithological variations in waste may not be fully identified. However, the proposed waste management measures are conservative and thus it is not anticipated that realisation of this risk will result in additional costs to the Project, unless significantly greater volumes of non-inert waste are identified/generated. Sirius will undertake characterisation testing as waste is generated during the operational phase to ensure it is suitable for permanent on-site disposal. In addition, the preliminary Waste Management Plan will be updated to provide a full environmental risk assessment, including risks to groundwater and surface water. Sirius's extractive waste management plan will be subject to formal approval through the environmental permitting process to be undertaken as outlined in Section 12.3.3.

## 12.7 Closure requirements and costs

Restoration proposals are an integral part of planning application and project design to mitigate visual, ecological and noise impacts from the proposed development. Progressive restoration will therefore be implemented during and immediately following construction.

The closure plans developed for the project relate to decommissioning of the Project at the end of the expected 100-year life of mine. Separate decommissioning plans have been prepared for the mine head, MTS, MHF and overland conveyor system. The Project's port terminal is considered to be a long-term infrastructure development, and therefore no decommissioning plan has been prepared for this component of the Project.

The closure objectives for the mine head and MTS shaft sites are to return the land to agricultural, forestry or general amenity purposes in a safe and environmentally acceptable way. Closure actions will be designed to meet statutory requirements in place at the time of closure of the site produce stable landforms, reduce hazards to humans and animals and maintain or improve access and habitat for wildlife.

General closure activities have been determined but, due to the extended time to closure, the precise engineering methods have not been specifically determined as they will follow best practice at the time of decommissioning. The main risk at closure relates to management of groundwater and prevention of cross-connection between upper freshwater aquifer units and deeper saline or acidic groundwater types. This risk will be managed through the construction of engineered plugs to maintain vertical hydraulic separation of aquifer units.

On the basis of the conceptual plans presented in the planning application, the closure activities appear reasonable, however a more detailed decommissioning strategy will be required during operation to evaluate slope stability, groundwater flow and quality following site closure to ensure that restoration goals are adequately met while minimising the need for long-term maintenance.

Sirius expects to provide financial security for closure works for the mine head site and the intermediate shaft site at Lockwood Beck for the life of mine. The security will be in the form of a bond, guarantee, surety or deposit into an escrow account. The amount to be provided by Sirius will be determined on an annual basis by an independent surveyor during construction (and subject to indexation thereafter) and will reflect the costs required to re-instate surface works already completed and works planned to take place in the subsequent 12 months.

## 12.8 Risks

Sirius is proactively managing environmental and social risks to the Project in the forthcoming phases of development. Risks that SRK considers to be notable are listed below.

- *Securing permission for 20 Mtpa production rate:* There is a variation between the maximum production rate stated in the Planning Application and Environmental Statement of 13 Mtpa and the maximum production rate stated in the DFS of 20 Mtpa. While the base case production rate of 10 Mtpa stated in the Feasibility Study would be covered by the permission already obtained, a variation to this permission would need to be obtained for production to exceed 13 Mtpa. There is not expected to be a change to surface infrastructure as a result of the increase from 13 Mtpa to 20 Mtpa. Sirius has had discussions with the LPA and understands that an amendment to the current application, rather than a new permission, would be adequate providing there is no proven environmental impact resulting from the increased production rate. This will be pursued by Sirius nearer the time the permission is required. It is possible that further investment maybe requested through the S106 agreement but the scale of this investment, if any, cannot be determined at this stage.
- *Management of contractors' environmental and social responsibilities during the construction phase and securing of secondary approvals:* Sirius intends to share responsibility with contractors and subsidiary contractors for discharging planning conditions, obtaining the necessary secondary permits for construction and complying with environmental conditions relevant to their work packages. Given the complex nature of the construction schedule, minor delays in these activities could result in subsequent delays or changes to the overall construction timeline. Sirius is proactively managing and monitoring these processes.
- *Stakeholder engagement during construction:* Many of the issues of concern to stakeholders are expected during the construction phase. While Sirius is confident that planning conditions associated with these issues can be met, it is SRK's view that appropriate monitoring and communication with stakeholders will be essential to demonstrating that it is proactively managing impacts.

## 12.9 SRK Comments

SRK is of the opinion that Sirius is proactively managing environmental and social risks to the project in the forthcoming phases of project development as outlined in the previous section (Section 12.8).

Sirius has already obtained planning permission for all Project components. Planning conditions for the mine head, MTS and MHF are attached to the planning decision notices in August and October 2015. Sirius has developed a programme to manage compliance with the 130 planning conditions and discharge of these planning conditions has commenced. SRK notes that the planning conditions require commencement of construction of the mine head MTS and MHF within three years from the date of the permission. Regarding the port, Sirius has been granted “The York Potash Harbour Facilities Order 2016” that contains legal requirements and further conditions of approval and requires that construction commences within seven years.

In addition to planning conditions, planning agreements have been entered into by Sirius and determining authorities. These include obligations to make substantial payments to offset potential impacts. The cost implications are in the order of USD 40M during the first 10 years of the development and USD 2M for each year of operation thereafter. Furthermore, Sirius has set up the York Potash Foundation and intends to allocate 0.5% of gross revenue from the Project to local community programmes. All these costs are included in the Sirius FM discussed later in this report.

A number of secondary permits will be required such as the environmental permit, water discharge permits, land drainage consent, spoil management permit/s, ecological licences and hazardous waste producer registration. Sirius is implementing a programme for discharging planning conditions and obtaining secondary permits, which is linked with the construction schedule. Delays in obtaining these permits and discharging conditions could delay progress with construction and operation of the project and so it will be important for Sirius to monitor this and to take proactive action if required.

## 13 VALUATION

### 13.1 Introduction

For the purposes of the economic evaluation presented in this section, SRK has reviewed the assumptions in the Sirius Financial Model (Sirius FM) which is presented in nominal terms on a quarterly basis and re-presented all analysis herein in real USD terms on an annual basis. The focus of the review is the Phase 1 production capacity of 10 Mtpa, however, it is acknowledged that Sirius has developed additional production capacity scenarios of 13 Mtpa (Phase 2a) and 20 Mtpa (Phase 2b). These scenarios are discussed further in Chapter 14, Risks and Opportunities.

Given that there have been no material changes to the Project as envisaged in the DFS and presented in the CPR SRK produced in August 2016, the Sirius FM has not been updated since this time, remains the same as that presented in SRK’s August 2016 CPR and so all capital and operating cost estimates have a base date of January 2016. Projected revenues have been derived in USD and all operating costs have been derived in GBP and converted to USD at the flat rates shown below in Table 13-1. The native currency of the underlying capital costs is expected to be split between predominantly GBP, EUR and USD currencies; with the DFS defining a large proportion in GBP (some 67%), however, the relative proportions will be further defined through the ongoing procurement processes. It is noted that the Sirius FM currently assumes the DFS currency exchange rate assumptions as shown in Table 13-1 which are conservative with regards to GBP and EUR rates, relative to USD, as of

March 2017. SRK has undertaken a sensitivity analysis to show the impact of the project cashflows to the GBP:USD exchange rate given the significant change in exchange rate post-‘Brexit’ and this is discussed further in Section 13.7.6

**Table 13-1: Currency Exchange Rate Assumptions**

Currency	Rate to USD
USD	1.0000
GBP	1.4245
EUR	1.0831
ZAR	0.0629
AUD	0.7084

It is noted that the analysis and valuation presented herein may have differences to that presented in the Sirius FM as SRK has presented its analysis in real terms, on an annual basis (Sirius FM quarterly) and a different discount rate for the ‘Base Case’ (SRK 8% real compared to Sirius 10% nominal).

## 13.2 Production

The Phase 1 10 Mtpa mine plan assumes production commences in 2021 following some 6 years of construction and ramps up to steady state over a 3 year period with some 9.8Mtpa of mining from 2024 until 2071. The LoM mined tonnages total 463Mt of which some 242Mt (52%) is from areas classified as Indicated Mineral Resources and 222Mt (48%) from areas classified as Inferred Mineral Resources. As shown below in Figure 13-1, up to 2040 all ore is sourced from Indicated Mineral Resources, while between 2041 and 2060 approximately 35% is sourced from Indicated Resources and 65% is from Inferred Mineral Resources. From mid-2060 to 2071, all ore is sourced from Inferred Mineral Resources.

The Sirius FM does not reflect a mined/product grade and it is therefore assumed that the product grades meet the minimum requirement for mineral offtake agreements and sales on the open market without penalty. It is noted that the assumed LoM average grade is some 88% polyhalite. This compares to the Ore Reserve grade of 88.4% polyhalite which is generated from the Indicated Mineral Resources, and an Inferred Mineral Resource grade of 85.7%.

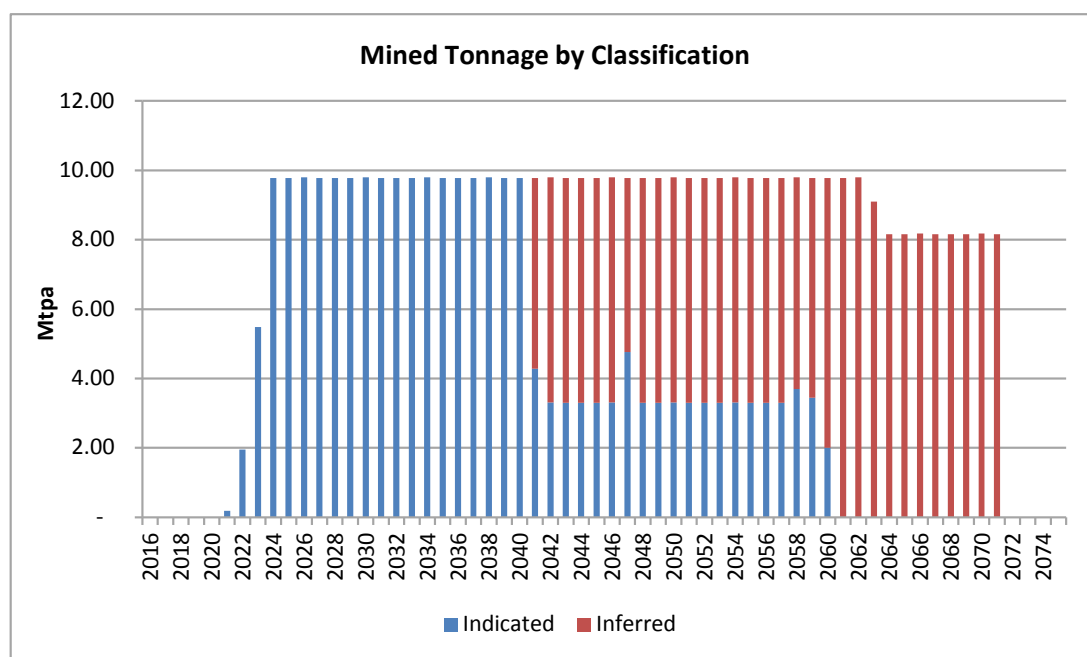
Notably, the current LoM average grade is 87.4% polyhalite; and the first 20 years of production (10 Mtpa) has an average annual ROM grade of 87.8% with a minimum of 85.5% and maximum of 90.2% polyhalite. Lower grades from Inferred Mineral Resources are mined later in the mines life, and the average annual ROM grade is first consistently below 88.0% in year 21.

Some selectivity in mining will therefore be required when mining the Inferred Mineral Resource areas, introducing a risk to maintaining target head grade and it is envisaged that short and medium term mine planning will utilise in-fill drilling from underground development to increase geological knowledge prior to mining panel design and layout and enable more optimal sequencing of panels.

SRK considers the current LoM production schedule reported is suitable for the needs of the study in the respect that average annual ROM grades meet Sirius targets and analysis shows that target shipping grades can be achieved over extended periods. Further details on this



aspect can be found in Chapter 9 of this report.



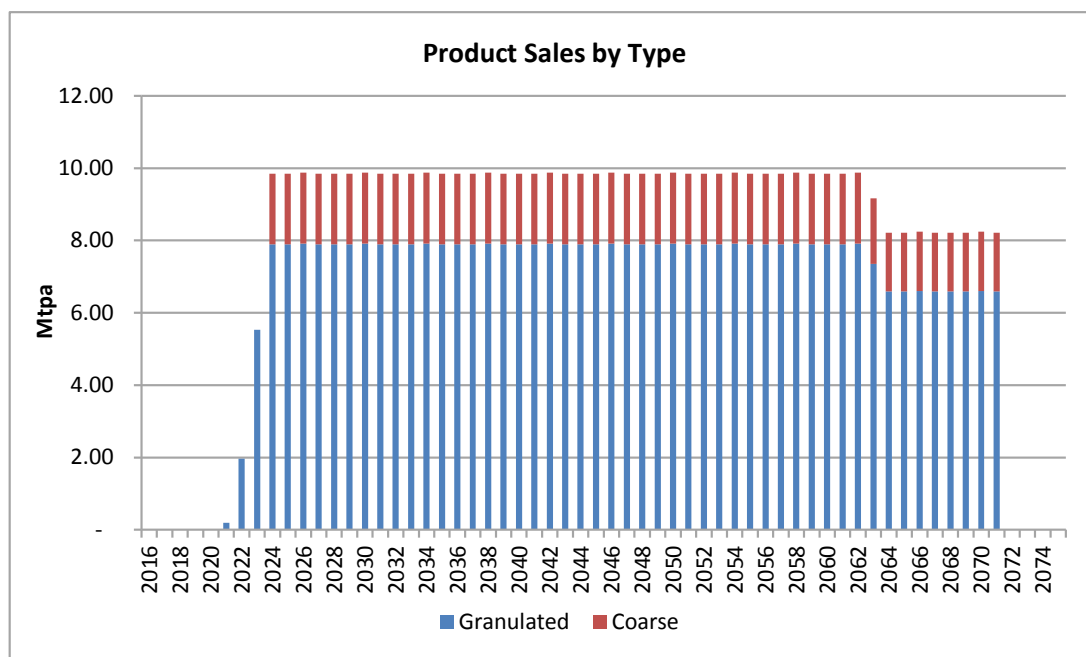
**Figure 13-1: Mine Plan**

The mine plan extends to 2100 assuming the total currently available Indicated and Inferred Mineral Resources can be mined, however, for the purposes of the Sirius FM as presented in this Chapter, the mine plan has been restricted to 2071 or some 50 years of production as shown in Figure 13-1. From 2064, mined production drops to some 8Mtpa which is simply a function of the current mine plan developed for the DFS rather than any other constraint in terms of shaft, infrastructure and sales or marketing capacity.

## 13.3 Revenue

### 13.3.1 Sales Volumes

The Sirius FM assumes some 467Mt of product is sold over the LoM which is some 4Mt greater than mine production. This is because Sirius assumes that sales are split 80%:20% between a granulated product and straight ROM or 'coarse' polyhalite product material and makes an adjustment of adding 1% to the granulated product sales volumes (compared to mined production) to reflect the addition of starch (binding agent) in the granulated product. Figure 13-2 shows the assumed sales over the LoM split between granulated and coarse product, with approximately 8 Mtpa of granulated product sales compared to approximately 2 Mtpa of coarse product sales at steady state.



**Figure 13-2: Product Sales by Product Type**

Sirius has negotiated a number of offtake agreements and has included the volume and pricing assumptions for these in the Sirius FM. Both granulated and coarse product sales via offtake agreements are assumed up to 2032, after which all sales are assumed to be on the open market. In reality, in the early years, any uncontracted volumes will be either committed under new offtake agreements on consistent terms or sold on the open market. For granulated product sales between 2022 and 2032, up to some 2.9 Mtpa of the total granulated sales of 7.9 Mtpa is assumed to be sold via offtake agreements. For coarse produce sales, one offtake assumption is currently included which accounts for up to a maximum of 0.5 Mtpa between 2024 and 2030 out of total coarse product sales of 1.95 Mtpa.

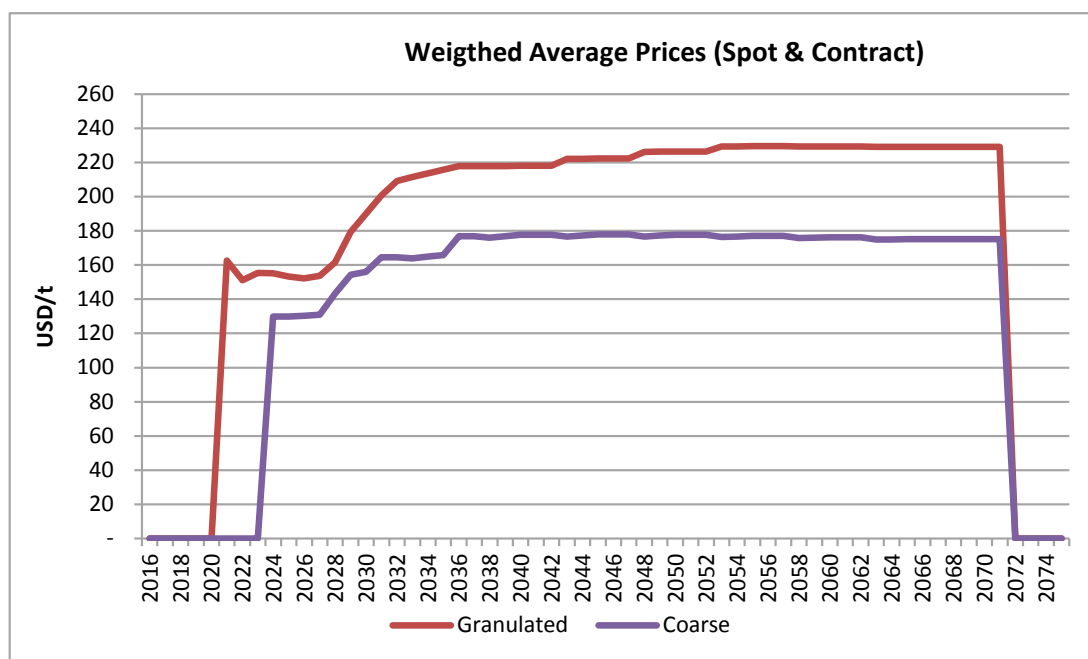
SRK has reviewed the offtake agreements and considers these to be appropriately reflected in the Sirius FM.

### 13.3.2 Pricing

Sirius commissioned independent polyhalite market studies by CRU Strategies (CRU) which have also been reviewed by Fertecon (Fertecon were commissioned by the Park Authority to undertake a review of the CRU report as part of the planning process). Figure 13-3 shows the weighted average prices reflected in the Sirius FM for granulated and coarse product.

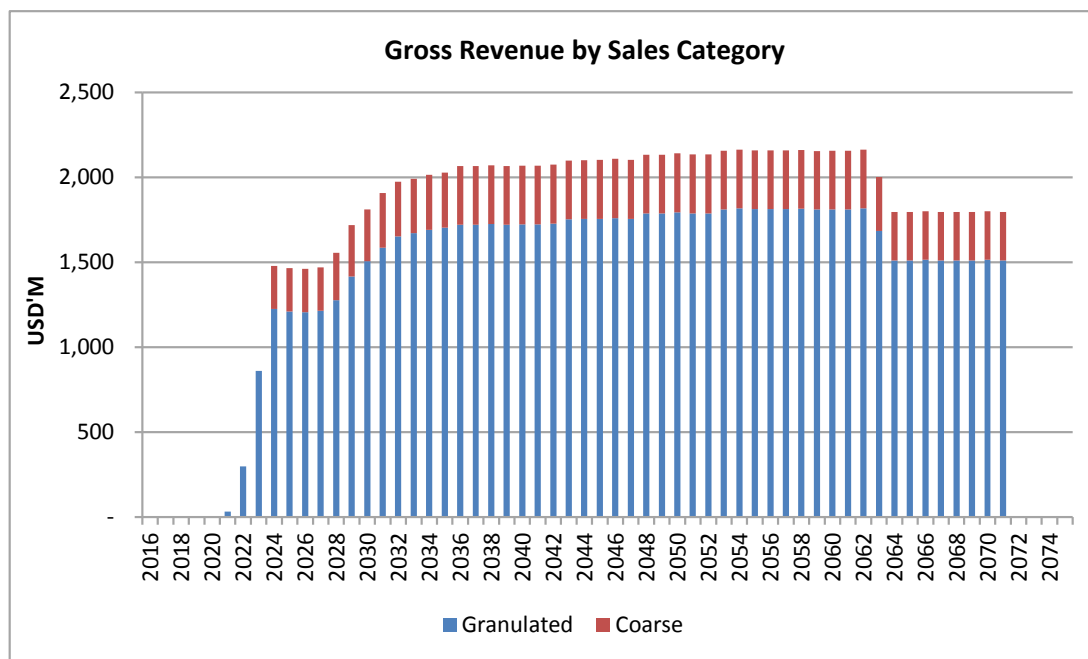
The Sirius FM assumes a real terms price (FOB Teesside) of between USD130-160/t from 2021 to 2028, following which prices are assumed to rise in real terms and ultimately reaching approximately USD180/t for coarse product and USD220-230/t for granulated product. It is noted that these price ranges are due to a combination of price increases over time due to Sirius's planned marketing strategy (as described in Chapter 5) and price differentials for product to different regions. Granulated product is assumed to attract a premium over coarse product of 7.5% although a greater disparity is evident in the weighted average price, as shown in Figure 13-4, due to product volumes allocated to different regions which results in a larger price difference overall. Further commentary on the marketing assumptions is included in Chapter 5 of this report.

Sirius has assumed that the spot prices in the first five years are consistent with the offtake agreements and which represent around a 30% discount to the inherent nutrient value of the product (assumed to be USD221/t). Prices are then assumed to increase in real terms following the offtake period and once global demand for POLY4 product is established.



**Figure 13-3: Product Prices**

Figure 13-4 shows the assumed gross revenue by year increasing from some USD1.5 billion per annum up to 2028 and increasing to over USD2.0-2.1 billion per annum beyond this following real terms increases in commodity prices noted above.



**Figure 13-4: Gross Revenue**

## 13.4 Capital Costs

### 13.4.1 Project Capital

Capital costs for the DFS were prepared by various consultants as follows:

- SRK – mining
- Worley Parsons – shafts
- Bechtel – MTS, MHF, Port, minehead surface facilities; and
- Sirius – Owners

Since the completion of the DFS, Sirius has updated its capital cost forecast and development schedule for the Project to reflect: a revised implementation strategy, in which Sirius itself will manage its contractors rather than involve a project management contractor; certain capital updates based on a review of spares requirements and some scope revisions; and also a capital cost estimate and construction schedule developed by AMC the now selected preferred shaft contractor. The Project capital costs presented in this section include these changes and reflect the most up to date cost estimate available.

The Sirius FM assumes that certain capital items will be outsourced from third parties and this includes those listed below. The Sirius FM removes these items from the original capital cost estimate and includes additional operating costs accordingly.

In summary:-

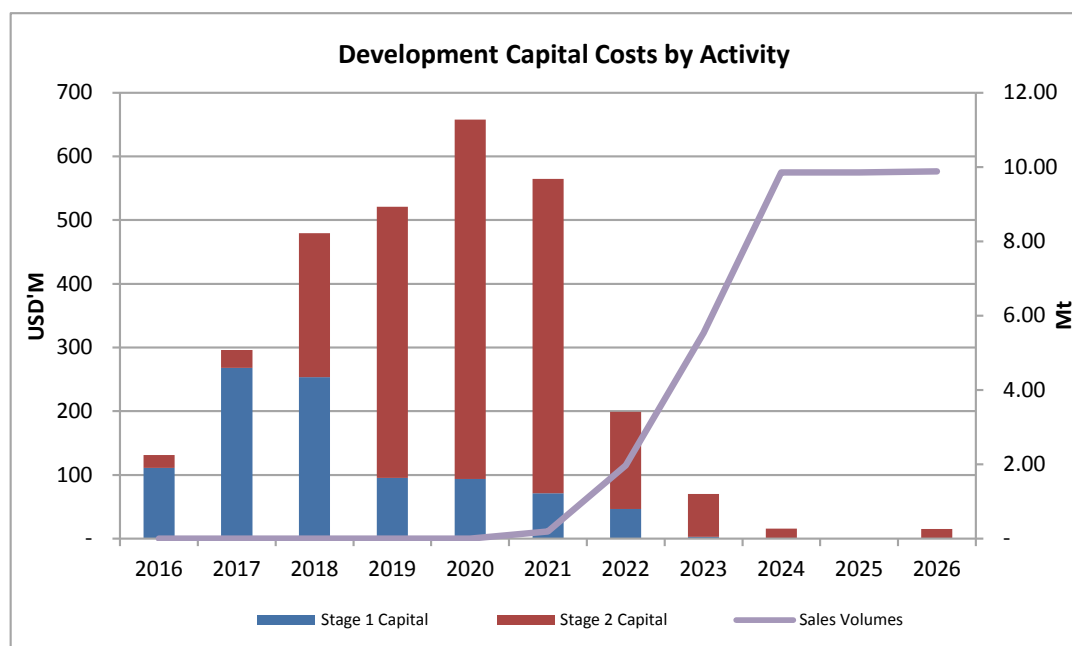
- mining equipment is assumed to be provided under 7 year rolling back to back leases over the LoM (USD124.6M capital cost removed); and
- port related infrastructure (including storage buildings at the MHF) is assumed to be constructed under a Build Own Operate (BOO) arrangement (USD470.2M capital cost removed).

Table 13-2 shows the total Project construction related capital costs by major category and split between Stage 1 and Stage 2 scopes of work which reflects Sirius's phased approach to finance the construction costs.

**Table 13-2: Project Construction Capital Costs**

Category	Stage 1 (USD'M)	Stage 2 (USD'M)	FM Total Capital (USD'M)	Outsourced (USD'M)	Total (USD'M)
Mine site development	677.5	435.5	1,113.0	124.7	1,237.6
Mineral Transport System (MTS)	61.0	796.5	857.5	-	857.5
Material Handling Facility (MHF) and Port	-	229.0	229.0	411.5	640.5
Other Infrastructure and facilities	1.3	100.7	102.0	19.3	121.3
Owner costs	117.9	162.6	280.4	-	280.4
Contingency	133.6	236.1	369.7	39.4	409.0
<b>Total</b>	<b>991.3</b>	<b>1,960.3</b>	<b>2,951.5</b>	<b>594.9</b>	<b>3,546.4</b>

Figure 13-5 shows the scheduling of the capital cost by Stage 1 and 2 and by year. Construction capital spend commences in 2016 and continues through to 2026, with mine production starting in 2021 and then ramping up to steady state production from 2024.



**Figure 13-5: Project Development Capital (excluding outsourced capita) spend (2016 to 2026)**

SRK notes that the DFS defines a total capital funding requirement for the project up to the quarter in which the project generates positive cash flows in 30-Jun-22. Table 13-3 below reconciles the capital costs set out in Table 13-1 above to the capital funding requirement. It should be noted that the capital funding requirement includes provisions for escalation and working capital and other operating costs to 30-Jun-22.

**Table 13-3: Capital Funding Requirement**

Category	Capital Funding Requirement (USD'M)
Total Development capital as above	3,546.40
Less: Outsourced Capital	(594.86)
Add: Escalation	126.64
Less: Capital costs after 30-Jun-22	(207.00)
Add: Working Capital and other costs to 30-Jun-22	37.53
<b>Total Capital Funding Requirement</b>	<b>2,908.71</b>

### 13.4.2 Sustaining Capital

Sustaining capital costs are included in the Sirius FM over the LoM and have been estimated specifically by SRK and Worley Parsons for replacement of plant and equipment in the mine and shafts respectively.

The Sirius FM assumes a total cost of some USD830M over the LoM for sustaining capital, commencing from 2024 and continuing to the end of the mine life (2071), varying between USD11-43M per annum and averaging some USD17M per annum over the LoM. This equates to some USD1.8/t over the Phase 1 LoM.

### 13.4.3 Outsourced Capital

As noted above, Sirius has assumed that some capital items are outsourced to third parties and as such these costs have been excluded from the Project development capital and instead included as an operating expense.

Sirius has assumed that some USD125M of mining equipment will be outsourced over a rolling 7 year back to back lease term and assuming upfront fees of 2.5% and margin of LIBOR +7.0%. Over the LoM this equates to some USD1,200M added to operating costs or some USD2.59/t.

Further, Sirius has assumed some USD470M of port related infrastructure will be outsourced and has assumed a charge will be added to operating costs for use of these facilities which equates to some USD2,136M over the LoM added to operating costs or some USD4.6/t. In respect to the outsourced port and storage infrastructure, the port facilities operator (the “Operator”) is assumed to receive a toll rate per tonne of product throughput for the LoM. The toll rate per tonne (USD4.6/t) payable to the Operator has been calculated such that it is the margin required to deliver a 9% internal rate of return (IRR) to the Operator over a 25-year term. The assumption made by Sirius has been made that the toll rate continues for the LoM and is not renegotiated at term.

### 13.4.4 SRK Comments

In SRK’s opinion, the selection of a preferred contractor for the shaft sinking for the Project has allowed for these costs to be confirmed and refined to a point where there is a good degree of confidence in the estimates derived.

The mining development capital costs have been developed using the SRK mining schedule to which development costs have been applied. Equipment costs have been derived from budget quotes provided by equipment suppliers. Capital costs are detailed and are in line with expectations for this level of study.

The cost for the MTS tunnel construction and lining (excluding all associated infrastructure and fit out) works out to USD457.7M for a cost of USDM 12.3 per km. This cost excludes utilities, rail, conveyor and drainage and assumes current assumptions regarding geotechnical parameters and the ability of the selected tunnel support system to cope with the range of geotechnical conditions encountered. The construction of the tunnel utilises three TBMs. While there are a number of factors which can significantly influence TBM tunnelling costs (particularly ground conditions) the overall “cost per km” has been compared with the results of a benchmarking exercise undertaken by the Institute of Civil Engineers on behalf of the UK Government<sup>1</sup> and comparing the estimated costs for the tunnel as proposed with this dataset shows it to fall within the range of tunnels of a 4.0 to 5.0 metre diameter (cost range circa USDM/km = 7.5 to 30.0).

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<sup>1</sup>[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/192589/cost\\_study\\_technical\\_note211210.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192589/cost_study_technical_note211210.pdf)

SRK considers that the capital cost estimate developed for the MHF at the DFS level have been developed in a manner and to an extent commensurate with the stated level of estimate. The capital costs have been developed to a detailed WBS, with unit operations built up from mechanical equipment lists, and MTOs for the associated installation and infrastructure items, e.g. civils, structural, P&I etc. SRK notes that Bechtel determined the MHF capital cost estimate based on the designs and resulting MTOs developed by KHI. These contain some elements commensurate with a Class 4 estimate according to Bechtel's classification standard, and some elements commensurate with a Class 3 estimate. SRK expects that Bechtel's classification system is probably based on the AACE system. Under the AACE system, a Class 4 estimate is typically used for a PFS level of project definition and a Class 3 estimate for a DFS level of project definition.

SRK notes that the production split within the MHF was changed subsequent to the completion of the DFS from the figure of 6.5 Mtpa of granulated product on which the KHI estimate was based, to a figure of 9.85 Mtpa of combined granulated and coarse product (7.9 Mtpa granulated, 1.95 Mtpa coarse), within the overall plant feed figure of 10 Mtpa. Overall, however, SRK believes the cost estimate to be reasonable given the current assumptions.

Capital costs for power supply and distribution infrastructure have been developed from first principles for the major elements. Detailed studies are evident to support the quantities.

RHDHV has developed the bulk terminal facility and provided layouts, quantities and specification to Bechtel for pricing. SRK understands Bechtel has developed the capital and operating costs using the technical inputs from RHDHV and Sirius, budget quotations for major equipment, unit cost from market pricing and internal reference databases.

For some assets, such as the port, further work is required to fully confirm capital costs, such as ground geotechnical surveys, and for these items a comprehensive list of risks have been developed and further work is planned.

Equally, the risk analysis and development of a contingency for the MHF and port of circa. 20% appears to reflect this and should cover any adjustments to the design provided nothing significantly different is uncovered which the current data suggest to be unlikely.

Finally, while the revised approach to construction management proposed by Sirius post the completion of the DFS has reduced the overall cost of construction, SRK agrees this is a sensible approach given the limited number of contracts involved in particular at the start of the construction period and should be manageable given the team structure proposed by Sirius assuming that appropriate personnel can be recruited. SRK also notes that Sirius has retained the full contingency allowance developed for the DFS in its capital cost assumptions despite the reduced overall cost which provides additional comfort that the project can be constructed within the revised budget.

## **13.5 Operating Costs**

### **13.5.1 Direct Operating Costs**

Operating costs have been prepared by various consultants as follows:

- SRK – mining
- Worley Parsons – shafts

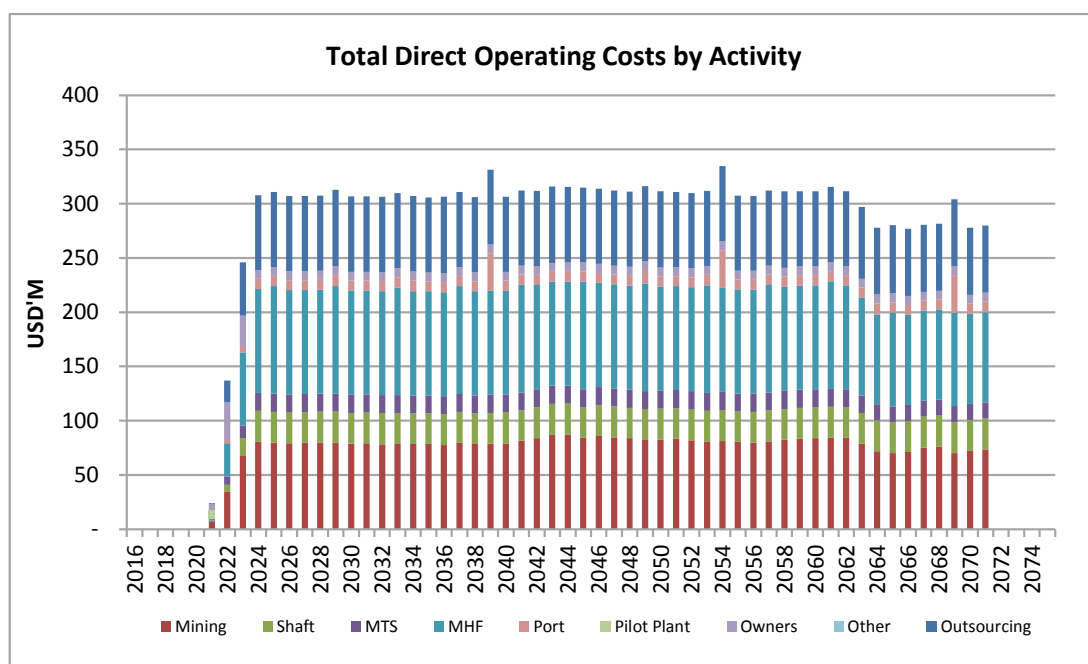
- KHI – utility and reagent consumption rates with Sirius providing unit rates
- Bechtel – MTS, MHF, Port, minehead surface facilities; and
- Sirius – Owners

Table 13-4 shows the assumed LoM operating costs by major category.

**Table 13-4: LoM Direct Operating Costs**

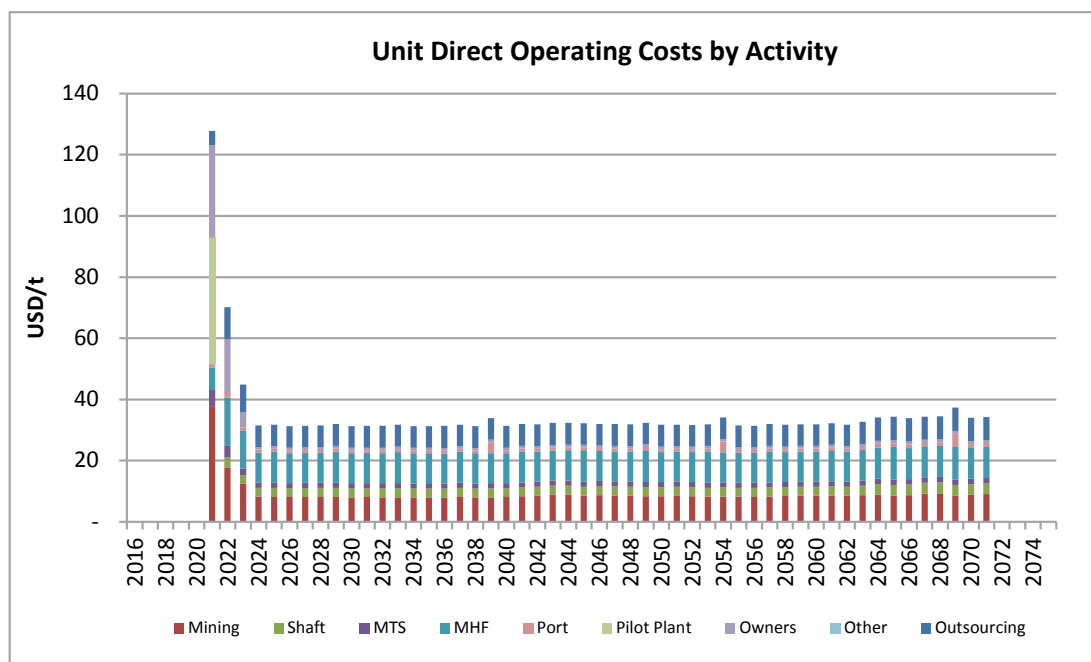
Category	LoM (USD'M)	LoM (USD/t)
Mining	3,945.41	8.51
Shaft	1,385.02	2.99
MTS	802.22	1.73
MHF	4,633.56	10.00
Port	536.26	1.16
Pilot Plant	7.83	0.02
Owners	462.82	1.00
<b>Sub-total</b>	<b>11,773.12</b>	<b>25.40</b>
Outsourced Capital	3,336.30	7.20
<b>Total Direct Operating Costs</b>	<b>15,109.41</b>	<b>32.60</b>

Figure 13-6 and Figure 13-7 show the annual direct operating costs and unit costs respectively.



**Figure 13-6: Project LoM Direct Operating Costs (USD'M)**





**Figure 13-7: Project LoM Direct Unit Operating Costs (USD/t)**

In summary, once at steady state, total direct operating costs total some USD300M per annum on average including outsourcing costs. Table 13-5 shows the total direct operating costs during the first 4 years of production from 2021 to 2024 from when steady state operations are reached.

**Table 13-5: Direct Operating Costs during Ramp Up**

Category	2021 (Yr 1) <sup>1</sup>	2022 (Yr 2)	2023 (Yr 3)	2024 (Yr 4)
Mined polyhalite (Mt)	0.19	1.95	5.48	9.77
Direct Opex + Outsourcing charges (USD'M)	24.17	136.97	246.07	307.83
Unit Costs (USD/t)	127.76	70.15	44.91	31.50

1: During 2021 the assumption made in the Sirius FM is that ore is hoisted and trucked to be processed at the pilot plant.

### 13.5.2 Other Assumptions

#### *Royalties*

The Sirius FM assumes royalty payments calculated as 2.5% of gross revenue. This equates to some USD2,392 M over the LoM, varying between USD0.8-54.0M per annum, and averaging USD46.9M per annum over the LoM or USD5.16/t.

#### *York Potash Foundation*

The Sirius FM assumes the establishment of a community foundation (the York Potash Foundation) which is funded by a royalty calculated as 0.5% of gross revenue. This equates to some USD478 M over the LoM, varying between USD0.2-10.8M per annum, and averaging USD9.4M per annum over the LoM or USD1.03/t.

### *Section 106*

Sirius has certain commitments under S106 agreements entered into with local planning authorities as a condition of the planning approvals which have been granted. These include a series of payments for various purposes from the start of construction and during operations.

Over the LoM the Sirius FM has assumed a total of USD136.3M (USD0.29/t) related to S106 payments with specific amounts modelled from 2016 to 2029 varying between USD2.16 and USD8.36 per annum, followed by a constant annual amount of USD2.09M per annum from 2030 until the end of the mine life.

In addition to the above, Sirius has assumed it will maintain in escrow a cash amount sufficient to pay S106 contributions from construction and into the early years of the operation. This is modelled as a cash outflow of USD40.4M in 2016 which is then 'topped up' and 'released' (cash outflow and inflow) gradually until 2028 offsetting the initial outflows such that the net effect is zero over the LoM.

SRK has reviewed the S106 costs and considers these consistent with the agreements in place, details of which can be found in Chapter 12 of this report.

### *Closure*

The Sirius FM models two types of security in relation to closure costs reflecting the provisions for restoration prescribed by the S106 agreements:

- Restoration Bond (cash collateralised) – Sirius has assumed that an amount is ring-fenced as security for a bond, increasing in amount before each consecutive year of construction and which totals USD25.1M by 2021. In 2022 this cash is released as the security is assumed to be provided instead through the payment of annual premiums to a surety provider (or similar), throughout the operating period. This results in a cash inflow in 2022 (net effect of zero over the LoM).
- Restoration Bond (annual premiums) – Sirius has assumed that from 2022 the bond is maintained through payment of annual premiums. USD0.56M is paid out for this in 2022 and followed by annual payments of USD0.75M for the remainder of the mine life and totalling some USD38.0M (including Bond Management Costs) over the LoM.

SRK has reviewed the Closure costs further commentary on which is provided in Chapter 12 of this report.

### *Corporation Tax*

Sirius has developed taxation assumptions in the Sirius FM following advice from KPMG. In summary the following assumptions have been made for the purposes of the analysis presented in this report:

- UK corporation tax rate reducing from the current rate of 20% to 19% on April 2017 and to 17% on 1 April 2020;
- all financing costs/assumptions (except outsourced capital costs) are excluded;
- eligible tax losses during construction are accumulated and set against profits generated during the production phase;

- no tax relief on S106 payments; and
- tax relief is claimed on payments to the York Potash Foundation (special rules apply for donations to a registered charity which are reflected in the Sirius FM).

In summary, this results in LoM corporation tax payable of USD12,538M or USD27.06/t. No tax is paid until 2024 due to carrying forward losses during construction.

SRK has reviewed the tax assumptions and considers these to reflect the legislation in place and assumed changes to the corporation tax rate going forward.

#### *Working Capital*

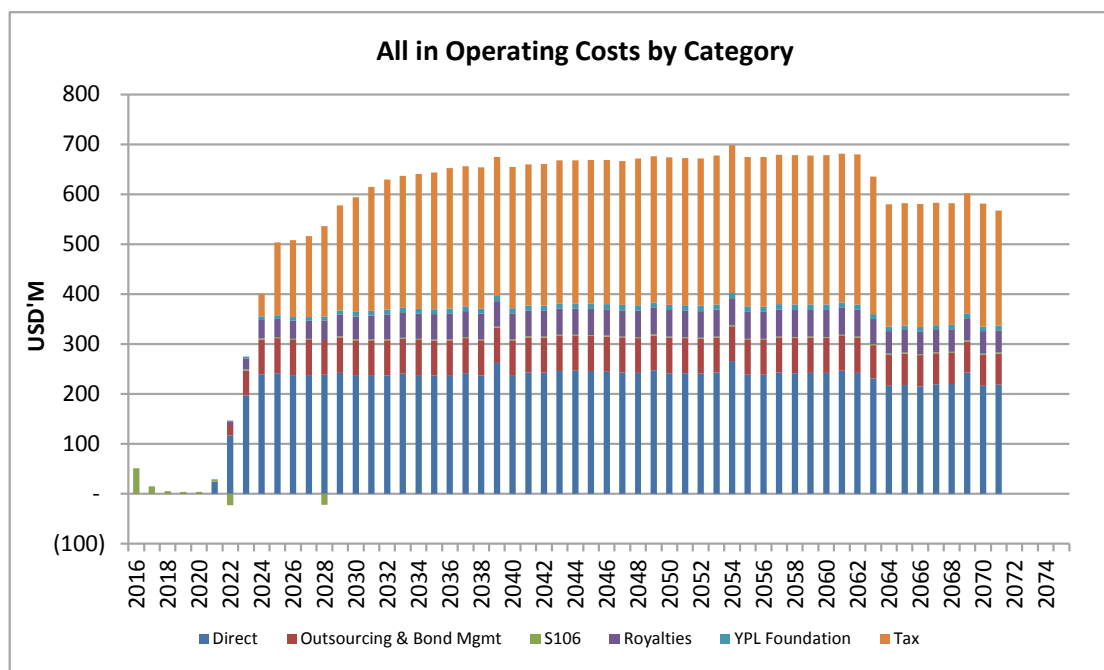
Changes in working capital have been modelled on a period basis assuming 7 debtor days and 30 creditor days.

### 13.5.3 Total Project Operating Costs

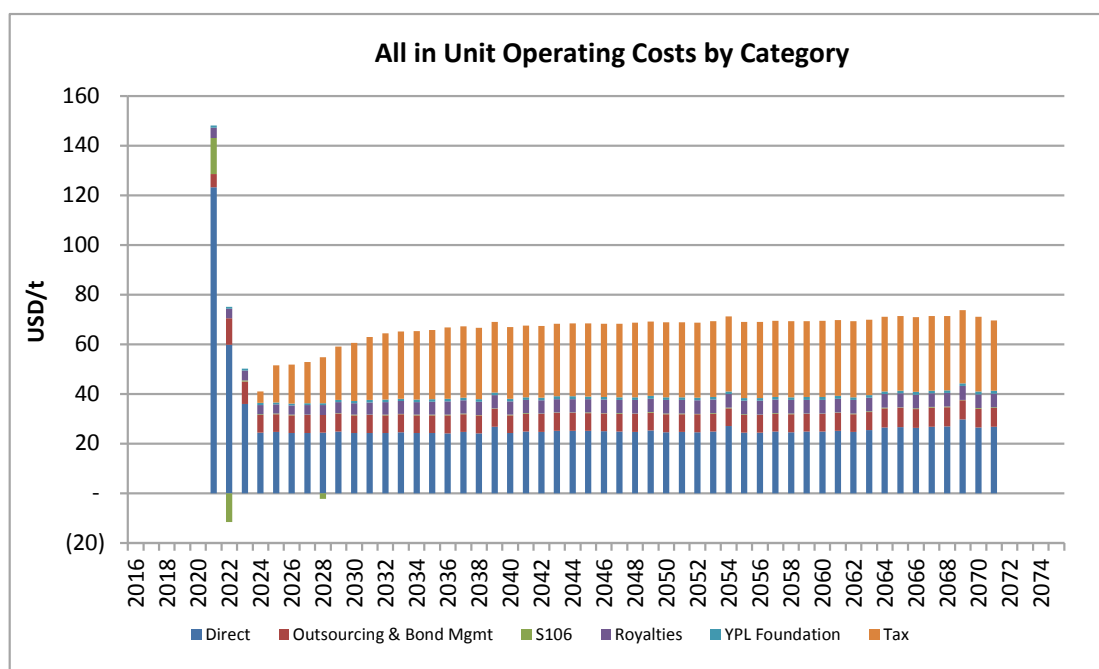
Table 13-6 presents a summary of the LoM operating costs for the Project, including taxes and royalties, while Figure 13-8 shows the annual total operating cost and Figure 13-9 shows the total unit operating costs.

**Table 13-6: Total Project All in Operating Costs**

Category	LoM (USD'M)	LoM (USD/t)
Direct Operating Costs	11,773.12	25.40
Outsourced Capital	3,336.30	7.20
<b>Sub-total</b>	<b>15,109.41</b>	<b>32.60</b>
S106 Payments & Management	136.34	0.29
Restoration Bond & Management	38.12	0.08
<b>Sub-total</b>	<b>15,283.87</b>	<b>32.97</b>
Royalties	2,392.12	5.16
York Potash Foundation	478.42	1.03
Corporation Tax	12,537.98	27.06
<b>Total Operating Costs</b>	<b>30,692.39</b>	<b>66.23</b>



**Figure 13-8: Project LoM All in Operating Costs (USD'M)**



**Figure 13-9: Project LoM All in Unit Operating Costs (USD/t)**

#### 13.5.4 SRK Comments

Mine operating costs have been derived from first principles and are based on the mining schedule developed by SRK. Labour costs were derived as part of a mine wide labour study provided by Hargreaves Mining Services. Joy has provided the equipment maintenance costs which are incorporated as part of the mining costs. Other equipment costs are based on budget pricing and are obtained directly from suppliers. WPRSA provided the operating costs for the fixed infrastructure in the shafts and shaft bottom area and these have been incorporated by Bechtel into the mine cost model. WPRSA has used benchmark numbers and these seem reasonable. For this level of study, the costs seem reasonable and appropriate.

The operating cost for the MTS equates to circa 4.6 USD c / t / km. This includes costs relating to tunnel inspections, maintenance and rail operation and is considered reasonable.

The operating cost estimate for the MHF has been developed in a conventional manner, using estimates of consumptions of key quantities such as power, compressed air, reagents, etc., together with unit costs, as well as similarly derived estimates for labour. Costs for maintenance materials have been estimated as a percentage of indirect capital costs. Sustaining costs do not apply to the process plant, and no contingency has been included for the operating cost estimate.

SRK considers the operating cost estimate for the process plant to have been suitably developed for the level of project definition. SRK notes that the accuracy of the operating cost estimate for the MHF is stated in the DFS as being -18% to +19%.

Sirius has developed operating costs from first principles with line items for power and the other utilities consumption and these are based on the consumption profile for all load centres and this appears to accurately reflect the detail provided in the equipment specifications.

The estimate of power cost is based on an independent study; the study itself notes that electricity pricing in the UK is extremely complicated with a number of contributory factors and will be specific to the selected supplier, consumption rates and user profile as well as the whole sale gas/fuel markets. SRK has looked over the independent study and the assumptions therein and believes the assumptions and methodology to be reasonable and provide a realistic assessment of future power cost. The assumption that Sirius will secure power from Sembcorp appears reasonable.

Utilities are the single biggest contributor to the infrastructure operating costs; electricity cost is the primary contributor. To derive utilities consumption charges Sirius commissioned an independent expert study ("availability and supply options study", December 2015) which looks at the current costs, UK market and market drivers. The selected power cost is taken on a December 2015 basis incorporated within the financial model. The electricity cost obtained is 52.80 GBP/MWh (circa 8 USDc / kWh) and is based on market prices with adjustments on the assumption that Sirius secures electricity supplies from Sembcorp's on site generation plant. SRK understands SembCorp to have legacy exemption rights when supplying power from their own power stations to end users at the Wilton site which offers potentially lower tariff options than available via alternative third party suppliers. We note the independent study quotes the calculation as being a "conservative" estimate. The study also provides a price review for the other utilities. Sirius has looked at two options for the operating costs for the port facility:

- as reported in the DFS Chapter: Owner Constructed, Owner Operated: Sirius bears capital cost of construction; and
- Alternative Lease model: facility is constructed by a 3<sup>rd</sup> party and Sirius pays on a per tonne basis.

For the DFS Chapter Owner Constructed options, the operating cost data is split into fixed and variable components. The fixed costs steadily reduces from USD1.9/t during ramp up to USD0.14/t at steady-state full production of 10 Mtpa. The variable cost per tonne range is from USD0.78 to 0.87 /t. Costs have been developed from first principles (maintenance, utility, G&A etc).

It should be noted that while the DFS assumes that the port will be owner constructed and operated, the Sirius FM reflects the Company's implementation strategy which assumes that this will be outsourced and as such additional outsourcing costs have been included.

The purchase terms are FOB and therefore the buyer assumes all shipping costs once the product is in the hold. Maintenance dredging costs are included based on communications from RHDHV and PD Ports.

### 13.6 Economic Evaluation

Using the assumptions as summarised in this section and presented in the annualised version of the Sirius FM, the Project has a real terms, post-tax pre-finance net present value (NPV) (8%) with a base date of 1 January 2016 of USD6,807M and an internal rate of return (IRR) of 20.3%. Cashflows are assumed to be incurred at the end of each year. Payback (when cumulative project cashflow becomes positive) occurs in 2026, Year 11.

Table 13-7 summarises the NPV of the Project at varying discount rates.

**Table 13-7: Project NPV at varying Discount Rates**

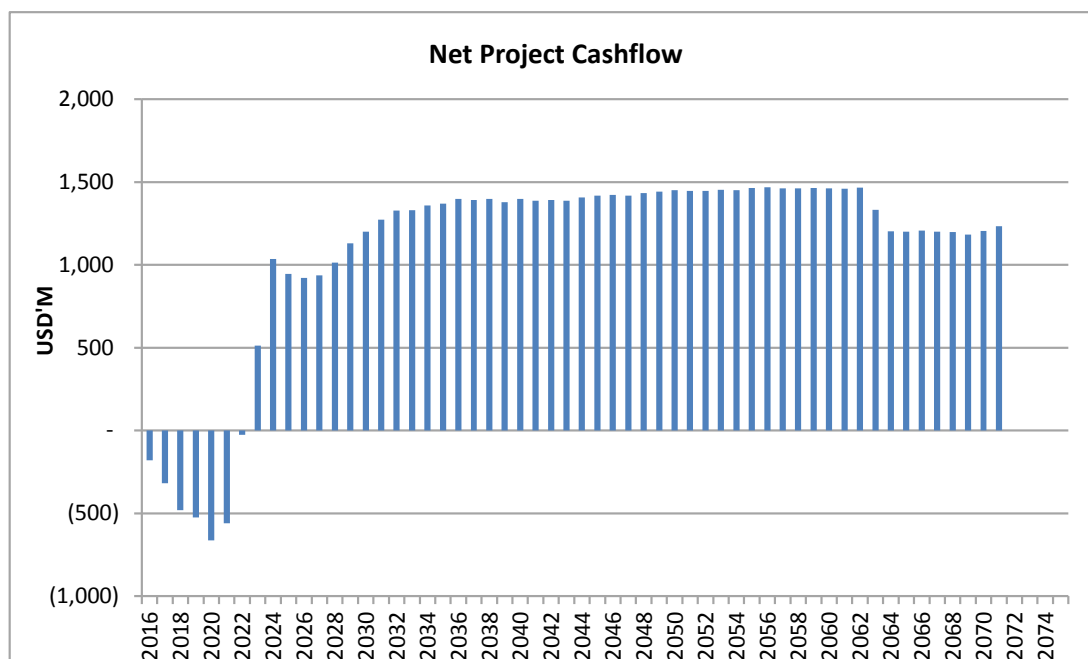
Discount Rate	NPV (USD'M)
6%	11,045
<b>8%</b>	<b>6,807</b>
10%	4,263
12%	2,660

Table 13-8 summarises the LoM revenue, operating and capital costs.

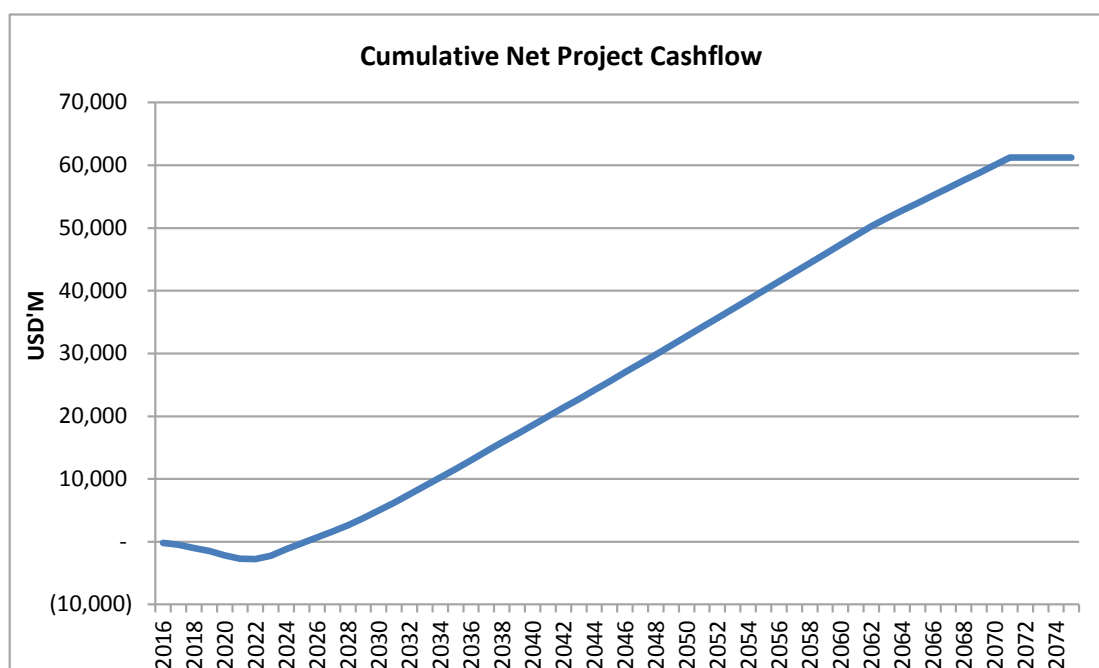
**Table 13-8: LoM Cashflow**

	NPV (USD'M)
Gross Revenue	95,685
All in Operating Costs (incl. outsourcing, royalty, tax, S106, Closure etc)	30,692
Capital Costs (project and sustaining)	3,782
<b>Net Project Cashflow</b>	<b>61,211</b>

Figures 13-10 and 13-11 present the annual and cumulative LoM Net Project Cashflows respectively.



**Figure 13-10: Project LoM Annual Cashflow (USD'M)**



**Figure 13-11: Project LoM Cumulative Cashflow (USD'M)**

## 13.7 Sensitivity Analysis

### 13.7.1 Sensitivities assessed

Presented below are a series of sensitivity analyses to show the impact on the NPV for:

- percentage increases/decreases in prices, operating costs and capital costs;
- incorporating a 12 month delay in construction and reaching production capacity;
- not outsourcing some capital items and assuming all aspects are purchased and owner operated;

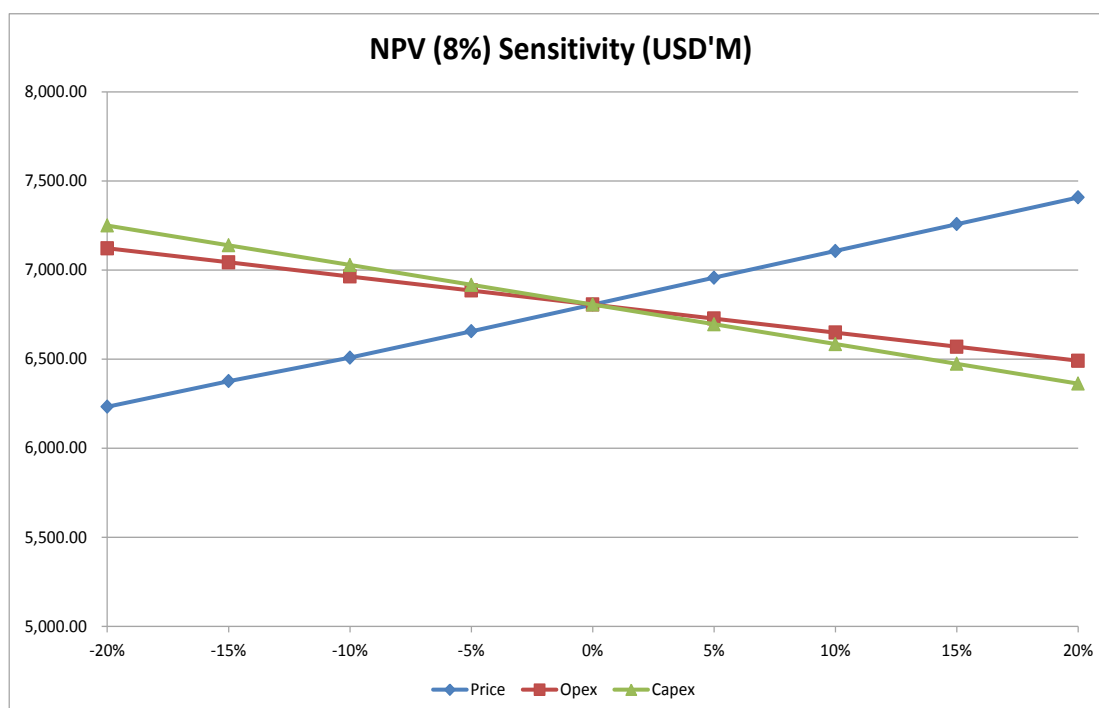
- shortening the mine life to partly or wholly exclude Inferred Mineral Resources; and
- using a more current GBP:USD exchange rate for converting GBP denominated capital and operating costs to USD.

### 13.7.2 Prices, Operating Costs, Capital Costs

SRK has assessed the impact on the NPV by varying the commodity price, operating cost and capital cost assumptions in  $\pm 5\%$  increments to the Base Case assumptions and up to  $\pm 20\%$ . Presented below in Table 13-9 are the resulting NPV's (8% real discount rate) by varying the parameters in  $\pm 5\%$  increments while Figure 13-12 shows this graphically.

**Table 13-9: Project Sensitivity to Price, Operating Cost and Capital Cost**

NPV (8%) USD'M	Price	Opex	Capex
-20%	6,233	7,122	7,250
-15%	6,376	7,043	7,139
-10%	6,509	6,964	7,028
-5%	6,656	6,885	6,917
0%	<b>6,807</b>	<b>6,807</b>	<b>6,807</b>
5%	6,957	6,728	6,696
10%	7,107	6,649	6,585
15%	7,258	6,570	6,474
20%	7,407	6,491	6,363



**Figure 13-12: Project Sensitivity to Price, Operating Cost and Capital Cost**



### 13.7.3 Construction Delay

SRK has assessed the impact of allowing for delays during the construction period and reaching production capacity of 10 Mtpa. This has been assessed by assuming that production capacity is reached in 2025, 12 months later than 2024 as reflected in the Base Case Sirius FM and the DFS deterministic schedule (and therefore 4 months later than the delay contingency included in the Level 1 schedule of the DFS). In addition, it is assumed that additional capital costs of USD50M are incurred over this delay period to account for the additional Owners and contractor related costs.

The net effect of this is to reduce the NPV (8%) from USD6,807M to USD6,603M and reduce the IRR from 20.3% to 19.8%.

### 13.7.4 No Outsourced Capital

SRK has assessed the impact of assuming that no capital items are outsourced and full capital costs are included in the Sirius FM.

The net effect of including the assumption of outsourced capital is as follows:

- USD7.20/t removed direct operating costs reducing these from USD32.6/t to USD25.4/t;
- Project construction capital costs increased by USD595M to USD3,546M;
- NPV (8%) increased from USD6,807M to USD6,858M; and
- IRR reduced from 20.3% to 19.4%.

### 13.7.5 Inferred Mineral Resources

SRK has assessed the impact of wholly or partly excluding the Inferred Resources currently in the schedule by assessing the change in NPV at different end dates for the LoM. This is summarised below in Table 13-10.

**Table 13-10: Resource Sensitivity**

End Year	Description	NPV 8% (USD'M)	IRR
2071	Base Case	6,807	20.3%
2060	When current mine plan becomes wholly sourced by Inferred Resources	6,498	20.3%
2047	LoM assuming Ore Reserves only	5,443	20.2%

### 13.7.6 Exchange Rate

Since completion of the DFS, one of the consequences of the UK referendum for its withdrawal from the European Union, 'Brexit', has been a marked change in foreign exchange rates to the British Pound (GBP), in particular between the GBP and US Dollar. Given some 67% of the Project construction capital costs (per the DFS assumptions) and 100% of the operating costs (per the DFS assumptions) are GBP denominated and converted to USD in the Sirius FM, SRK has assessed the impact of assuming a more current GBP:USD rate compared to the rate assumed at the time of the DFS estimates.

The effect of changing the GBP:USD exchange rate to 1.2349 (30-day average as at close of 15 March 2017) from the rate assumed at the DFS of 1.4245 is as follows:

- Project construction capital costs are reduced by USD262M to USD2,689M;
- All in Operating Costs (incl. outsourcing, royalty, tax, S106, Closure etc) are reduced by USD1,279M to USD29,414M;
- The NPV (8%) is increased by USD405M from USD6,807M to USD7,213M; and
- The IRR is increased from 20.3% to 21.8%.

## **14 DESIGN/CONSTRUCTION STATUS**

### **14.1 Introduction**

Once funds were received at the end of November 2016, planned activities were contracted and contractors were mobilised. Water monitoring and investigative drilling on site commenced on 7 December 2016, the Company submitted the planning conditions discharges to enable site preparation at Woodsmith Mine – formerly Doves Nest Farm (on 23 December 2016 and 13 January 2017 respectively). In addition, the Company has engaged AMC for the shaft construction under an engineering contract (dated 5 December 2016) and North Midland Construction PLC (NMC) for the highways under a construction contract (dated 28 November 2016).

During the period since November 2016 the Project Team has been strengthened with the hiring of experienced people into the roles of Commercial Manager, Project Controls Manager, and Construction Manager. Additional recruitment will be a focus during Q1 2017.

### **14.2 Land Purchases**

The freehold purchase of Doves Nest Farm, Haxby Plantation and part of Knaggy House Farm – which together comprise the land required at the mine site - has been completed. The purchase of the Lockwood Beck and the Ladycross sites will be completed in Q2 2017.

At Wilton, the Company has served notice for the purchase of 4 hectares of the MHF site and the remainder of the site is covered by an option with HCA, an agreement for which has been reached in principle to extend this for a further 2 years, until March 2019.

The option to purchase Bran Sands from ICI will be exercised before the end of March 2017. All MTS options were extended by 1 year and expire 29 September 2017. Notices to exercise the options will be sent to the 55 relevant landowners in late Q1 2107 / early Q2 2017.

### **14.3 Planned Work for 2017**

The specific work planned for 2017 includes satisfying various planning conditions; construction activity in relation to the access roads; site preparation works at the mine shaft sites and Lockwood Beck; the drilling of SM14B and associated technical work in relation to this inclusive of geotechnical and hydrogeological testwork and the updating of the Mineral Resource and mine plan; geotechnical drilling, hydrogeological testing and design work in connection with the production and service shafts and the MTS; ongoing process testwork and design work in connection with the MHF and planning/feasibility study work in connection with the port and harbour infrastructure.

In addition to the above, the overall budget also allows for the development of a marketing strategy for POLY4, research and development work to support this and to assess the potential to produce additional products for specific markets and the registration of POLY4 in the targeted countries as well as an office move to accommodate the increased staff numbers.

#### 14.4 Current Status

Ground water monitoring drilling and other investigation works are underway at the mine site. Twelve water level monitoring boreholes were completed in 2016, and the drill rigs will continue into investigative work for the development of the bank Level during H1 2017.

Sirius is co-ordinating the development of documentation to discharge its planning conditions in a phased manner, with each 'Phase' representing a defined package of works. This approach requires a number of planning conditions to be partially discharged on two or more occasions before they can be fully discharged by the relevant Planning Authority. This approach provides the Company with the ability to commence early phases on schedule, with the flexibility of not having to have completed all detailed engineering on future phases for development. In this way partial discharge of all conditions necessary to allow NMC to commence the "Phase 1" highways works has been achieved and these Works are underway.

All documents necessary for partial discharge of conditions relating to the "Phase 2" Site Preparation works at the Woodsmith Mine have been submitted to the NYMNP, following informal consultation with Natural England, the Environment Agency, NYCC and Scarborough Borough Council. These documents are now being assessed, with a determination expected in Q1 2017. Documentation relating to highways works and site preparation (combined Phase 1 and Phase 2) at Lockwood Beck were submitted to Redcar and Cleveland Borough Council on a parallel programme, also following consultation. In all instances, the documents were developed by the Company and specialist external consultants, with input from the Contractor. To date, Contractor input has been provided by NMC but, for future Phases, will also include AMC and, eventually Hochtief Murphy HJV.

In terms of Secondary Approvals, one was needed for Phase 1 - a land drainage Environmental Permit, which has been granted by NYCC.

Phase 2 at both the mine site and Lockwood Beck will also require Land Drainage consent and applications for both have been lodged. Other permits, such as for crushing equipment, will be obtained by the Contractor, subject to them being required.

Preparation of the main Environmental Permit application for mining waste is underway, including ongoing liaison with the Environment Agency, with the intent of having a temporary permission in place for the commencement of early excavation activity in July 2017.

Like the highways works, the first stages of site preparation works at the Woodsmith Mine and Lockwood Beck (Phase 2 and Phase 4) were tendered. NMC were selected and contracts are currently being negotiated.

Site Preparation at Woodsmith Mine is scheduled to start early in Q2 2017, subject to receiving the relevant paperwork from the planning authorities. The start of this work on site will represent formal Commencement of Development (planning) and Commencement of Construction (S.106).

Shaft sinking is being progressed under an incentivised engineering contract with AMC who already has five of its project team set up in the offices in Seamer. Work commenced on the mobilisation of a rig to drill and core a borehole down the production shaft (S14B), on the design of the winders, and on detailing schedule and budget.

The drill rig was mobilised to site by the end of February 2017 and the target is to have AMC mobilise equipment to site in preparation for early excavation activity commencing in H2 2017.

The work on the power supply options for construction has a high priority and this is ongoing during Q1 2017.

## 14.5 Budget

A detailed budget has been developed for the period to 31 December 2017 which envisages an expenditure of some GBP269M, as summarised below in Table 14-1. The forecast is higher than was forecast at the time of funding – the vast majority of the difference being in the AMC Mine Site Development scope which has been brought forward and accelerated. Other increases are the result of engineering work on the other parts of the project that will need reasonably detailed estimates prior to stage 2 funding. The overall construction budget however remains as assumed by the Sirius FM.

**Table 14-1: 2017 Budget Summary**

Category	Budget to 31 December 2017 (GBP'M)
Site preparation and early works	31
Mine site development (including engineering and design, initial construction works)	136
Other development costs (including land access and geotechnical drilling, and engineering and design for MTS, MHF and Port)	59
Corporate costs (including corporate and project overheads, marketing and agronomy)	43
<b>2017 Budget</b>	<b>269</b>

## 14.6 SRK Comments

Since completion of the DFS and funding was obtained, the work of the Company has been largely focussed on the discharge of planning conditions, mine site preparation and in negotiations with land owners, the main contractors and the development of the work schedule and budget for 2017.

Certainly, in SRK's opinion, the work envisaged is justified and the budgets allowed for this seem reasonable given the specific work planned.

In addition, as already commented in this report, other technical aspects of the Project are also being reviewed, notably in relation to mine planning and process testwork and plant design, though the current plans remain as envisaged in SRK's August 2016 CPR. Notably, the Company still intends to commence construction activities as envisaged in the Financial Model presented in Section 13 and to produce polyhalite from 2021 and SRK considers these expectations to be reasonable.

## 15 RISKS AND OPPORTUNITIES

### 15.1 Introduction

The aim of this section is to highlight some of the specific risks and opportunities unique to this project as it stands today.

It is not the aim of this section of the report to highlight general risks and opportunities that apply to many, and in some cases all, mining operations, notably risks of increased capital costs or opportunities for reducing costs, delays in obtaining planning permissions or in construction and increases or decreases in commodity prices. In SRK's opinion, these risks and opportunities are adequately covered in the sensitivity analysis presented in Section 13 above.

Neither is it the aim of this section to cover all of the technical risks that remain to be addressed during the design and construction phases as these are not untypical and are also listed in some detail in the DFS and commented upon in the text in Sections 8 to 14 above along with the mitigating actions being taken by Sirius to address these through ongoing work and particularly the planned drilling, for example, of SM14B.

### 15.2 Risks

#### *Mineral Resources/Ore Reserves*

- Given the depth of the orebody below surface and the consequent cost of drilling, Sirius has focussed its exploration on proving up the continuity of sufficient mineralisation to support the operation as currently proposed to a degree of confidence required to enable the reporting of Indicated Mineral Resources and Probable Ore Reserves. While both SRK and Sirius consider this is sufficient to demonstrate the presence of polyhalite in a mineable form, both accept that further exploration will be required from underground development once this is in place to better define the orebody geometry and the location and impact of faults prior to mining.

This will enable the reporting of the Mineral Resource and Ore Reserve in the higher categories of Measured and Proven respectively and ensure that mining is optimally carried out. This work will result in the detailed mining layouts as presented here being reviewed on an ongoing basis throughout the mine life and will have consequent impacts on mining productivity and production.

#### *Mining*

- There remains a risk that the cuttability of the polyhalite is not quite as anticipated resulting in reduced cutting rate and/ or higher pick consumption and machine wear lowering productivity.
- In final engineering and detailed planning and scheduling of the shaft and subsurface/ shaft bottom infrastructure construction, which is planned for the detailed engineering phase, interaction of multiple works packets in relatively confined areas may identify unanticipated schedule delay and Project/ cost overruns.

- As a consequence of the amount of drilling completed to date, geotechnical and hydrogeological conditions may not be as predicted. Revision of the planned mining methods and layouts may be required with improved orebody knowledge once the planned pilot hole SM14B and its deflections have been drilled, and on an ongoing basis as drilling is undertaken from underground development.

#### Mineral Processing

- The testwork planned to be undertaken during the detailed design phases may result in changes to the design of the proposed plant and or size of equipment within this.

#### Infrastructure/Services

- The detailed design work for the MTS tunnel might lead to design changes inclusive of increases to the tunnel diameter.

The geotechnical / ground engineering surveys yet to be carried out at the port may reveal that the dredged slope between the lagoon embankment and the dredged pocket requires ground improvement works.

### 15.3 Opportunities

#### *Mineral Resources/Ore Reserves*

- As commented above, Sirius has focussed its exploration on proving up the continuity of sufficient polyhalite mineralisation to support the operation as currently proposed. As a result the polyhalite deposit explored by Sirius, which is clearly extensive, remains open in most directions and there is a likelihood that the mine will continue to mine much longer, or at an increased rate, than currently envisaged by the mine plan presented in this CPR.

Notably, in this regard Sirius has designed the mine and surface infrastructure such that it can be expanded if deemed appropriate to support an increased production rate of up to 20 Mtpa and while this option has not been designed to the level of the plans to mine at 10 Mtpa, plans are already in place to cater for this eventuality.

Clearly if realised this could have a significant positive impact on the valuation as presented in this CPR.

- In addition to the above, there is also the potential for the mine to exploit halite and also sylvinite both of which will be intersected by the proposed shaft and Sirius has indicated its intention to investigate the potential for this as the mine is developed.

While not the specific focus of this report it should be noted in this regard that FWS has derived an Inferred Mineral Resource as defined by the JORC Code of some 550 million tonnes of halite all of which has potential to be accessed from the underground infrastructure planned to be put in place at the Project. Further, while there is insufficient geological data at present to define a Mineral Resource for the sylvinite, an Exploration Target, as defined by the JORC Code, of between 180 and 300 million tonnes of this material has also been outlined by FWS. While it is uncertain if further exploration will result in the estimation of a sylvinite Mineral Resource, such exploration is planned to be completed underground once production of POLY4 has commenced. SRK has also reviewed both of these estimates and considers these to be reasonable based on the data currently available.

### *Mining*

- Once the polyhalite horizon is accessed and orebody knowledge increases through exploration and in-fill drilling better definition of grade and extents of mineralisation may provide potential to increase head grade and/ or improved tonnage profiles.
- A highly productive mining system will be employed utilising equipment monitoring and maintenance systems necessary to achieve planned production. This presents an opportunity to incorporate processes that will support lower operating costs and improved productivity.
- The recent trials conducted using Joy equipment cutting polyhalite with the existing 12HM36 machine confirm the output rates can be achieved and there is the potential for increased output from the planned use of the more powerful 12HM46 machine.
- The mine environment will be monitored and controlled using controlled partial re-circulation and refrigeration to ensure that operating conditions are effectively managed to support high production rates and to minimise ventilation costs.

### *Infrastructure/Services*

- There is some potential to utilise existing (unused) port facilities, which currently lie dormant, and which may reduce capital costs and/or port outsourcing charges.

## **16 RECOMMENDATIONS**

In SRK's opinion, the Project described here is a project of merit which justifies being progressed to the construction phase.

Notwithstanding this, SRK has made various recommendations for further work which is required to enable the project to be optimally developed and the Company has integrated these recommendations into its work plans for the next two years.

## **17 CONCLUDING REMARKS**

In summary, this report describes a significant Project which will involve the construction of a material amount of infrastructure to be realised, but which has potential to become a major polyhalite producer for a long period of time.

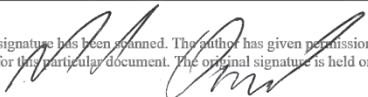
While further design work needs to be done to ensure the Project is constructed in an appropriate manner and as optimally as possible, SRK considers that the work undertaken to date has been completed to a high standard, the capital and operating costs to be based on detailed assessments carried out by suitably qualified and experienced consultants and contractors and the revenues to be based on an achievable production profile and price assumptions produced following a detailed assessment of demand for the product.

The NPV and IRR for the Project presented in this report demonstrates the value of the Project and this has potential to be enhanced further particularly given the potential for the Mineral Resource and Ore Reserve to be increased following ongoing exploration and assessment and also the for the production rate to be increased from 10 Mtpa to 20 Mtpa.

The observations, comments and conclusions presented in this report represent SRK's opinion as of 1 March 2017 and are based on a review of documentation provided by the Company and to some extent discussions with the Company.

SRK requires to be able to approve any extract from this report which may be presented in any public domain literature or which is used for the purposes of financing or presentation to third parties.

**For and on behalf of SRK Consulting (UK) Limited**

  
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**Mike Armitage**  
**Corporate Consultant (Resource Geology)**  
**SRK Consulting (UK) Limited**



