NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho

Letšeng Diamond Mine, Lesotho

Gem Diamonds Ltd on behalf of Letšeng Diamonds (Pty) Ltd

Report Date: 13 March 2024

Effective Date of the Report: 31 December 2023

Signed by the Qualified Persons:

Casey Hetman, M.Sc., P.Geo.

Kimberley Webb, M.Sc., P.Geo.

Cliff Revering, P.Eng.

Anoush Ebrahimi, PhD., P.Eng.

Gerhardus Keyter, DIC, Pr.Eng.

Peter Shepherd, Pr. Sci. Nat.

Robert McNeill, Pr. Tech. Eng., Pr. CPM

Jeremy Clarke, Pr. Tech. Eng.

Carl Kottmeier, P.Eng., MBA

Darryll Kilian, M.A. (EGS) HDE (PG) Sec

SRK Consulting (Canada) Inc. ▪ CAPR002110 ▪ March 2024

srk consulting

Independent Technical Report for the Letšeng Diamond Mine, Lesotho

Letšeng Diamond Mine, Lesotho

Prepared for:
Gem Diamonds Ltd on behalf of Letšeng Diamonds (Pty) Ltd
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Maseru 100, Lesotho
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File Name:
CAPR002110_NI_43-101_Technical_Report_20240313.docx

Suggested Citation:
SRK Consulting (Canada) Inc. 2024. NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho. NI 43-101. Prepared for : Maseru 100, Lesotho. Project number: CAPR002110.

Important Notice

This report was prepared in compliance with the Canadian National Instrument 43-101 Technical Report (NI 43-101) for Gem Diamonds Limited ("Gem Diamonds") by SRK Consulting (Canada) Inc. ("SRK"). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in SRK's services, based on:

i. Information available at the time of preparation.

ii. Data supplied by outside sources.

iii. The assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Letšeng subject to the terms and conditions of its contract with SRK and relevant securities legislation.

The contract permits Gem Diamonds to file this report as a Technical Report with the London Securities Exchange. Except for the purposes legislated under securities law in England and Wales, any other uses of this report by any third party is at that party's sole risk. The responsibility for this disclosure remains with Gem Diamonds. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

Copyright

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: "NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho, South Africa" prepared for Gem Diamonds Limited (the "Issuer") dated 13 March 2024, with an effective date of 31 December 2023 (the "Technical Report").

I, Casey Michael Hetman, P.Geo., do hereby certify that:

1. I am a Corporate Consultant with SRK Consulting (Canada) Inc. ("SRK") with an office at Suite #2600 – 320 Granville Street, Vancouver, British Columba, Canada, V6C 1S9.
2. I graduated from the University of Toronto, Department of Geology, Canada, (M.Sc., 1996 and B.Sc. Hons.,1993). I have practiced my profession continuously since graduation. I have worked as a geologist continuously since my graduation and have been involved in diamond, gold and base metal projects ranging from grass roots exploration to advanced evaluation and mine planning activities globally. I have held positions ranging from Exploration Geologist to VP of Exploration and Corporate Consultant throughout my 30 years of industry experience.
3. I am a registered Professional Geoscientist in good standing with the Association of Professional Engineers and Geoscientists of British Columbia, license # 30185, and the Association of Professional Geoscientists of Ontario, license # 1260 and the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists, licence # 1260.
4. I have personally inspected the Letšeng project site on sixteen visits from 20 Mar – 25 Mar, 2023; 24 Mar – 04 Apr, 2022; 29 Nov – 13 Dec 2021; 24 Jan – 26 Jan 2020; 30 Apr – 22 May 2019; 12 Mar – 16 Mar 2018; 12 Oct – 20 Oct 2018; 22 Nov – 02 Dec 2018; 23 Sep – 02 Oct 2017; 02 Mar – 10 Mar 2016; 04 Oct -12 Oct 2016; 31 Mar – 09 Mar 2015; 27 Oct – 05 Nov 2015; 14 Jan – 02 Feb 2014; 20 May – 30 May 2014; 04 Jun – 01 Jul 2013.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Sections 2 through 6, Section 7 (as it relates to the Satellite Pipe), Sections 8 through 11, Sections 12.1, 12.2.1, 12.2.2 (Satellite Pipe), 12.2.4, Section 19, Section 23, and Section 24, as well as relevant parts in the Executive Summary, Reliance on Other Experts, Conclusions and Recommendations, Risks and Opportunities, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I visited the Letseng Mine while working as a geologist with Mineral Services Canada Inc. on 20 Feb 2007 and reviewed the geology within the Main and Satellite Pipes.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Vancouver, British Columbia Canada.

"original signed and sealed"

Casey M. Hetman, M.Sc., P.Geo.

SRK Consulting (Canada) Inc.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: “NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho, South Africa” prepared for Gem Diamonds Limited (the “Issuer”) dated 13 March 2024, with an effective date of 31 December 2023 (the “Technical Report”).

I, Cliff Revering, P. Geo., do hereby certify that:

1. I am an Associate Consultant (Geological Engineering) with the firm of SRK Consulting (Canada) Inc. (SRK) with a business address at Suite 600, 350 3rd Ave. North, Saskatoon, Saskatchewan, Canada.
2. I am a graduate of the University of Saskatchewan in 1995 with B.E. in Geological Engineering and completed a Citation in Applied Geostatistics from the University of Alberta. My relevant experience includes more than 27 years employment in the mining industry, related to exploration, mine operations and project evaluations, with a specialisation in geological modelling, mineral resource and reserve estimation, production reconciliation, grade control, exploration and production geology, and mine planning.
3. I am a professional Engineer registered with the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS#9764).
4. I have personally inspected the Letšeng project site from 19 to 22 May 2021.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”) and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Section 12.2.3, Section 14, as well as relevant parts in the Executive Summary, Reliance on Other Experts, Conclusions and Recommendations, Risks and Opportunities, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I have not had prior involvement with the subject property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Saskatoon, Saskatchewan, Canada.

“original signed and sealed”

Cliff Revering, P. Geo.

SRK Consulting (Canada) Inc.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: "NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho, South Africa" prepared for Gem Diamonds Limited (the "Issuer") dated 13 March 2024, with an effective date of 31 December 2023 (the "Technical Report").

I, Kimberley Webb, M.Sc., P. Geo., do hereby certify that:

1. I am a Principal Consultant with SRK Consulting (Canada) Inc. ("SRK") with an office at Suite #2600 – 320 Granville Street, Vancouver, British Columba, Canada, V6C 1S9.
2. I am a graduate of Rhodes University (South Africa) having obtained the degrees of B.Sc. (Hons.) in Geology in 1994 and M.Sc. in Geology in 2001. I have practiced my profession continuously since 1996. My relevant experience includes over 25 years in the diamond industry, from exploration to operational support, specialising in the geology of primary diamond deposits, including projects similar to Letšeng.
3. I am a Registered Professional Geoscientist in British Columbia, Canada (License # 151489) and a Registered Professional Natural Scientist (Geological Science) in South Africa (# 400053/02).
4. I have personally inspected the Letšeng project site from May 29 to June 12, 2022.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Section 7 (excluding 7.6 and 7.7) and Section 12.2.2 as it relates to Main Pipe, as well as relevant parts in the Executive Summary, Conclusions and Recommendations, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I have not had prior involvement with the subject property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Vancouver, British Columbia Canada.

"original signed and sealed"

Kimberley Webb, M.Sc., P. Geo.

SRK Consulting (Canada) Inc.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: "NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho, South Africa" prepared for Gem Diamonds Limited (the "Issuer") dated 13 March 2024, with an effective date of 31 December 2023 (the "Technical Report").

I, Anoush Ebrahimi, Ph.D., P.Eng., do hereby certify that:

1. I am a Principal Consultant with SRK Consulting (Canada) Inc. ("SRK") with an office at Suite #2600 – 320 Granville Street, Vancouver, British Columba, Canada, V6C 1S9.
2. I am a graduate of University of Kerman Iran in 1991 and received Ph.D. degree in mining engineering from University of British Columbia, Canada. I have practiced my profession continuously since 1991 where I have worked at base metal mines operations and mining projects such as Letšeng. My relevant experience includes responsibilities in operations, maintenance, mine design, mine engineering and management.
3. I am a registered Professional Geoscientist in good standing with the Association of Professional Engineers and Geoscientists of British Columbia, license # 30166.
4. I have personally inspected the Letšeng project site from 29 November to 1 December 2022.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Section 15, 16.1, 16.3, 16.4, as well as relevant parts in the Executive Summary, Reliance on Other Experts, Capital and Operating Costs, Conclusions and Recommendations, Risks and Opportunities, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I have not had prior involvement with the subject property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Vancouver, British Columbia Canada.

"original signed and sealed"

Anoush Ebrahimi, Ph.D., P.Eng.

SRK Consulting (Canada) Inc.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: "NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho, South Africa" prepared for Gem Diamonds Limited (the "Issuer") dated 13 March 2024, with an effective date of 31 December 2023 (the "Technical Report").

I, Gerhardus Keyter, Pr.Eng., do hereby certify that:

1. I am a Principal Geotechnical Engineer and Consultant with SRK Consulting (South Africa) (Pty) Ltd with an office at SRK House, 265 Oxford Road, Illovo, Johannesburg, 2196, South Africa.
2. I graduated from the University of Pretoria in South Africa with a Bachelor of Engineering Degree in Civil Engineering (cum laude) in 1992, and with a Master of Science Degree in Soil Mechanics in 1994 from the Imperial College of Science, Technology and Medicine in London, England. I have also obtained South African Chamber of Mines' Certificates in Rock Mechanics ("COMREC") in Surface Mining in 2018, and in Advanced Rock Engineering ("AREC") in 2019. My relevant experience includes pit slope designs, design reviews, audits, on-mine management of operational geotechnical activities, and closure studies for many open pit diamond mines including Letšeng and Liqhobong in Lesotho, Venetia and Voorspoed in South Africa, and Jwaneng and Letlhakane in Botswana.
3. I am a Professional Engineer registered with the Engineering Council of South Africa, with Pr. Eng. Registration No. 20100120.
4. I have personally inspected the Letšeng project site from 7 to 8 October 2020, 13 to 15 September 2021, 13 to 15 February 2022, 29 November to 1 December 2022, and from 12 to 13 June 2023.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Section 16.2 except 16.2.4, as well as relevant parts of the Executive Summary, Conclusions and Recommendations, References and Date and Signature of the Technical Report, and I accept professional responsibility for the relevant parts in those sections of the Technical Report.
8. I have not had prior involvement with the subject property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Johannesburg, South Africa.

"original signed and sealed"

Gerhardus Keyter

SRK Consulting (South Africa) (Pty) Ltd.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: "NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho, South Africa" prepared for Gem Diamonds Limited (the "Issuer") dated 13 March 2024, with an effective date of 31 December 2023 (the "Technical Report").

I, Peter Shepherd, do hereby certify that:

1. I am a Principal Consultant with SRK Consulting (Canada) Inc. ("SRK") with an office at Brookside Office Suite, 8 Montrose Park Boulevard, Victoria Country Club Estate, Pietermaritzburg, 3201.
2. I am a graduate with a BSc degree in Hydrology from the University of Natal in 1990. I have practiced my profession continuously since 1992. I have worked on mining projects in South Africa, Lesotho, Zimbabwe, DRC, Zambia, Namibia, Botswana, Mozambique and the Western African Regionand I have extensive experience with mine water management in mining projects such as Letšeng project. My relevant experience includes stormwater management, water balances, water supply, tailings water management and general water infrastructure projects.
3. I am a Practicing Natural Scientist registered with the South African Council of Natural Scientist (Pr Sci Nat no 400104/95).
4. I have personally visited the Letšeng project site from 29 - 31 July 2019 and from 29 November to 1 December 2022.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Section 16.2.4 and Section 18.5, as well as relevant parts in the Executive Summary, Reliance on Other Experts, Capital and Operating Costs, Conclusions and Recommendations, Risks and Opportunities, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I have not had prior involvement with the subject property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Pietermaritzburg, South Africa.

"original signed and sealed"

Peter Shepherd

SRK Consulting (South Africa) (Pty) Ltd.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: “NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho, South Africa” prepared for Gem Diamonds Limited (the “Issuer”) dated 13 March 2024, with an effective date of 31 December 2023 (the “Technical Report”).

I, Robert McNeill, Pr. Tech. Eng., do hereby certify that:

1. I am a Principal Consultant with SRK Consulting (Canada) Inc. (“SRK”) with an office at Brookside Office Suite, 8 Montrose Park Boulevard, Victoria Country Club Estate, Pietermaritzburg, 3201.
2. I am a graduate with a Diploma in Civil Engineering, with Honours, from the Bulawayo Polytechnic, Rhodesia (now Zimbabwe) in 1978. I have practiced my profession continuously since 1979. I have worked on mining projects in South Africa, Namibia, Zimbabwe, Kenya, Botswana, Mozambique, Ghana, DRC and Senegal and I have extensive experience with tailings/residue storage facilities and waste rock storage facilities for mining projects such as Letšeng project. My relevant experience includes designs, construction, monitoring and auditing tailings/residue storage facilities and waste rock storage facilities for mining projects.
3. I am a Professional Engineer Technologist and Professional Construction Project Manager registered with the Engineering Council of South Africa (ECSA), license # 9170082, and The South African Council for the Construction and Construction Management Professions (SACPCMP), license # PCM0500245, respectively.
4. I have personally inspected the Letšeng project site from 29 - 31 July 2019 and from 29 November to 1 December 2022.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”) and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Sections 18.10 and 18.11, as well as relevant parts in the Executive Summary, Reliance on Other Experts, Capital and Operating Costs, Conclusions and Recommendations, Risks and Opportunities, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I have not had prior involvement with the subject property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Pietermaritzburg, South Africa.

“original signed and sealed”

Robert McNeill, Pr. Tech. Eng.

SRK Consulting (South Africa) (Pty) Ltd.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: "NI 43-101 Independent Technical Report for the Letšeng Diamond Mine Lesotho, South Africa" prepared for Gem Diamonds Limited (the "Issuer") dated 13 March 2024, with an effective date of 31 December 2023 (the "Technical Report").

I, Darryll Kilian, do hereby certify that:

1. I am a Principal Consultant with SRK Consulting (South Africa) (Pty) Ltd. with an office at SRK House, 265 Oxford Road, Illovo, Johannesburg, 2196, South Africa.
2. I am a graduate with a Master's Degree in Environmental and Geographical Science from the University of Cape Town in South Africa. I have practiced my profession continuously since 1995. I have worked on mining projects in South Africa, Zambia, Zimbabwe, Namibia, Mozambique, Democratic Republic of Congo, Sierra Leone, Guinea, Ghana and Mali and have extensive experience with environmental management on projects such as Letšeng project. My relevant experience includes environmental reviews for competent person reports, technical studies and lender due diligences across a range of commodities.
3. I am an environmental sustainability professional registered with the Southern African Institute of Mining and Metallurgy (SAIMM), # T06825 and a member of the South African Chapter of the International Association for Impact Assessment (IAIAsa).
4. I have not visited the Letšeng project site.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Section 20 as well as relevant parts in the Executive Summary, Reliance on Other Experts, Capital and Operating Costs, Conclusions and Recommendations, Risks and Opportunities, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I have not had prior involvement with the subject property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Johannesburg, South Africa.

"original signed and sealed"

Darryll Kilian

SRK Consulting (South Africa) (Pty) Ltd.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: "NI 43-101 Independent Technical Report for the Letšeng Diamond Mine, Lesotho, South Africa" prepared for Gem Diamonds Limited (the "Issuer") dated 13 March 2024, with an effective date of 31 December 2023 (the "Technical Report").

I, Jeremy Clarke, do hereby certify that:

1. I am a Director of Paradigm Project Management (Pty) Ltd, an independent consulting company specialising in the mining industry in Africa. The registered office is 21 Griswold Road, Saxonwold, 2193, Johannesburg, South Africa.
2. I graduated with a BSc degree in Engineering from Salford University in 1976. I have practiced my profession continuously since 1977. I have worked on mining projects in 21 countries covering all of the major commodities and I have extensive experience with diamond mining projects such as the Letšeng Diamond Mine. My relevant experience includes ownership, management, operations, and consulting in all of the diamond mines and major projects in Lesotho, namely, Letšeng, Liqhobong, Mothae, Kao, Motete, and Lemphane.
3. I am a Fellow of the Southern African Institute of Mining and Metallurgy: Number 23163.
4. I have personally inspected the Letšeng project site from 27- 28 August 2019 and on 30 November 2022.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Section 13 and Section 17, as well as relevant parts in the Executive Summary, Reliance on Other Experts, Capital and Operating Costs, Conclusions and Recommendations, Risks and Opportunities, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I have been involved with the subject property on a continuous basis since 1980 in the following capacities:
    - Consulting: original De Beers operations and mine closure.
    - Consulting: design of Plant No1.
    - Consulting: design of Plant No 2.
    - Project management: replacement of the vertical conveyors in Plant No 2.
    - Design of the Patiseng tailings co-disposal system.
    - Various other process engineering projects.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Houghton, South Africa.

"original signed and sealed"

Jeremy Clarke

Paradigm Project Management (Pty) Ltd.

CERTIFICATE OF QUALIFIED PERSON

To accompany the technical report entitled: “NI 43-101 Technical Report on Pre-Feasibility Study for the Letšeng project, Imbabura Province, Ecuador” prepared for SolGold PLC (the “Issuer”) dated 8 March 2024, with an effective date of 31 December 2023 (the “Technical Report”).

I, Carl Kottmeier, P. Eng., MBA, do hereby certify that:

1. I am a Principal Consultant with SRK Consulting (Canada) Inc. (“SRK”) with an office at Suite #2600 – 320 Granville Street, Vancouver, British Columba, Canada, V6C 1S9.
2. I am a graduate with a B.A. Sc. (Applied Science) degree in Engineering from the University of British Columbia in 1989 and an MBA degree from the University of British Columbia in 2003. I have practiced my profession continuously since 1989. I have worked on mining projects in North and South America, Africa and in Europe, and I have extensive experience with base metal and diamond mining projects such as Letšeng mine. My relevant experience includes responsibilities in operations, maintenance, mine design, mine engineering, management, contracting and construction activities.
3. I am a Professional Engineer registered with the Association of Professional Engineers and Geoscientists of British Columbia, license # 18702.
4. I have personally inspected the Letšeng project site from 29 to 31 July 2019 and from 29 November to 1 December 2022.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”) and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am independent of the issuer as defined in Section 1.5 of NI 43-101.
7. I am a co-author of the Technical Report, responsible for Sections 18.1, 18.2, 18.3, 18.4, 18.6, 18.7, 18.8, 18.9, 18.12, Section 21 and Section 22, as well as relevant parts in the Executive Summary, Reliance on Other Experts, Capital and Operating Costs, Conclusions and Recommendations, Risks and Opportunities, References and Date and Signature of the Technical Report, and I accept professional responsibility for those sections of the Technical Report.
8. I have not had prior involvement with the subject property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portions of the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

Dated this 13th day of March 2024 in Vancouver, British Columbia Canada.

“original signed and sealed”

Carl Kottmeier, P. Eng., MBA.

SRK Consulting (Canada) Inc.

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1 Executive Summary

1.1 Introduction

This Technical Report was prepared by SRK Consulting (Canada) Inc. (SRK) for Gem Diamonds Limited (Gem Diamonds) with assistance from SRK Consulting (South Africa) (Pty) Limited (SRK South Africa) and Paradigm Project Management (Pty) Limited (PPM).

The Letšeng Diamond Mine (Letšeng Mine or Letšeng) is an operating open pit mine located in Lesotho in southern Africa. Letšeng Diamonds (Pty) Limited (Letšeng Diamonds) operates the Letšeng Mine in a joint venture with the Government of Lesotho. Letšeng Diamonds is mining two kimberlite pipes: Main and Satellite Pipe.

The report presents updated Feasibility-level results for the Letšeng Mine comprising new three-dimensional geological models, mineral resource and reserve estimates, an updated open pit mine plan, and current environmental, social and community compliances.

Commercial operations by Letšeng Diamonds commenced in April 2004 under prior ownership. Gem Diamonds obtained major shareholding in Letšeng Diamonds in 2006 and the Letšeng Mine has operated continuously since that time, with a current open pit mine plan that extends to 2037.

This report updates a previous NI 43-101 technical report on Letšeng Mine (Venmyn Rand, 2012) and previous mineral resource and reserve statements (Venmyn Deloitte, 2015; reported under SAMREC), and summarizes the technical information available on the Letšeng Mine.

This report incorporates the results of subsequent core drilling, microdiamond sampling and discrete production sampling of the Main and Satellite Pipes completed by Letšeng to December 31, 2023.

1.2 Property Description and Ownership

Letšeng is located in the north of the Lesotho in southern Africa, approximately 245 km east of the capital, Maseru, along the Maloti (Drakensberg) Mountain Range.

Gem Diamonds is a United Kingdom-based diamond producer headquartered in London that is engaged in the exploration and development of diamond mines in Lesotho and Botswana. Gem Diamonds holds 70% interest in the Letšeng Mine after they acquired Letšeng Diamonds in July 2006 and the Government of Lesotho holds the remaining 30%. Letšeng Diamonds operates the Letšeng Mine. The Mining Lease area currently covers 17.408 km^2 and in 2019 and the Mining Lease was renewed for ten years to 2029.

1.3 Geology and Mineralisation

Letšeng is a primary diamond deposit consisting of two adjacent, vertical, steep-sided, downward tapering pipes. The pipes are named Main Pipe (15.05 ha) and Satellite Pipe (4.36 ha). The pipes are dated at ca.90 Ma (Stanley et al., 2015) and were emplaced into 1,800-2,000 m thick basalt sequence of the Lesotho (Drakensberg) Formation which forms part of the Karoo Supergroup. The basalt sequence is underlain by sandstones and siltstones of the Clarens Formation. Letšeng has undergone much less erosion than kimberlite pipes in other areas of southern Africa because of its location in the Lesotho Highlands at ~3,100 masl (metres above sea level) (Stanley et al., 2015). The current erosion levels of the Satellite and Main Pipes are in the upper diatreme and crater settings. The Main and Satellite Pipes are infilled with a variant of Kimberley-type pyroclastic kimberlite (KPK) as well as coherent (CK), hypabyssal (HK), and resedimented volcaniclastic kimberlite (RVK) (Hetman et al., 2018).

The current understanding of the geology is that the Main Pipe consists of 13 internal domains - 11 kimberlite domains and two basalt xenolith/basalt breccia domains. The Satellite Pipe comprises six main kimberlite domains (SVK, NVK, GVK, KIMB7, GVK-SVK-Mixed, CCK). Each domain is associated with different diamond packages and grades.

The geological model presented in this report is updated from the previous technical report by Venmyn Rand, 2012. The updates to the external shell as well as the internal and external geology were made based on extensive drilling and in-pit mapping studies completed after the previous technical report was released.

1.4 Exploration Status

There has been no new exploration work conducted by Letšeng Diamonds at the Letšeng Property since its acquisition by Gem Diamonds, and activities have focused on resource and mine site development and operations.

1.5 Development and Operations

Following Gem Diamonds major shareholding purchase of Letšeng Diamonds in 2006, development of the Letšeng Mine resource, site and operations has comprised:

- 2006 onwards: Renovation of pre-existing buildings and construction of new buildings, including a second Process Plant; significant development of mining operations of the Main Pipe; discrete production sampling of the Main and Satellite Pipes; Mining Lease expansions; expansion of tailings and waste dump facilities; continuation of kimberlite stockpiles; development of environmental considerations implementing management and monitoring plans; development of corporate social responsibility and investment programs.
- Addendums to the Alluvial Ventures 2005 agreement were signed in 2006 and 2008 that extended Alluvial Ventures mining and processing from additional and new areas, that was terminated in 2022.
- 2007: A Shareholders Agreement between the Government of Lesotho and Letšeng Diamonds transferred 6% of the issued shares back to the Lesotho Government, resulting in Gem Diamonds currently holding a 70% share in Letšeng Diamonds and the remaining 30% being held by the Government of Lesotho.
- 2009: New 3D geology models were produced for the Main and Satellite Pipes after relogging of all available core holes, and a new block model and mine plan were developed.

- 2010 Kholo Project: The Kholo Project was initiated in 2010 to meet a production increase from 5.8 Mtpa to at least 8.5 Mtpa in 2015 and to reduce diamond breakage, specifically in the +5 ct Type II stones. This was undertaken via significant front-end modifications to Process Plant 2 over 2012 and 2013, based on front end liberation test work and diamond breakage studies carried out under Pre-Feasibility and Feasibility Study’s completed in 2011.
- 2010: The Minister of Natural Resources granted extension of the Mining Lease for a further three consecutive five-year period as of 26 October 2009, valid until 2024.
- 2010: NI 43-101 Mineral Resource and Reserve statement was reported as at 31 December 2010 with an accompanying Technical Report (Venmyn Rand, 2011).
- Geology delineation core drilling programs of the Main and Satellite Pipes: The grand total core drilling over 2011 to 2023 was 135 holes for 39,557 m
- 2013: Letšeng Diamonds was re-registered under the Government of Lesotho Companies Act of 2011.
- 2015: SAMREC Mineral Resource and Reserve Statement was reported as at 1 January 2015 (Venmyn Deloitte, 2015).
- 2019:10-year extension of the Mining Lease was granted.
- 2024: NI 43-101 Mineral Resource and Reserve Statement was reported as at 31 December 2023 (this report).

1.6 Mineral Resource Statement

The Letšeng Mineral Resource Statement for the Letseng Mine with an effective date of 31 December 2023 is presented in Table 1-1.

1.7 Mineral Reserve Statement

Letšeng diamond mine is an active mining operation that comprises of two kimberlite pipes which are being mined through two adjacent open pits. The kimberlite and waste rocks are mined in 14-meter benches in both open pits. The pits utilize 100 t trucks.

The QP reviewed and verified the pit optimisation and the mine design developed by Letšeng and a third-party consultant. Table 1-2 shows the Letšeng Mineral Reserve Statement (effective date of 31 December 2023).

Table 1-1: Letšeng Diamond Mine Mineral Resource Statement (effective date of 31 December 2023)

Classification	Pipe	Domain	Density g/cm³	Mass (kt)	*Average Value*		*Contained Carats* (kct)
					Diamond Grade (cpht)	**Diamond Price** (US$/ct)	
Indicated	**Main**	K1A	2.52	7,109.60	1.56	$2,170	110.9
		RFW-K1S-K1AS	2.52	2,781.30	1.56	$2,170	43.4
		K1B-1	2.51	7,635.60	1.59	$980	121.4
		RFW-K1S-K1B-1s	2.51	2,417.20	1.59	$980	38.4
		K1B-2	2.51	5,177.20	1.59	$980	82.3
		RFW-K1S-K1B-2	2.51	74.4	1.59	$980	1.2
		K1C	2.51	959.2	1.59	$980	15.3
		K2	2.54	25,793.50	1.61	$1,130	415.3
		K6	2.48	5,682.10	2.47	$825	140.3
		Total Main	***2.52***	***57,630.10***	***1.68***	***$1,211***	***968.5***
	Satellite	NVK	2.5	5,175.60	2.19	$2,185	113.3
		SVK	2.45	7,967.70	2.26	$2,535	180.1
		GVK	2.45	1,746.30	3.46	$970	60.4
		GVK-SVK_Mixed	2.45	1,715.70	3.11	$1,420	53.4
		KIMB7	2.47	1,310.80	2.28	$2,475	29.9
		Total Satellite	***2.47***	***17,916.10***	***2.44***	***$2,088***	***437.1***
TOTAL INDICATED			**2.51**	**75,546.30**	**1.86**	**$1,484**	**1,405.60**
Inferred	**Main**	K1A	2.52	5,929.90	1.56	$2,170	92.5
		RFW-K1S-K1AS	2.52	122	1.56	$2,170	1.9
		K1B-1	2.51	7,152.90	1.59	$980	113.7
		RFW-K1S-K1B-1s	2.51	396.7	1.59	$980	6.3
		K1B-2	2.51	1,371.00	1.59	$980	21.8
		K1C	2.51	348.7	1.59	$980	5.5
		XENO-BSLT	2.66	1,154.90	0.4	$1,130	4.6
		K4	2.52	697.5	1.1	$360	7.7
		K6	2.48	4,952.60	2.47	$825	122.3
		Total Main	***2.51***	***22,126.20***	***1.7***	***$1,217***	***376.3***
	Satellite	SVK	2.45	1,539.30	2.26	$2,535	34.8
		GVK	2.45	309.7	3.46	$970	10.7
		KIMB7	2.47	597.1	2.28	$2,475	13.6
		Total Satellite	***2.45***	***2,446.10***	***2.42***	***$2,238***	***59.1***
TOTAL INFERRED			**2.51**	**24,572.10**	**1.77**	**$1,356**	**435.5**

Notes:

1. The effective date of the Mineral Resource Statement is 31 December 2023. The QP for the estimate is Cliff Revering, P.Eng., an employee of SRK Consulting (Canada) Inc.

2. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. All numbers have been rounded to reflect accuracy of the estimate.

3. Mineral Resources are inclusive of in-situ Mineral Reserves and are exclusive of all mine stockpile material.

4. Mineral Resources are quoted above a +2.00 mm square-mesh bottom cut-off and have been factored to account for diamond losses within the smaller sieve classes.

5. Inferred Mineral Resources are estimated on the basis of limited geological evidence and sampling, sufficient to imply but not verify geological grade and continuity. They have a lower level of confidence than that applied to an Indicated Mineral Resource and cannot be directly converted into a Mineral Reserve.

6. Average diamond value estimates are based on diamond sales data to the end of 2023 provided by Gem Diamond Ltd.

7. Mineral Resources have been estimated with no allowance for mining dilution and mining recovery.

Mr. Revering is not aware of any environmental, permitting, legal, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the mineral resource estimate other than those discussed in the report.

Table 1-2: Open pit Mineral Reserve Estimate for the Letšeng Diamond Mine (effective date 31 December 2023)

Classification	Pipe	Domain	Mass (kt)	Average Value		Contained Carats (kct)
				Diamond Grade (cpht)	Diamond Price (US/ct)	
Probable	Main	K1A Grouping	9 450.1	1.55	2 170	146.5
		K1B Grouping	14 790.2	1.58	980	233.6
		K1C	935	1.57	980	14.7
		K2	17 512.4	1.6	1 130	279.6
		K6	5 250.8	2.48	825	130.2
		Total Main	**47 938.5**	**1.68**	**1 252**	**804.6**
	Satellite	NVK	3 442.5	2.16	2 185	74.4
		SVK	6 164.0	2.22	2 535	136.6
		GVK	1 673.5	3.45	970	57.8
		GVK-SVK Mixed	1 674.4	3.09	1 420	51.7
		KIMB7	1 200.9	2.2	2 475	26.4
		Total Satellite	**14 155.5**	**2.45**	**2 128**	**346.9**
	Stockpile	Live S/P	11.2	1.95	1 754	0.2
		Main Pipe S/P	900.7	1.25	1 190	11.2
		Satellite Pipe S/P	176.6	1.41	2 287	2.5
		Total Stockpiles	**1 088.5**	**1.28**	**1 374**	**13.9**
TOTAL PROBABLE			**63 182.3**	**1.85**	**1 450**	**1 165.5**

Notes:

1. The effective date of the Mineral Reserve Statement is 31 December 2023. The QP for the estimate is Dr Anoush Ebrahimi P. Eng., an employee of SRK Consulting (Canada) Inc.
2. Figures have been rounded to the appropriate level of precision for reporting.
3. Due to rounding, some columns or rows may not compute exactly as shown.
4. Grades quoted as recovered and dry, pre-acid wash.
5. The Mineral Reserves are stated as in-situ dry metric tonnes.
6. K1A Grouping includes K1A, RFW-K1S: K1As and RFW-K1S: XENO-BSLT.
7. K1B Grouping includes K1B-1, RFW-K1S: K1B-1s, K1B-2 and RFW-K1S: K1B-2.
8. The Mineral Reserves were prepared under the guidelines of the CIM, for reporting under NI 43-101.

9. Average diamond value estimates are based on diamond sales data to the end of 2023 provided by Gem Diamonds Ltd.
10. Modifying factors for mining recovery of 88% and waste dilution of 12% applied on pipe contact blocks.
11. Probable Mineral Reserves were derived from Indicated Mineral Resources.
12. Mineral Reserves are inclusive of Mineral Resources.
13. There are no known legal, political, environmental, or other risks that could materially affect the Probable Mineral Reserves.
14. Stockpiles comprise surface loose stocks of material including high-value, low-value and highly diluted kimberlite contact ore. Stockpiles of low-value and highly diluted kimberlite contact ore will be processed at the end of life of open pit mining.
15. The Mineral Reserves reported in this table are attributable solely to the ore to be mined (and processed or stockpiled for later processing) from the open pit mining operations at Letšeng Mine.

1.8 Hydrology and Hydrogeology

The hydraulic gradient for the deeper regional aquifer has been dewatered to the north supported from the observation that the depressurisation holes drilled into the northern wall was dry and only shallow seepage from the historic TSF seeps into the higher walls of the Satellite pit as indicated by the hydrochemistry results. The outflows from the BH10, BH08 and BH07 implies that a steeper hydraulic gradient persists south of the Satellite pit with the shear zone creating a somewhat Zone of relaxation due to higher permeability and the section between the shear sone and open pit being slightly dewatered due to the depressurisation from the outflows over time. The drilled depressurisation holes indicated this possible zone of relaxation due to different pressures and outflows at different drilling intervals into the southern wall. There may be a shallow seepage component from the waste rock dumps south of the Satellite pit that may link up with the increased hydraulic head to the south (Knight Piésold, 2023).

1.9 Geotechnical

The Letšeng Geotechnical Model comprises two primary geotechnical domains based on lithology, namely the basalts and the kimberlites. The main basalt domain has been further sub-divided into different geotechnical sectors (or pit design sectors) based on litho-structural setting, major geological structures, and contact zones, rock mass fabric (i.e., jointing) and pit slope geometry and orientation.

Several geotechnical design studies have been carried out in optimisation of the pit slopes, which has resulted in significant steepening of inter ramp multi bench stacks in both the basalts and kimberlites in the current LOM plan. The design reviews generally concur that the slope designs adopted are very aggressive, and leaves little (if any) room to maneuver if – for example:

- Adverse geotechnical conditions are encountered – e.g., if the kimberlite pipe/basalt contact ‘moves outward’ into a very steep multi bench stack in basalts.
- The stability of an access ramp is compromised by adverse geology or structure, especially in the Satellite Pit where only single ramp access is planned.

Considering the above, any adverse geotechnical conditions encountered, such as:

- an adversely oriented or positioned kimberlite pipe/basalt contact;
- poor rock mass conditions in the kimberlite pipe/basalt contact zone;

- fractured, weak kimberlite between the pipe contact and the basalt raft in Satellite Pit;

are likely to adversely impact implementation and execution of Letšeng's LOM plan given that the only viable remedy/mitigation generally may be to step out at- and/or flatten off the pit slope below such adversely affected area – as had to be done on the west wall of Satellite Pit in the current pushback. That said, the possibility that the LOM plan will not be achieved in full must be recognised.

It is furthermore recognised that the key to achieving the LOM plan, is in operational implementation and execution, which requires significant emphasis and dedicated focus on mining procedures and controls including QA/QC to mitigate rockfall risks to acceptable levels, by:

- Ensuring adequate rockfall retention is achieved, by continually improving pit limit blasting practices at Letšeng, by minimizing breakback and edge loss on benches mined along final pit perimeter walls, and good housekeeping to ensure all loose materials is loaded out and removed before blasting the next bench.
- Regular inspection of working areas including detailed and ongoing mapping of geological, structural geological, hydrogeological, rock mass and geotechnical conditions, on operational bench faces and along final pit wall perimeters, to allow continuous characterization of ground conditions and stability controls encountered, identification of areas of potential instability, with implementation of appropriate interventions to mitigate associated geotechnical risks.
- Maintaining real time monitoring of open pit highwalls in the Letšeng pits in general, and above active working areas specifically, with real time evaluation and interpretation of monitoring data, and adoption of suitable alarm thresholds for early evacuation should any significant instability develop.

Finally, and as noted in Section 16 'Mining Methods':

- Bullnose pit slope geometries as noted in the northeastern highwall of Satellite Pit, is bound to give rise to significant rockfall hazards which cannot be accommodated considering the aggressive, very steep inter ramp slope angles in basalt and the overall height of this bullnose slope. It is therefore recommended that the pit geometry be amended locally to remove this bullnose, and to make provision for minimum 26.0 m wide geotechnical berms at the specified height intervals given the absence of ramps on this part of the slope.

Letšeng and Gem Diamonds management acknowledges and accepts the significant risk associated with providing only single ramp access into Satellite Pit, notwithstanding the aggressive, very steep inter ramp angles adopted in pit slopes in both the basalts and kimberlites at Letšeng.

1.10 Mining

The Letšeng mine is a traditional open pit, truck-excavator, owner-based operation. It employs a mixed fleet of 100-tonne rigid trucks and 45-tonne articulated trucks with matching excavators. Ore and waste are mined in 14 m high benches. The mine life is 13 years with a LOM average ore production rate of approximately 5.3 Mtpa (4.8 Mtpa on a Dry Basis). The total mining capacity varies by year and the mining fleet capacity at peak (years 4 to 7) reaches to a maximum of 26 Mtpa.

1.11 Recovery Methods

Through knowledge gained from all the historical sampling for supporting Mineral Resource estimation work, metallurgical testwork, plant operations and historical ODS, the mine has acquired extensive experience regarding the metallurgical qualities and behaviour of the run of mine ore in the process plants. It is therefore not anticipated that the updated Mineral Resource will behave significantly differently and cause complications in the various plant unit processes. The historical operating data and diamond recovery results give the best indication of the effectiveness of the existing plant design, supported by the prevailing site operational practices and production plans. The current drive to minimise diamond damage to large stones is imperative and will go a long way to maximising value, thus potentially improving the revenue for the mine.

1.12 Infrastructure

The infrastructure is well developed and functioning as would be expected for a mature mining operation. The tailings facility continues to develop and will require ongoing monitoring to assure the construction of the next lift is timely to support the operation. Ongoing monitoring of the stability of the embankment and operations practices is recommended to conform to industry best practices.

Potable water is sourced from the Mothusi Dam water storage facility, and it is our opinion that the supply of water is met via the Mothusi dam and the recycling of water that forms part of the mine water management.

Stormwater from the plant area is captured in the Old RSF dam and reused.

Seepage water from the tailings is shown to have an impact down the Patiseng catchment. Elevated nitrates are also measured within the RTZ system.

There is one operational WRD, extending from the west to the east of the existing mine pits, encompassing a large southern area. The current WRD footprint is approximately 220 ha and varies in height from a few metres to more than 110 m in deep valley areas. Generally, the WRD is advancing in a southerly and southeasterly direction as the western area is now restricted. The historical nitrate removal wetland located west of the WRD adjacent to the national A1 road remains operational.

The process plants produce two residue streams:

- Coarse kimberlite tailings (+2.0 mm to 40.0 mm) 70% split (Planned)/66% (Historical actual), primarily used for wall building and placed dry using bulldozers and secondary use as dressing to the operating surfaces of the WRD. Coarse kimberlite tailings are transported to the Patiseng Valley using a conveyor belt transport system.
- Fine kimberlite tailings stream (-2.0 mm) 30% split (Planned)/34% (Historical actual), permanently disposed of in preformed RSF basin/s as a slurry and deposited via multiple open-ended spigots.

1.13 Environment and Permitting

Letšeng has the necessary permits for its legal license to operate. Permit status is tracked using a permit register. The mine has an approved social and environmental management plan (SEMP) against which it monitors its compliance and performance. The company has a certified environmental management system, which is guided by group policies and operationalised through plans and procedures. Letšeng has an established structure, with suitable capacity and resources to fulfil its environmental and social management commitments.

Recent external audits found that the mine is proactively implementing its obligations contained in permits and the SEMP to address areas that require special attention, notably water quality and biodiversity management. A comprehensive monitoring program is being implemented to track performance on all environmental and social aspects across the mine. Relations with host communities is reportedly good, CSI projects are being implemented and regular engagements are held to keep communities updated on mine performance and address any issues of interest or concern.

1.14 Operating and Capital Cost Estimates

SRK conducted various meetings with Letšeng Management to review both capital and operating costs related to the production supported by the reserves disclosed herein, which give a life-of-mine (LoM) from 2024 to 2037. Capital and operating costs are based on a specific budget prepared by Letšeng and reviewed by SRK for each month of production.

The Letšeng Mine is currently an operating open pit diamond mine and therefore the estimate of capital includes only sustaining capital to maintain the equipment and all supporting infrastructure necessary to continue operations until the end of the projected production schedule.

All costs are presented in U.S. dollars (US$) unless otherwise indicated. The estimate has been prepared based on an exchange rate of LSL18.29/US$.

The base date of all estimates is the last quarter of calendar year 2023 (Q4 2023). No allowance has been included in the estimates for escalation beyond this date or for foreign exchange fluctuations.

Indirect costs have been factored from the direct cost, using percentages established from historical cost data performance at the mine.

The capital cost estimates developed for this study include the costs associated with engineering, procurement, acquisition, construction, and commissioning. The cost estimate is based on budgetary estimates prepared by Letšeng and reviewed by SRK. All estimates are prepared from first principles or on recent site-specific actuals.

The budget and estimate indicate that the Letšeng Mine requires LoM sustaining capital of US$ 76.9 M based on the current production schedule/reserves.

Table 1-3 summarises the sustaining capital estimate.

Table 1-3: LOM sustaining capital cost estimate summary

Description	US$ 000s
Mining equipment	51,613
Closure cost	12,000
Processing plant equipment and tailings management	11,358
Information technology	668
Environment	535
Engineering	382
Finance	301
Total	**76,857**

Source: Letšeng (2024)

Totals do not necessarily equal the sum of the components due to rounding adjustments

The operating cost estimate is broken down by area including mining, treatment, and Other/G&A. The processing and G&A operating costs were estimated by Letšeng based on historical cost data and a cost reduction program developed by Letšeng in 2023 and has been reviewed by SRK. The operating costs are reported in US$.

In 2023, the mine initiated a cost reduction program that resulted in decreased operating costs in Q4 2023 and the program is expected to reduce operating costs in 2024 and beyond. The key drivers behind Letšeng's cost reduction program are a reduced reliance on the use of contractors, increasing plant throughput by 6%, aligning headcount to operational requirements, and an across-the-board spending reduction of 19%.

The mine's objective is to reduce the unit cost of processed tonnes by 25% from 2024 onwards. The plan to improve the processing plant's throughput will require an increase in overall utilization to 82.5%, which would raise the rate per tonne treated to 750 tph. SRK has reviewed these cost reduction initiatives and believes that they are realistic and achievable.

Table 1-4 shows the operating cost summary by major area, which amounts to US$20.80/t treated over the LoM.

Table 1-4: LOM site operating cost estimate summary (per tonne treated)

Item	Unit	Operating Cost
Mining	US$/t treated	11.41
Treatment	US$/t treated	4.81
Other / G&A	US$/t treated	4.58
Total	**US$/t treated**	**20.80**

Source: Letšeng, 2024

Totals do not necessarily equal the sum of the components due to rounding adjustments.

Table 1-5 shows the estimated total site operating costs for the LOM.

Table 1-5: LOM site operating cost estimate summary

Item	Operating Cost (US$ 000s)
Mining	715,670
Processing	301,401
Other / G&A	287,024
Total	**1,304,096**

Source: Letšeng, 2024

Totals do not necessarily equal the sum of the components due to rounding adjustments.

1.15 Economic Analysis

SRK has conducted an economic assessment of the Letšeng project. Over a remaining 13-year operating life and an average LOM production rate of 5.3 Mtpa (4.8 Mtpa on a Dry Basis), the mine is projected to generate approximately $65.8 M pre-tax NPV and $42.0 M after-tax NPV at 8% discount rate, with a pre-tax IRR of 25.0% and an after-tax IRR of 16.8%. Sustaining capital is estimated at $76.9 M.

The information used in the economic analysis is taken from cost and production data that was supplied by Letšeng and reviewed by SRK as described in previous sections of this report. The production physicals were based on Letšeng's production schedule "Schedule 10" as provided to SRK on February 20, 2024.

The summary of the economic analysis is shown in Table 1-6.

Table 1-6: Estimated LOM economic evaluation summary

Description	Value	Unit
Mine Life	13	Years
Market Prices (LOM Average)		
Diamond – Main Pipe	1,282	$US/carat
Diamond – Satellite Pipe	2,115	$US/carat
Diamond (site average)	1,532	$US/carat
Mine Production		
Ore (wet tonnes)	71	M tonnes
Ore (dry tonnes)	64.6	M tonnes
Waste	137	M tonnes
Treatment		
Ore (dry tonnes)	62.7	M tonnes
Diamond Production		
Main Pipe	812.9	k carats
Satellite Pipe	350.2	k carats
Total	**1,163.10**	**k carats**
Net Sales		
Sales	1,782.30	$US M
Gross Revenue		
Selling and Marketing Costs	26.7	$US M
Government Royalties	178.2	$US M
Gross Revenue After Selling and Marketing Costs and Government Royalties	**1,577.40**	**$US M**
Operating Costs		
Mine	715.7	$US M
Treatment	301.4	$US M
G&A	287	$US M
Total Operating Costs	**1,304.10**	**$US M**
Operating Cash Flow	**273.3**	**$US M**
Sustaining Capital Costs	**76.9**	**$US M**
Pre-tax Cumulative Cash Flow	**196.3**	**$US M**
Income Taxes	**44.8**	**$US M**
After-tax Cumulative Cash Flow	**151.6**	**$US M**
Discounted Cash Flow (Net Present Value)		
NPV @8% (pre-tax)	**65.8**	**$US M**
NPV @8% (after-tax)	**42**	**$US M**

Source: SRK (2024)
Totals do not necessarily equal the sum of the components due to rounding adjustments.

Project economics were evaluated using an end of year discounted cash flow (DCF) method. The DCF method requires that annual estimated cash inflows and outflows be converted to equivalent dollars in the year of evaluation. Considerations for this analysis include the following:

- The cash flow model was prepared by SRK with input from Letšeng on taxes and on a cash basis.
- Diamond recoveries are assumed as constant on LOM Plan.
- All cash flow amounts are in US dollars (US$).
- All costs are based on a Q4 2023 base date.
- Inflation is not considered in this model.
- The IRR is calculated as the discount rate that yields a NPV of zero.

- The NPV is calculated by converting annualised cash streams to start of project (2024) at different discount factors. All cash flows are assumed to occur at the end of each respective year.
- The Foreign Exchange (FX) rate used is 18.29 ZAR: USD for all years.
- 100% ownership financing is assumed.
- Sustaining Capital, Reclamation and Closure costs are included in the model.

The economic analysis is performed on a before and after-tax basis in constant dollar terms, with the cash flows estimated on a project basis.

A sensitivity analysis was performed to analyze the impact of the change on the main drivers: diamond grade, mine, treatment, and G&A operating costs, sustaining capital costs, exchange rate and diamond prices.

An additional sensitivity analysis was performed to determine the impact of the change on after-tax NPV (8%) using different diamond price escalation scenarios.

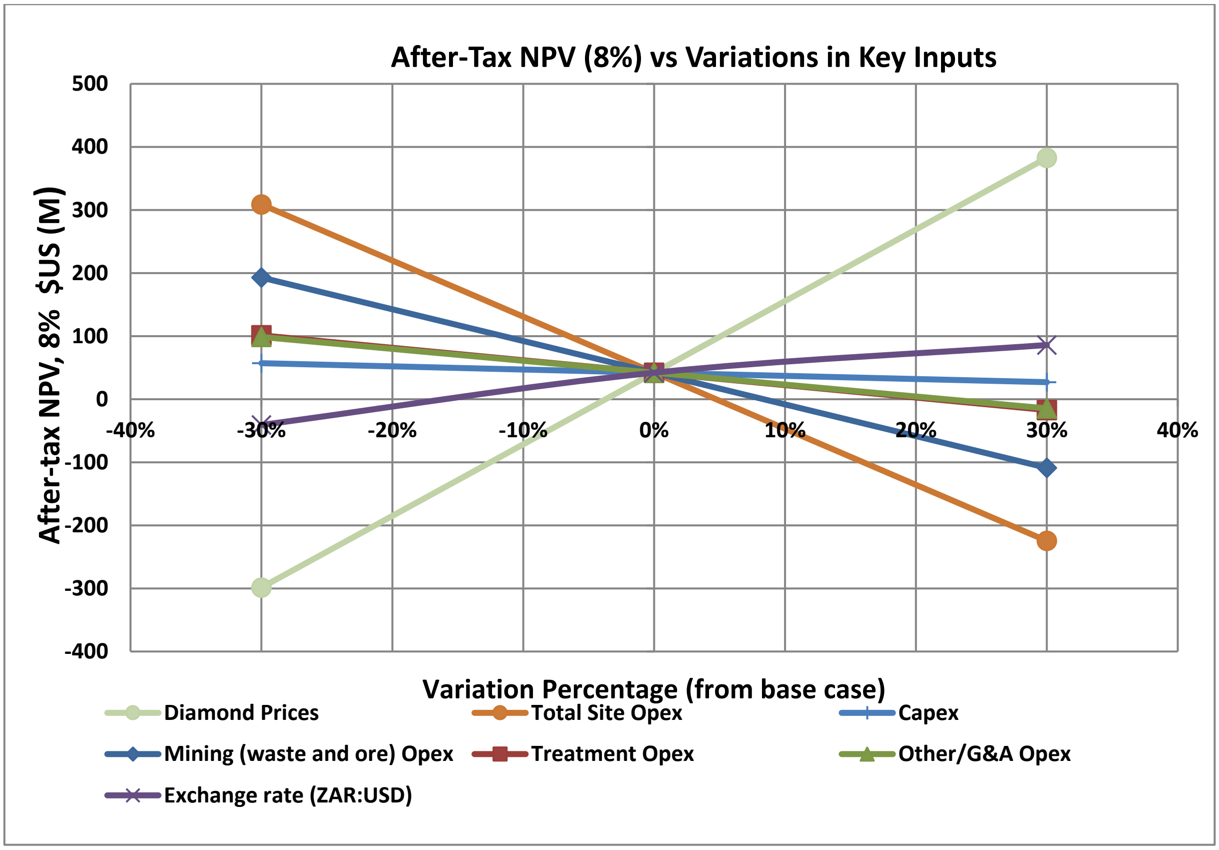
The sensitivities are based on +/- 30% of the base case. The after-tax sensitivity analysis is presented in Table 1-7, and in Figure 1-1 and Figure 1-2.

The sensitivity analysis indicates that although the project has positive economics, it is highly sensitive to changes in the diamond price. A 10% increase in the diamond prices increases the after-tax NPV (8%) to US$ 155.6 M, whereas a 10% decrease in diamond prices makes the project uneconomic. The project is also very sensitive to total site opex and mining opex, and moderately sensitive to changes in the ZAR:USD exchange rate, treatment, and Other/G&A opex. The project is relatively insensitive to changes in capex.

Table 1-7: Sensitivity analysis – after-tax NPV (8%) (US$ M)

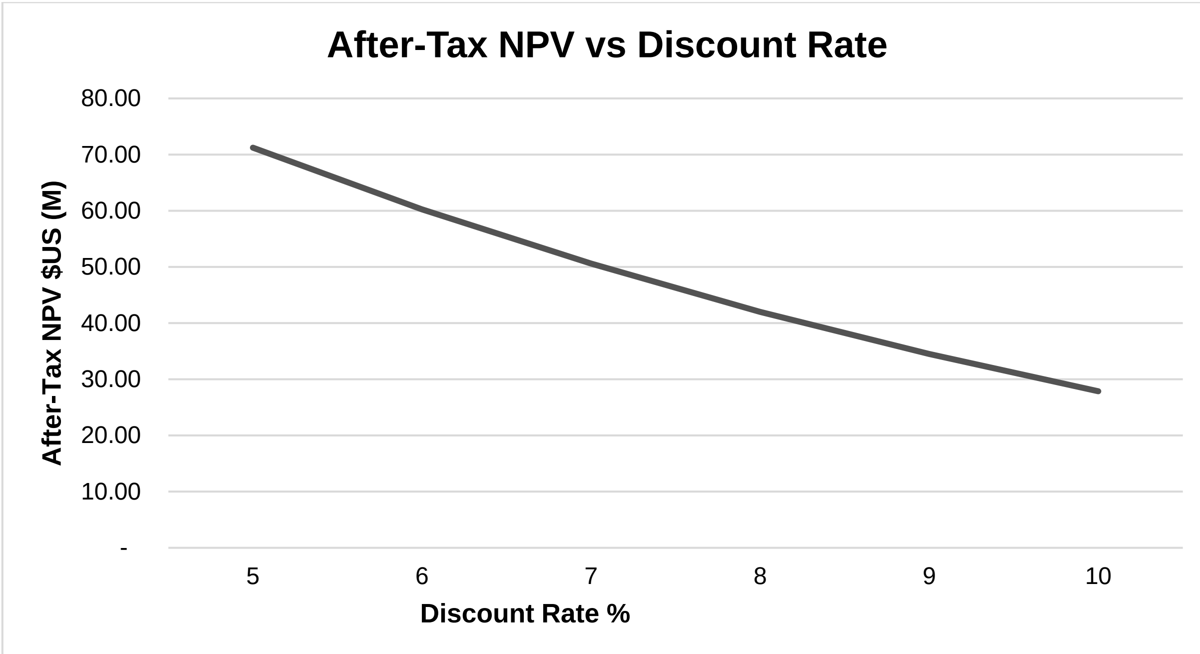
	After-tax NPV (8%) US$ (M)						
Sensitivity	**-30%**	**-20%**	**-10%**	**0%**	**10%**	**20%**	**30%**
Mining Opex	192.9	142.6	92.3	42	-8.2	-58.5	-108.8
Treatment Opex	101.2	81.5	61.8	42	22.3	2.6	-17.2
Other/G&A Opex	98.7	79.8	60.9	42	23.2	4.3	-14.6
Total Site Opex	308.7	219.8	130.9	42	-46.8	-135.7	-224.6
Capex	57.1	52.1	47.1	42	37	32	27
Diamond Prices	-298.6	-185	-71.5	42	155.6	269.1	382.7
Exchange rate (ZAR: USD)	-40.8	-13.2	14.4	42	56.7	71.3	85.9

Source: SRK (2024)



Source: SRK (2024)

Figure 1-1: Sensitivity analysis of after-tax NPV (8%) vs variations in key inputs



Source: SRK (2024)

Figure 1-2: Sensitivity of after-tax NPV vs discount rate

Additional sensitivity analysis was performed to determine the impact of the change on after-tax NPV (8%) using different diamond price escalation scenarios. Table 1-8 shows the different diamond price escalation scenarios that were evaluated and how sensitive project NPV is to each scenario.

Table 1-8: Sensitivity of after-tax NPV vs select diamond price escalation scenarios

		Diamond Price Escalation					
Scenario	**After-tax NPV (8%) $US (M)**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029-2037**
FS Base Case	42	0.00%	0.50%	1.00%	1.50%	2.00%	0.00%
#1	69.7	0.00%	0.50%	1.00%	1.50%	2.00%	1.00%
#2	4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
#3	152	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

1.16 Conclusions and Recommendations

Geology and Mineral Resource

Following the completion of multiple drilling programs and the investigation of the new data from the Main and Satellite Pipes, the geology models have been significantly updated since the 2015 Venmyn Deloitte statement. New geological domains within both pipes have been identified, and the grade and diamond values associated with these new domains have been determined using production data. The understanding of the geology and resources within the indicated areas of classification for the Main and Satellite Pipes is supported by representative drilling and sampling together with significant production data from all major geology domains. The distribution of drillholes and associated sampling below the inferred resource areas within the Main and Satellite Pipes have revealed that the geology is complex and that there are rock types present that have not been observed within the resource domains. Therefore, the potential grade and diamond values of these areas below the inferred resources are unknown.

The QP makes the following recommendations for geology and resource development at Letšeng:

- Ongoing pit mapping and incorporating this data into quarterly geology model updates.
- Whenever possible, discrete production data from the various geological domains will support an improved understanding of the source and distribution of the high-value Type IIa diamond population within specific geology domains.

Mining

The QP makes the following recommendations for mining at Letšeng:

- The inferred resources at the bottom of the pit needs to be explored as soon as possible. This is necessary for making a final decision about the final pit expansion and the stripping associated with that work.
- The Letšeng mine is in transition from a contractor-based operation to an owner-based operation, and the progress of this transition must be monitored closely. The optimization and the mine design must be revised using the updated and verified operating cost after the transition has been completed later in 2024 using actual cost data.

Geotechnical and Hydrogeological

Mr. Keyter makes the following recommendations pertaining to the geotechnical aspects of Letšeng:

- Delineation drilling to confirm the location of the kimberlite pipe/basalt contact and its intersection with the LOM pit shell is essential considering the potential impact an adversely positioned contact may have on the stability of very high multi bench stacks in basalt (if such contact ‘moves outward’ into such multi bench stack) and where an adversely oriented contact may compromise the stability of an access ramp – especially in the Satellite Pit where only single ramp access is planned.

- Additional geotechnical drilling, sampling, field and laboratory testing must be carried out as required and in accordance with international best practice (e.g., applicable ISRM Suggested Methods) and design guidelines (e.g., Wyllie et al., 2004; CSIRO, 2009) to augment Letšeng's geotechnical database and to allow ongoing design review and verification during implementation of the LOM design.
- Inter-ramp angles should be reduced in weaker geotechnical sub-domains in kimberlite where adverse ground conditions comprising more friable, fractured, and weaker ground are typically experienced.
- As noted in Section 16 'Mining Method' and in Section 25 'Interpretation and Conclusions', the key to achieving the LOM plan for Letšeng, is in operational implementation and execution, which will require significant emphasis and dedicated focus on mining procedures and controls including QA/QC to mitigate rockfall risks to acceptable levels (Itasca, 2018 and 2022; SRK, 2021 and 2023a) – including:
  - Ensuring adequate rockfall retention within inter ramp multi bench stacks and overall slopes, including:
    - Operationally stepping out to leave a wider berm where required because of adverse ground conditions encountered, or where LOM design geometries were not achieved.
    - Continually improving pit limit blasting practices to minimise breakback and edge loss along final pit perimeter walls.
    - Scaling of bench faces and removal of all loose material on bench crests before the next bench is blasted.
    - Removal of hard toes, before the next bench is blasted.
  - Regular inspection of working areas including safe declarations at the start of shifts.
  - Detailed and ongoing mapping of structural geological, hydrogeological, rock mass and geotechnical conditions, on operational bench faces and along final pit wall perimeters, to allow continuous characterisation of ground conditions and stability controls encountered.
  - Identification of areas of potential instability, with implementation of appropriate interventions to mitigate associated geotechnical risks, including:
    - Installation of draped mesh to retain loose rock in areas of elevated rockfall risk.
    - Installation of ground anchors, rockbolts, dowels, mesh and/or shotcrete where required to ensure the stability of key blocks and wedges in areas where multi-bench stability is critical, e.g., the stability of a ramp accessway.
    - Installation of other rockfall retention measures such rockfall barriers and fences.
  - Maintaining real time monitoring of open pit highwalls in the Letšeng pits in general, and above active working areas and areas of elevated rockfall risk specifically – including:
    - Real time evaluation and interpretation of monitoring data.

    - Maintaining an updated Ground Control/Hazard Management Plan.
    - Adoption of suitable alarm thresholds and developing suitable Trigger Action Response Plans (TARPs) for early evacuation should any significant ground movement or instability develop.
    - Maintaining an updated Emergency Response and Evacuation Procedure.
  - Implementation of appropriate pit slope dewatering and groundwater monitoring, to ensure adequate depressurisation of pit slopes in general, and of the kimberlite pipe/basalt contact zone specifically.
  - Ensure regular external review of the geotechnical performance of the Letšeng pit slopes, including an evaluation of the adequacy or otherwise of the pit slope designs adopted.
  - Adoption of Safe Highwall Practices (e.g., stand-off distances, approaching highwalls, inspection requirements, etc.).
  - Ensuring the Letšeng Geotechnical Department is adequately resourced and organised to meet the day to day demands and challenges that will arise because of the aggressive, very steep inter ramp multi bench stack designs adopted, to allow management of the Letšeng mining operation in a safe manner.

Mr. Shepherd makes the following hydrogeological conclusions and recommendations as described by Knight Piésold:

- An advanced dewatering program can be employed to depressurize the open pit walls in advance prior to the deepening of the open pits.
- The opportunity exists to save on costs involved to rather apply advanced dewatering than to drill multiple depressurization holes into the open pit walls at each level with depth.
- The water that gets abstracted can be used for mining process directly as this water will be of good quality.
- The coring holes drilled in and around the open pits need to be deepened to the proposed future mining depth (2654 masl) and equipped with VWT sensors to monitor the groundwater level drop during the advanced dewatering program and to confirm the hydraulic gradient and seepage faces are within a safe working distance for stability requirements for the mine workings.

Infrastructure

The Letšeng mine has been operating for many years and has all of the infrastructure necessary to support the economic extraction of its reserves. Sufficient sustaining capital has been estimated for the remaining 13 years of mine production in order to replace aging infrastructure as required, and to keep the mine operating at an average LOM production rate of 5.4 Mtpa. The careful management of sustaining capital expenditures will be important to achieving the mine’s profitability goals. SRK recommends that the mine considers the salvage value of any saleable equipment at the end of mine life.

The ongoing project to mitigate the elevated nitrates needs to continue.

The EoR RSFs Annual Performance review states, “There are sufficient fines storage capacity available to accommodate the life of mine tonnage profiles to full supply levels provided that the LoM design is implemented" and also “Additional course storage capacity will be required in 2026 in order to accommodate the life of mine tonnage profiles.

Costs and Economics

In 2023, the mine initiated a cost reduction program that resulted in decreased operating costs in Q4 2023 and the program is expected to reduce operating costs in 2024 and beyond. The key drivers behind Letšeng’s cost reduction program are a reduced reliance on the use of contractors, increasing plant throughput by 6%, aligning headcount to operational requirements, and an across-the-board spending reduction of 19%.

The QP reviewed these cost reduction initiatives and believes that they are realistic and achievable. SRK recommends that Letšeng Mine continue to drive down costs in order to improve the mine’s economics.

Recovery Methods

Gem Diamonds and the Letšeng Diamond Mine should implement that planned management, production, and financial changes to the operations in order to reduce the Processing unit costs and bring them in line with similar operations.

The potential use of XRT machines to recover large diamonds earlier in the Plants’ flowsheets should be reconsidered. This has the potential to reduce diamond damage and hence improve revenues. This could be linked to improved diamond liberation technology at the Front End of the Plants. This project could be linked to the likely reduction in tonnages treated when the mine moves to underground operations.

The Recovery Plant equipment should be improved so that the need for the Recovery Tailings Retreatment Plant is removed. This will improve recovery efficiency and security, as well as reduce overall operating costs. The Capital Expenditure 5-year forecast caters for this project.

Environmental Studies, Permitting, and Social or Community Impact

Based on the review, the following can be concluded regarding Letšeng Diamonds:

- Several Environmental Impact Assessments (EIA) have been conducted since the original impact assessment in 2004 for various project expansion activities; and all have been approved by Lesotho government.
- The mine is in possession of all relevant permits required to legally operate and tracks their status on an ongoing basis through a tracker system.
- There is an up-to-date Social and Environmental Management Plan (SEMP), (dated 2022, which is used to monitor and manage a range of aspects, including cultural heritage, general and hazardous

waste, water and mine waste residue, biodiversity and ecosystem services, climate change and rehabilitation and mine closure, all of which are regularly monitored and audited.

- There are established integrated health, safety and environmental (HSE) management systems, which are compliant with ISO Standards 14001 (2015) and 45001 (2018). The latest surveillance audit was conducted in 2023 and found that the mine's systems are mostly effective and fulfill the requirements of the applied standards, except for identified non-conformities that would be subject to corrective actions.
- The company has the relevant structures, staff, and resources to manage its environmental and social management obligations and ensure ongoing compliance. This includes fulfilment of its corporate social responsibility and investment commitments.
- The company's systems are regularly audited internally and externally. The most recent external audits found a high level of compliance with the SEMP. The auditors concluded that the mine's Environmental and Social Action Plan (ESAP) and the external audits on SEMP compliance are used to proactively track performance against the SEMP conditions. It noted that efforts are underway to ensure compliance with appropriate water quality standards. The most recent SHE legal audit has implemented the legal arrangements necessary to satisfy the requirements of the HSE directives set by the legislator.
- Based on the Letseng Annual Environmental Performance Report there has been a decline in environmental incidents, with no significant or major environmental incidents reported in 2022.
- Gem Diamonds is committed to implementing recommendations of Task Force Climate-related Financial Disclosures (TCFD), which was formally adopted by the Board in 2021. Progress on the phased implementation of the TCFD Roadmap is documented in the 2022 and mid-year 2023 Our Approach to Climate Change reports.
- The mine focuses on projects that provide the greatest benefits to project-affected communities through continuous engagement and partnerships. US$ 0.5 M were invested in CSI projects in 2022.
- Stakeholder engagement is guided by a stakeholder engagement strategy and implemented through the stakeholder engagement master plan. Engagements with various stakeholders continued as planned, with only one grievance registered and addressed through the established grievance management procedure in 2022.
- The Integrated Rehabilitation and Closure Plan is updated every three years and the mine closure liability estimates are reviewed annually. The Basis of Estimate Closure Liability Update FY2023 has been approved and submitted to the Ministry of Mining as per Mining Lease Agreement requirements.
- Letšeng Diamonds should maintain its legal license to operate, through ensuring compliance with permit conditions and monitor and report on the mine's performance to the approved Social and Environmental Management Plan (SEMP).
- The mine should continue to fulfill its CSI commitments and proactively engage communities and other stakeholder to stay abreast of issues and concerns thereby retaining its social license to operate.

Recommended Work Program Costs

SRK has not recommended any work programs as part of this feasibility study and has assumed that any costs associated with the recommendations in this report section would be covered under existing departmental budgets.

2 Introduction

This Technical Report was prepared by SRK Consulting (Canada) Inc. (SRK) for Gem Diamonds Limited (Gem Diamonds) with assistance from SRK Consulting (South Africa) (Pty) Limited (SRK South Africa) and Paradigm Project Management (Pty) Limited (PPM).

The Letšeng Diamond Mine (Letšeng Mine or Letšeng) is an operating open pit diamond mine located in Lesotho (formerly the Kingdom of Lesotho) in southern Africa. Letšeng Diamonds (Pty) Limited (Letšeng Diamonds) operates the Letšeng Mine in a joint venture with the Government of Lesotho. Gem Diamonds holds 70% interest in Letšeng Diamonds after obtaining major shareholding in 2006. Letšeng Diamonds is mining two kimberlite pipes: Main Pipe and Satellite Pipe.

In May 2019, Gem Diamonds on behalf of Letšeng Diamonds commissioned SRK to visit Letšeng Mine to review the geology and mine operations, and to prepare updated geological models, updated mineral resource and mineral reserve estimates, an updated open pit mine plan and an independent Feasibility-level Technical Report. The services were rendered from May 2019 to December 2023.

The Effective Date of this technical report is 31 December 2023.

2.1 Terms of Reference

This Technical Report documents Feasibility-level mineral resource and mineral reserve estimates and an open pit mine plan for the Letšeng Mine based on updated geological models and updated permitting, environmental and social compliances. It was prepared in accordance with the Canadian Securities Administrators' National Instrument 43-101 (NI 43-101) Standards of Disclosure for Mineral Projects (June 2023) and Form 43-101F1 (June 2011). The mineral resource and reserve estimates reported herein were prepared in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) “Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines” (CIM, 2019) and “Definition Standards for Mineral Resources and Mineral Reserves” (CIM, 2014).

This report updates a previous NI 43-101 technical report on Letšeng Mine (Venmyn Rand, 2012) and previous mineral resource and reserve statements (Venmyn Deloitte, 2015; reported under SAMREC), and summarises the technical information available on the Letšeng Mine.

2.2 Qualified Persons and Responsibilities

None of the Qualified Persons (QPs) or any associates employed in the preparation of this report has any beneficial interest in Letšeng Diamonds or Gem Diamonds or its subsidiaries; they are not insiders, associates, or affiliates of Letšeng Diamonds, Gem Diamonds or its subsidiaries. The results reported herein are not dependent upon any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings between Letšeng Diamonds, Gem Diamonds and the QPs. The QPs are being paid a fee for their work in accordance with normal professional consulting practice.

2.2.1 Scope of Work

This report summarises the work of several consultants with the scope of work for each company listed below, which combined comprises the total project scope of work:

- SRK (Canada):
  - Project management
  - Geological models and mineral resource estimate
  - Review of open pit mine plan
  - Project infrastructure excluding water management and waste disposal
  - Mineral reserve estimate
  - Operating and capital costs
  - Economic analysis
- SRK (South Africa):
  - Mining geotechnical
  - Hydrology and water management
  - Fine and coarse residue (tailings) and waste rock storage
  - Environmental studies, permitting and social or community impact
- PPM (South Africa):
  - Mineral Processing and Metallurgical Testing, Recovery Methods

2.2.2 Qualifications and Responsibilities

The SRK Group comprises over 1,400 professionals in over 40 offices on six continents, offering expertise in a wide range of resource engineering disciplines. The SRK Group's independence is ensured by the fact that it holds no equity in any project and that its ownership rests solely with its staff. This fact permits SRK to provide its clients with conflict-free and objective recommendations on crucial judgment issues. SRK has a demonstrated track record in undertaking independent assessments of Mineral Resources and Mineral Reserves, project evaluations and audits, technical reports, and independent feasibility evaluations to bankable standards 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.

The QPs preparing this technical report are specialists in the fields of kimberlite geology, exploration, mineral resource and mineral reserve estimation and classification, open pit and underground mining, geotechnical, environmental, permitting, metallurgical testing, mineral processing, processing design, capital and operating cost estimation, and mineral economics.

The individuals listed in Table 2-1, by virtue of their education, experience, and professional association, are considered Qualified Persons (QPs) as defined in the NI 43-101 standard, for this report, and are members in good standing of appropriate professional institutions. All QPs are independent as defined by NI 43-101. QP scopes of work and specific report section responsibilities are shown in Table 2-3. Contributors to the report and their roles are listed in Table 2-2.

Table 2-1: QP qualifications and responsibilities

QP Name	Company	QP Responsibility/Role	Report Section
Casey Hetman, M.Sc., P.Geo.	SRK (Canada)	Project Manager; Geology - Satellite Pipe	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.1, 12.2.1, 12.2.2 (Satellite Pipe), 12.2.4, 19, 23, 24, 25, 26.1, 26.9, 27, 28
Kimberley Webb, M.Sc., P.Geo.	SRK (Canada)	Geology - Main Pipe	7 (Main Pipe), 12.2.2 (Main Pipe), 27, 28
Cliff Revering, P.Eng.	SRK (Canada)	Mineral Resource Estimate	12.2.3, 14, 25, 26.2, 27, 28
Anoush Ebrahimi, PhD., P.Eng.	SRK (Canada)	Mine Engineering, Mineral Reserves	15, 16.1, 16.3, 16.4, 26.3, 27, 28
Gerhardus Keyter, B.Eng., M.Sc., DIC, Pr.Eng.	SRK (South Africa)	Mining Geotechnical	16.2 except 16.2.4, 26.4, 27, 28
Peter Shepherd, B.Sc. (Hons), Pr.Eng.	SRK (South Africa)	Hydrology, Water Management	16.2.4, 18.5, 26.4, 27, 28
Robert McNeill, Pr. Tech. Eng., Pr. CPM	SRK (South Africa)	Tailings and Waste Rock Disposal	18.10, 18.11, 26.5, 27, 28
Jeremy Clarke, B.Sc. (Hons), Pr.Eng.	PGM	Mineral Processing and Recovery Methods	13, 17, 26.7, 27, 28
Carl Kottmeier, B.A.Sc., MBA, P.Eng.	SRK (Canada)	Infrastructure, Mining Costs, Economic Analysis	18.1, 18.2, 18.3, 18.4, 18.6, 18.7, 18.8, 18.9, 18.12, 21, 22, 25, 26.6, , 27, 28
Darryll Kilian, B.A. (Hons), M.A. (EGS) HDE (PG) Sec	SRK (South Africa)	Environmental, Social and Governance, Social and Community	20, 26.8, 27, 28

Table 2-2: Contributor qualifications and roles

Contributor Name	Company	Contributor Roles
Wayne Barnett, PhD., P.Geo.	SRK (Canada)	3D Model
Grete van Staden, B.Tech. (Hons)	SRK (Canada)	3D Model and Database
Vassie Maharaj	SRK (South Africa)	Social Management and Compliance
Martin Podolsky, B.Sc. (Hons), P.Geo.	SRK (Canada)	Report Compilation

2.3 QP Site Visits

In accordance with NI 43-101 guidelines, all QPs except two have visited the Letšeng Mine as listed in Table 2.4. Two QPs conducted technical meetings as the basis for this report as summarised below and listed in Table 2.5 in addition to other relevant QP office visits.

Table 2-3: QP site visits to Letšeng Mine

QP	Date	Description of Inspection
Casey Hetman	30 April - 22 May 2019; 24 - 26 January 2020; 24 March – 04 April 2022 20 – 25 March 2023	Geology review, drill core and stockpile sampling, Satellite Pipe NVK Domain bulk sample review, Satellite Blow geology; pit geology, drilling in progress, drill core geology and sampling
Kimberley Webb	May 29 – June 12, 2022	Main Pipe geology review, including pit geology, drilling in progress, drill core geology and sampling
Cliff Revering	19-22 May 2019	LOM mineral resource data and production reconciliation
Carl Kottmeier	29 - 31 July 2019; 29 November - 01 December 2022	Review of mine infrastructure and factors relevant to mine costing and economic analysis;
Gerhardus Keyter	07 - 08 October 2020 Accompanied by Mr Peter Terbrugge, SRK (South Africa): Engineering Geology	Mine geotechnical evaluation of basalt and kimberlite pit slopes – for pit slope steepening study
	13-15 September 2021 Accompanied by Mr Peter Terbrugge, SRK (South Africa): Engineering Geology	Geotechnical review of the open pit slope performance
	13-15 February 2022 Accompanied by Mr Peter Terbrugge, SRK (South Africa): Engineering Geology	Review of stability and lateral support requirements in the West Wall in Satellite Pit
	29 November - 01 December 2022	Mine geotechnical review
	12 - 13 June 2023	Geotechnical review of the open pit slope performance
Peter Shepherd	29 - 31 July 2019; 29 November - 01 December 2022	Review of hydrology and water management systems and facilities
Robert McNeill	29 - 31 July 2019; 29 November - 01 December 2022	Review of tailings and waste rock disposal facilities
Anoush Ebrahimi	29 November - 01 December 2022	Review of mine engineering and modifying factors relevant to mineral reserves
Jeremy Clarke	27- 28 August 2019; 30 November 2022	Reviewed process and recovery plants, recovery methods and security

* It is noted that Casey Hetman has a seven-year Letšeng project history, having been independently involved since 2013 in geology development and training, with 14 prior site visits.

Darryll Kilian and Vassie Maharaj of SRK (South Africa) conducted three meetings with Gem Diamonds and Letšeng Diamonds personnel for review of Environmental, Social and Community (ESC) instead of conducting inspections of the mine site, as follows:

- 12 August 2019: meeting with Gem Diamonds Group Health, Safety, Corporate Social Responsibility and Environmental Superintendent at Gem Diamonds Technical Services office in Johannesburg to determine the state of ESC management at Letšeng Mine operations and collect relevant permits and management and audit reports.

- 23 August 2019: visited the Gem Diamonds offices in Johannesburg and engaged with Group personnel on ESC issues.
- 23 October 2019 and 07 February 2024: video conferencing with Group personnel to discuss and clarify queries identified during the document review process.

Based on review of the available documents, a site visit was deemed not necessary for these QPs.

Table 2-4: QP Office and other visits

Qualified Person	Date	Primary Purpose	Office Visited
Casey Hetman	29 January 2020	Gem Diamonds tender review	Gem Diamonds Marketing and Sales office in Antwerp
Darryll Kilian	August 12, 23, 2019, October 23, 2019	Environmental and Permitting	Gem Diamonds
Vassie Maharaj	August 12, 23, 2019, October 23, 2019	Social and Community	Gem Diamonds

2.4 Sources of Information

This technical report is based on information collected by the QPs during site visits and meetings performed from June 2013 to December 2023, and on additional information provided by Letšeng throughout the course of the QPs' investigations. Other information was obtained from the public domain.

The QPs were given full access to relevant data and conducted interviews of Letšeng personnel to obtain information on the past work and to understand procedures used to collect, record, store and analyse historical and current operational data.

SRK has no reason to doubt the reliability of the information provided by Letšeng and the information has been verified to the extent possible and accepted by the QPs. The sources of information are summarised as follows:

- Discussions with Letšeng personnel.
- Inspection of the Letšeng Mine, including the open pits, processing facilities (production process plants and diamond recovery), waste facilities, other infrastructure, and drill core.
- Review of operational data collected by Letšeng.
- Review of mining operations.
- Review of pit mapping and drilling data collected by SRK and Letšeng.
- Independent laboratory tests and analyses.
- Past internal and external reports.
- Visit to Gem Diamonds Antwerp sales facility.

- Additional information from public domain sources.

2.5 Units, Currency and Rounding

The units of measure used in this report are as per the International System of Units (SI) or “metric” except for Imperial and other units that are commonly used in industry (e.g., carats for diamonds). A carat is a unit of mass equal to 200 milligrams.

Currency figures quoted in this report refer to United States (US) dollars (US$, USD or $) unless otherwise noted.

This report may include technical information that requires subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the QPs do not consider them to be material.

An appropriate number of significant figures has been used to reflect the order of accuracy and the degree of precision of the available numerical data.

2.6 Acknowledgement

SRK would like to acknowledge the support and collaboration provided by Letšeng and Gem Diamonds personnel for this assignment. Their collaboration was greatly appreciated and instrumental to the success of this project.

2.7 Declaration

SRK’s opinion contained herein and effective **31 December 2023** is based on information collected by SRK throughout the course of SRK’s investigations, which in turn reflect various technical and economic conditions at the time of writing. Given the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favourable.

3 Reliance on Other Experts

3.1 Introduction

The QPs have relied upon the following other expert reports, which provided information regarding mineral rights, surface rights, property agreements, royalties, environmental, permitting, closure planning and social and community impacts, depreciation/taxation and marketing included in sections of this Technical Report.

3.2 Mineral Tenure, Surface Rights and Royalties

The QPs have confirmed that the mineral resources reported herein are within the licence boundaries given below. The QP has not performed an independent verification of land title and tenure as summarised in Section 4 of this Technical Report. SRK did not verify the legality of any underlying agreement(s) that may exist concerning the permits or other agreement(s) between third parties.

The QPs have not independently reviewed ownership of the Project area and any underlying property agreements, mineral tenure, surface rights, or royalties. The QPs have fully relied upon, and disclaim responsibility for, information derived from Gem and legal experts retained by Gem Diamonds for this. This information is used in Section 4 of the Report. The information is also used in support of the Mineral Resource estimate in Section 14, the Mineral Reserve estimate in Section 15, and the economic analysis in Section 22.

3.3 Market Studies, Contracts, and Logistics

The QPs have not independently reviewed the marketing or diamond price forecast information. The QPs have fully relied upon, and disclaim responsibility for, information derived from Gem Diamonds Marketing Services BV (GDMS). This information is used in Section 19 (Market Studies and Contracts) and in support of the financial analysis in Section 22 and the Mineral Reserves estimate in Section 15.

Diamond marketing, diamond sale terms and conditions, and diamond price forecasting are specialised businesses requiring knowledge of supply and demand, recent economic activity and other factors that are highly specialised. The QPs consider it reasonable to rely upon GDMS for such marketing and price forecasting information as the company has been involved in the sale of its diamonds for many years and is very well connected to the diamond industry.

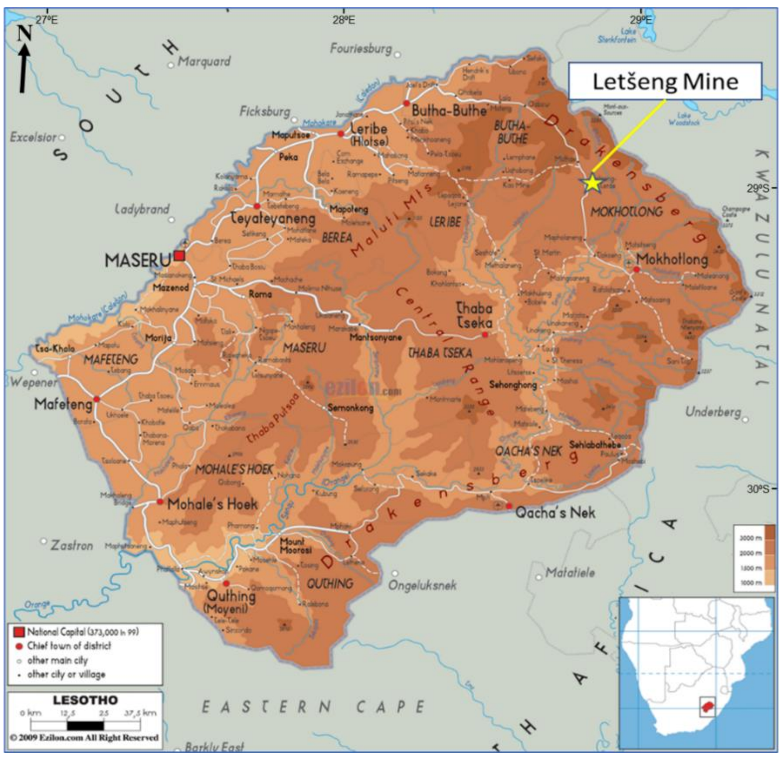
SRK was informed by Letšeng Diamonds that there are no known litigations potentially affecting the Letšeng Project.

4 Property Description and Location

4.1 Location

Lesotho is a landlocked country in southern Africa, bordered on all sides by South Africa. Letšeng Mine is located in the northern highlands of Lesotho in the Mokhotlong District, approximately 245 km east of the capital and largest city, Maseru (Figure 4-1). The geographic coordinates of Letšeng Mine are 29º 0' 10''S / 28º 51' 48''E.

Lesotho has an area of over 30,000 km^2 and a population of about 2.33 million. The Sotho ethnic group, also known as Basotho, from which the country derives its name, composes 99.7% of the country's population, making it one of the most ethnically homogenous in the world. Sesotho and English are the official languages. Lesotho was formed in 1822 by King Moshoeshoe I and in 1966 the country achieved independence from the United Kingdom. Lesotho is considered a lower middle-income country with significant socioeconomic challenges. However, it targets a high rate of universal primary education and has one of the highest rates of literacy in Africa (81% in 2021). Lesotho is a member of the United Nations, the Commonwealth of Nations and the Southern African Development Community.



Source: modified from Ezilon.com (2009)

Figure 4-1: Letšeng Mine location map

4.2 Issuer's Title and Mineral Tenure

The Property is governed by Mining Lease (ML) 26033, issued as described in Section 4.2.1 and covering an area of 17.408 km^2. The Mining Lease is held 100% by Letšeng Diamonds (Pty) Ltd (Letšeng Diamonds). Gem Diamonds Limited (Gem Diamonds) currently holds a 70% share in Letšeng Diamonds and the remaining 30% is held by the Government of Lesotho. The Lease was renewed in 2019 for a period of 10 years.

4.2.1 Mining Lease

The following information was provided by Letšeng Diamonds:

- On 28 May 1999, a Mining Agreement was concluded between the Government of the Kingdom of Lesotho (Government of Lesotho) and Letšeng Diamonds (Pty) Ltd, and Letšeng Investment Holdings South Africa (Pty) Ltd (LIHSA), and Johannesburg Consolidated Investments Ltd (JCI) and Letšeng Diamonds Limited. Annexure A of the Mining Agreement showed a map with two areas demarcated, the Production Area (12.3 km^2) within a larger Protection Area (49.8 km^2) (Figure 4-2; Table 4-1). The Mining Agreement stated that following its tenth anniversary, Letšeng Diamonds may extend the term of the Mining Agreement and Mining Lease for three consecutive five-year terms, resulting in an extension of 15 years.
- On 26 October 1999, the Mining Lease between the Basotho Nation and Letšeng Diamonds, which granted to Letšeng Diamonds the right to mine for diamonds at the Letšeng Mine situated at Letšeng-La-Terai, was registered (Reg. No. 26033). The Mining Lease covered the same area as the Mining Agreement. (Figure 4 2; Table 4-1). The Mining Lease granted Letšeng Diamonds the right to mine for diamonds for ten years.
- On 24 February 2006, the Minister of Natural Resources issued a legal notice of the "Declaration of Diamond Protection Area and Diamond Security Area" status of the Letšeng-La-Terae land area (Table 4-1). The 2006 Diamond Protection area (49.8 km^2) was the same size as the Protection Area in the 1999 Mining Lease. The Diamond Security Area (12.3 km^2) was the same size as the Production area in the 1999 Mining Lease.
- On 21 June 2007, in an addendum to the 28 May 1999 Mining Agreement, the Government of Lesotho and Gem Diamonds Limited recorded their agreement to make the term of the Mining Agreement begin on 26 October 1999 in order to harmonise this commencement date with the commencement date of the Mining Lease.
- On 2 April 2008, the Minister of Natural Resources granted Letšeng Diamonds their request to increase the Mining Lease area. The Mining Lease boundaries were extended to the northeast and southwest to cover 16.7 km^2 (Figure 4-2). The main extension was to the northeast, which was required for the inclusion of the new residue storage facility (RSF) in the Patising Valley.
- On 1 June 2010, Letšeng Diamonds exercised this option and being in full compliance with the terms of the Mining Lease, was granted this extension as of 26 October 2009, until 2024 by the Minister of Natural Resources.

- In March 2018, Letšeng Diamonds applied for the renewal of the Mining Lease in terms of section 33 of the Mines and Minerals Act, 2005 (Letšeng Diamonds, 2018).
- On 6 June 2019 Letšeng Diamonds requested grant of a further 0.66 km^2 extension to the east of the Mining Lease and the boundary of the adjacent prospecting licence (which has since expired), down-valley of the existing Patising Valley RSF. This additional area was required for waste rock storage and would be sufficient for the remainder of the life of mine (LOM) plan.
- On 2 October 2019, following a successful statutory negotiation process, the terms of the renewed Mining Lease, (Reg. No. 46146) covering a total area of c. 17.408 km^2, including the 6 June 2019 Mining Lease extension (Figure 4-3), were agreed to with the Lesotho Mining Board, and included the following material terms:
  - The Lease was renewed with immediate effect for a period of 10 years (the maximum period allowed under the 2005 Mines and Minerals Act) with an exclusive right granted to Letšeng Diamonds to renew the mining lease for a further period of 10 years.
  - The respective shareholding in the Letšeng Mine remained unaltered.
  - An increase in the royalty payment in terms of diamonds sold (Section 4.4.3).
  - The number of work permits which may be granted to Letšeng Diamonds in respect of foreign nationals increased in order to fill any skills gap at the mining operations.

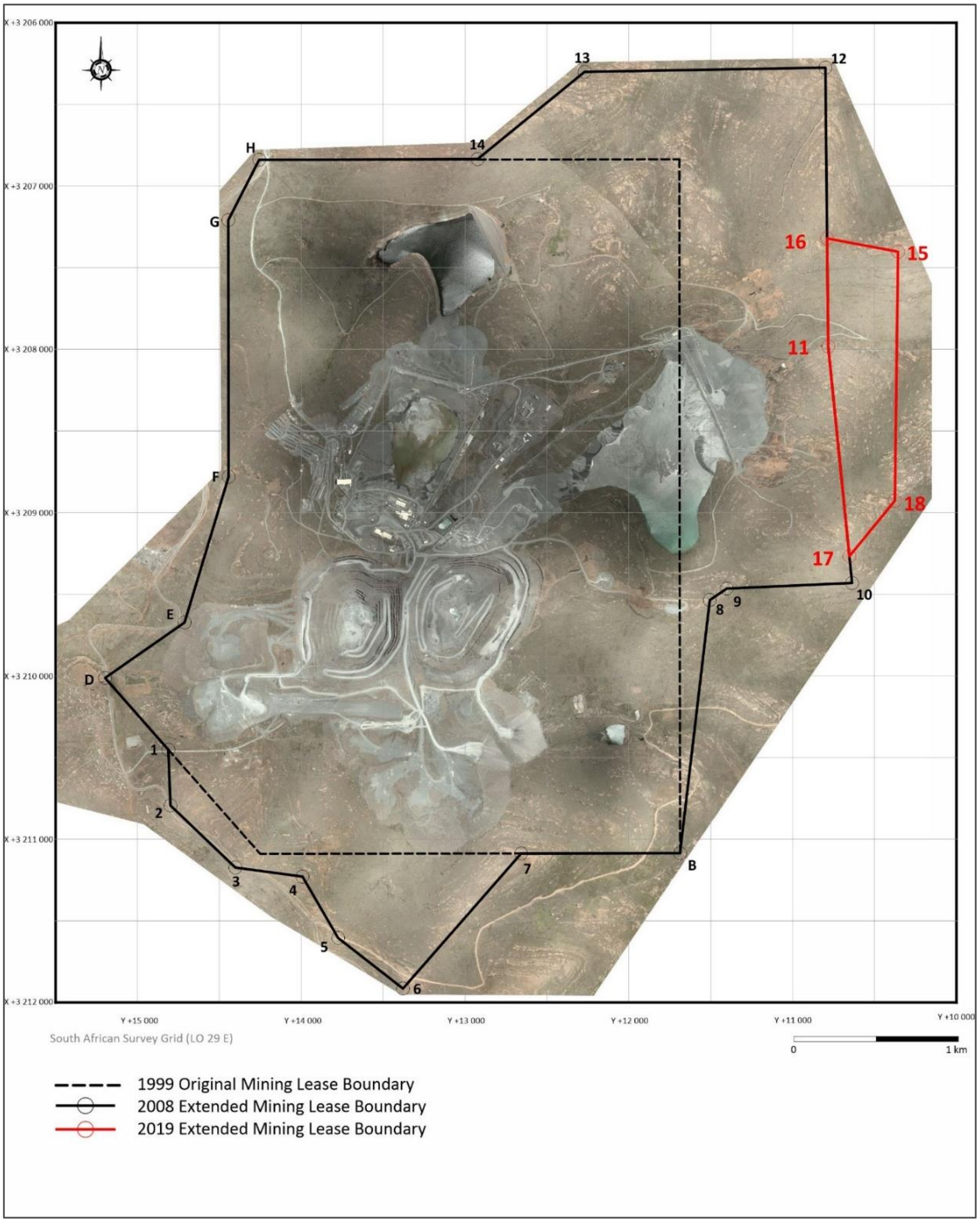
The land area of the Letšeng mineral tenure is summarised in Table 4-1, including the Mining Lease (Reg. No 26033) granted on 26 October 1999, the 2006 Diamond Security and Protection Area boundaries, the 2008 lease area extension and the 2019 renewed Mining Lease (Reg. No. 46146) extension.

Table 4-1: Letšeng Diamonds Mineral Tenure Information

Letšeng Diamonds Mineral Tenure	Point	X	Y
1999 Production Area and 2006 Diamond Security Area Boundaries	A	-11695.248	-3206836.049
	B	-11690.9343	-3211084.53
	C	-14261.86	-3211087.429
	D	-15210.4676	-3210011.126
	E	-14723.7321	-3209671.845
	F	-14454.1955	-3208778.704
	G	-14456.1656	-3207208.615
	H	-14267.1224	-3206838.946
1999 and 2006 Diamond Protection Area Boundaries	I	-10640.3925	-3205788.303
	J	-10633.5665	-3213176.969
	K	-17370.8737	-3213185.173
	L	-17382.0246	-3205796.496
2008 Southwest Extension Boundaries	1	-14823.1506	-3210450.585

Letšeng Diamonds Mineral Tenure	Point	X	Y
	2	-14810.0000	-3210792
	3	-14413.0000	-3211172.0000
	4	-14051.6	-3211206.4
	5	-13783.8000	-3211603.2000
	6	-13387	-3211912.8000
	7	-12663.4	-3211086.0000
2008 Northeast Extension Boundaries	8	-11508.6000	-3209534.4000
	9	-11404.2000	-3209464.4000
	10	-10637.6000	-3209430.0000
	11	-10783.8	-3207981.6
	12	-10801.0000	-3206275.2000
	13	-12275.2000	-3206301.0000
	14	-12930.0000	-3206835.4000
2019 East Extension Boundaries	15	-10355.9	-3207402.2
	16	-10790.5	-3207320.3
	17	-10654.1	-3209266.3

Source: South African Survey Grid (LO 29 E). Source: Letšeng Diamonds (2023)



Source: Letšeng Diamonds (2023)

Figure 4-2: Letšeng Diamond Mine Mineral Tenure Map – 1999 Mining Lease, 2008 and 2019 Mining Lease extensions

Source: Letšeng Diamonds (2023)

Figure 4-3: Letšeng Diamond Project Mineral Tenure Map

4.2.2 Surface Rights

Letšeng Diamonds does not own surface rights within the Mining Lease and is required to pay the Government of Lesotho an annual rent that is due every April. The amount is linked to the Lesotho Consumer Price Index (CPI) and is adjusted annually.

Under the Mining Lease Agreement Clause 16 Rentals, it is stated under 16.2:

- The Mining Company shall pay each year an amount, using a base of $140,000 (one hundred and forty thousand US Dollars), an equivalent amount as per the amount during the past financial year.
- Letšeng Diamonds advised their current monthly fixed fee is $67,205 with variable costs payable per tonne at $0.41 single shift and $0.36 double shift.

4.3 Underlying Agreements

4.3.1 Mining Agreement

- On 28 May 1999, the Mining Agreement between the Government of Lesotho and Letšeng Diamonds, LIHSA and JCI was signed. This entitled Letšeng Diamonds the exclusive right to prospect, dig for, mine, win and dispose of diamonds, for its own account within an area of 12.3 km^2, then termed the Production Area.
- On 20 September 2004, Letšeng Diamonds advised the Ministry of Natural Resources that as required by the Mining Lease Agreement, commencement of commercial production was achieved on 7 July 2004.
- On 3 January 2005, Letšeng Diamonds requested the Ministry of Natural Resources approve that Commencement of Commercial Production was officially recorded as 1 August 2006 as defined in the terms of the Mining Agreement.
- On 21 June 2007, an Addendum to the 28 May 1999 Mining Agreement between the Government of Lesotho and Letšeng Diamonds was signed by the Government of Lesotho and Gem Diamonds. This Addendum provided for the standardisation of the dates of the Mining Lease and Mining Agreement to both begin on 26 October 1999.
- On 2 October 2019, Gem Diamonds announced that following a successful statutory negotiation process, the terms of the renewed Mining Lease were agreed to with the Lesotho Mining Board and included the material terms listed in Section 4.3.2.
- It should be noted that the 2019 Mining Agreement extension to 2029 is eight years before the 2037 LOM as updated in this report and will require Letšeng Diamonds to renew the Mining Agreement with the Government of Lesotho.

4.3.2 Sales Agreement

The following information was provided by Letšeng Diamonds, and is after Venmyn Rand (2012):

- On 1 July 2006, a Sale of Shares Agreement between LIHSA and Gem Diamonds was signed and effective. The agreement was prepared with input and consent from the Government of Lesotho, as required by the Mining Lease Agreement. Gem Diamonds purchased 76% of the shares.
- On 1 February 2007, a Shareholders Agreement between the Government of Lesotho, Letšeng Diamonds and Gem Diamonds was signed, and Gem Diamonds transferred 6% of the issued share capital to the Government of Lesotho. The Sales Agreement recorded other changes to the Lease Agreement.
- On 1 February 2007, a Loan Agreement between the Government of Lesotho, Letšeng Diamonds and Gem Diamonds was signed, whereby the Government of Lesotho obtained a loan from Gem Diamonds for the payment of the purchase price of the Purchased Shares.
- Gem Diamonds currently holds 70% share in Letšeng Diamonds and the remaining 30% is held by the Government of Lesotho.

4.3.3 Royalties

The 1999 Mining Agreement between the Government of Lesotho and Letšeng Diamonds stipulated that Letšeng was required to pay the Government of Lesotho a Diamond Sales Tax (DST) at a rate of 7% of the market value of all diamonds sold. The DST is now recognised as a royalty under the Mines and Minerals Act, 2005. The royalty was increased to 8% by the 2007 Sales Agreement.

Under the 2 October 2019, Mining Lease and Agreement renewal, the royalty payable in respect of diamonds sold by Letšeng was increased from 8% to 10% (the current stipulated rate under the Mines and Minerals Act 2005) with effect from 3 October 2019. The royalty may be remitted in whole or part in the event Letšeng embarks upon any material capital project.

4.3.4 Alluvial Ventures Agreements, 2003 – 2022

Letšeng Diamonds under CAM originally entered into an agreement with Alluvial Ventures in 2003, a mining and processing contractor, to independently mine and process overburden (alluvial or eluvial material), and tailings, at its own expense, within certain specified portions of the Production Area.

Alluvial Ventures entered into an agreement with Letšeng and Gem Diamonds in 2005 to independently mine and process overburden (alluvial or eluvial material), and tailings, within certain specified portions of the Production Area at a minimum rate of 330,000 t per quarter, on Letšeng's behalf. Under the 2005 agreement, Letšeng retained first option to process the material mined. Alluvial Ventures was required to provide its own trained staff, earthmoving and excavation assistance, process plant and materials, diamond recovery plant, and related services. The original contract agreed upon was for an initial, indefinite period.

Alluvial Ventures operated at its own expense under a revenue sharing scheme that specified the diamonds recovered were marketed in conjunction with those from Letšeng. The revenue split was calculated on the individual or parcel sales value, that allowed net revenue flow of between 34% and 40% to Alluvial Ventures, subject to a minimum value per carat. The agreement further highlighted that Alluvial Ventures would not be entitled to more than US $650,000 for any individual stone. No rehabilitation costs were included in the contract and Letšeng will be ultimately responsible for rehabilitation of Alluvial Ventures' mining areas and tailings disposal sites.

In October 2006, an addendum to the 2005 agreement was signed by Letšeng that allowed Alluvial Ventures to process the weathered, near-surface kimberlite from the Main Pipe. In December 2009, a further Addendum was signed, applicable from December 2008, to process material from the following additional areas:

- Alluvial gravel in the Patising Valley, eluvial gravel over the Main Pipe, weathered material within the Main Pipe, and addition of new kimberlite stockpiles north of No. 1 Plant.

Alluvial Ventures agreed to upgrade its process plant capacity and haulage fleet in 2008 (MLT 29.35 M) and 2020 (MLT 28.30 M), and in 2011 the process plant was modified to include a jaw crusher, secondary cone crusher as well as a tertiary cone crusher. Commissioning and operational challenges resulted in the tertiary crushing section not running optimally and it was later shut down.

The commercial arrangement with Alluvial Ventures was concluded in mid-2022 with the process plant being decommissioned and removed from site.

4.3.5 Gem Diamonds Support Services & Diamond Marketing Agreements 2006-2023

Gem Diamonds has two service agreements with Letšeng for support services and diamond marketing. The term for Diamond Distribution is indefinite with a 6-month written notice of termination and the term for the Support Services Agreement is also indefinite with a 12-month written notice of termination.

Gem Diamonds Support Services Agreement

With effect from 1 July 2006, Letšeng and Gem Diamonds entered into a Support Services Agreement for the provision of support and consulting services to Letšeng at an agreed upon fee.

Under the 2006 agreement in return for their services, Gem Diamonds received a monthly fee of US $50,000. The fee is escalated annually by the percentage increase in the Consumer Price Index as published by the Central Bank of Lesotho for the year, provided that the annual percentage increase of the fee will not be less than 5%. This fee is inclusive of Gem Diamonds' cost for staff, their travel to site and accommodation.

In addition to providing adequate mine management and technical personnel, Gem Diamonds agrees to render to Letšeng the following support services, advice and assistance, as required:

- Legal services.
- Financial, administrative, treasury and accounting services.
- Technical services relating to mining, metallurgy, geology and diamond control.
- Operational services relating to general management, project management, SHE, security and planning.
- Environmental, community and corporate governance services.
- Commonwealth and British Government consultation and liaison services.
- Media and communications advice and services.

Gem Diamonds Marketing and Sales (GDMS) Diamond Distribution Agreement

Gem Diamonds invests in sales, marketing and diamond analysis operations to maximise revenue through a combination of marketing channels including tenders, strategic partnerships and extractions for manufacturing to capture additional margins further along their diamond pipeline.

Letšeng's top-quality diamonds are sent from Lesotho to Baobab Technologies in Antwerp for analysis to maximise returns from diamond tenders. Polished diamonds are sold through direct selling channels to diamantaires.

4.4 Permits and Authorisation

Letšeng Diamonds provided SRK with their Environmental Legal Register covering key legislation provisions and their legal requirements and status (Letšeng Diamonds, 2022a). This permit register listed a total of 21 permits, noting seven exemptions, three non-requirements and one permit that has been closed out. There were no permit violations reported. Table 4-2 presents the validity status of permits that were evaluated during the external legal SHE audit (Legal Services Inc., 2023).

Based on document review and correspondence with group personnel, it was verified that the mine has all the necessary permits required to operate. Letšeng has identified that the RSF post-2024 will require extension and timeous permitting.

Table 4-2: Letšeng Diamond Mine Permit Validity 2023

#	PERMIT REQUIREMENT	RELEVANT LEGISLATION	RENEWAL FREQUENCY	STATUS
1	Environmental impact assessment	Environmental Act 2008 -Section 25	1 Year	Valid
2	Excessive emission of noise	Environmental Act 2008 -Section 32	-	NA
3	Waste licence - Generate, store, dispose hazardous waste	Environmental Act 2008 -Section 76	1 Year	Exempted
4	Cross boundary movement of hazardous waste	Basel Convention, May 2000	1 Year	Valid
5	Ionizing radiation licence	Environmental Act 2008 - Section 32	1 Year	Exempted
6	(Excessive) Pollution licence	Environmental Act 2008 - Section 44	1 Year	Exempted
7	Storage of explosives	Explosives Proclamation 41 1958 - Section 23	-	Valid
8	Use of explosives - blasting licence	Explosives Proclamation 41 1958 - Section 72	-	Valid
9	Licence for explosives magazine	Explosives Proclamation 41 1958 - Section 12	No duration indicated on the license	Valid
10	250 lb of explosives + fifteen thousand detonators	Explosives Proclamation 41 1958 - Section 40	NA	Valid
12	Prospecting licence	Mines and Minerals Act - Section 20	2 Years	NA
13	Mining lease (Agreement)	Mines and Minerals Act - Part IV	10 Years	Valid until 01 October 2029
14	Water use permit	Water Act 2008 - Section 20	5 Years	Valid until August 2028
15	Discharge the effluents or pollutant into the sewerage systems	Water Act 2008 - Section 40	1 Year	Exempted
17	Water use permit	Water Act 2008 - Section 20	5 Years	Exempted
18	Effluent discharge permit	Water Act 2008 - Section 27	-	Exempted

Source: Letšeng Diamonds (2023)

4.5 Environmental Liabilities

4.5.1 Environmental Liabilities Overview

When the Mining Agreement and Mining Lease between the Government of Lesotho and Letšeng Diamonds were signed in 1999, there were no environmental laws enacted. The Kingdom of Lesotho Environment Act of 2001 was subsequently legislated, and this law requires that an Environmental Impact Assessment (EIA) be carried out for any proposed mining activities in Lesotho, with EIA Licences being issued by the National Environmental Secretariat (NES).

The Lesotho Environment Act 2008 (No. 10 of 2008) came into force in June 2009, replacing the Environment Act of 2001. The purpose of the Environment Act is to protect and ensure proper management of the environment, conservation and sustainable utilisation of natural resources of Lesotho, and connected matters.

Letšeng Diamonds advised SRK that environmental and social impact management systems and plans are in place and assessed, comprising compliance submissions under internal and external audits and certifications, mine and rehabilitation closure liabilities, including groundwater and surface water quality, tailings and waste rock disposal and climate change monitoring and reporting. Registers of environmental permits and authorisations and a Stakeholder Engagement Plan with a grievance procedure are maintained.

Gem Diamonds reports corporate sustainability under United Nations Sustainable Development Goals (SDGs) for implementing recommendations of “Task Force Climate-related Financial Disclosures” (TCFD), which was formally adopted in 2021. Safety and decarbonisation are reportedly at the forefront of the TCFD roadmap. Progress is documented in the 2022 and mid-year *2023 Our Approach to Climate Change* reports.

4.5.2 Environmental and Social Impact Assessments and Management Plans

The following information was provided by Letšeng Diamonds, and is after Venmyn Rand (2012):

<u>Historical Environmental Impact Assessments and Management Plans, Letšeng Diamonds (CAM) 2003 to 2006</u>

Mine development at Letšeng commenced before the Lesotho Environmental Act of 2001 was enacted. In October 2003 the NES, Letšeng Diamonds and Golder Associates Africa (Pty) Ltd (Golder) established the requirements to deliver the EIA Licence, that required Letšeng to follow the NES procedures to obtain the necessary permits to develop an Environmental Management Plan (EMP).

During July 2004, the Letšeng Diamonds EIA and EMP were submitted to the NES and both were granted in October 2004.

An EIA for the second process plant, Plant 2, was submitted to the NES in February 2006.

Environmental and Social Impact Assessments and Environmental Management Plans, Letšeng Diamonds (Gem Diamonds) 2006 to Present

The following submissions were made to the NES (or referenced in submissions):

- 2006 – EMP for construction of Plant 2.
- 2007 – EIA for new waste rock disposal sites and a new EIA for construction of the Patising Valley slimes dam.
- 2010 – EMP updated to realign with operations.
- 2012 – an EIA and EMP amendment to baseline soils land capability rating and pre-mining land use in the De Beers Valley as part of the Letšeng Mine expansion project initiated in 2010 (Project Kholo) was prepared by ESS Earth Science Solutions (ESS) (ESS, 2012).
- 2013 – a Social and Environmental Impact Assessment (SEIA) incorporating expansions under the Kholo Project was prepared by Environmental Resources Management Southern Africa (Pty) Ltd (ERM) (ERM, 2013a).
- 2013 – Environmental Management Plans (EMPs) were prepared by ERM for integrated water management; integrated waste management; hazardous substances management; soil management; air quality management; energy management and biodiversity management (ERM, 2013 b, c, d, e, f, g and h).
- 2013 – a Corporate Social Investment Strategy (CSIS) for Letšeng Diamonds was developed and reported by Sehoai Santho (2013). Furthermore, Gem Diamonds reports its own corporate sustainable development.
- 2015 – a Nitrate Management Plan (NMP) was developed and reported by GroundTruth (2015).
- 2015 and 2019 – Social and Environmental Management Plans (SEMPs) were prepared and reported by JD Consulting (2016) and JD Consulting (2019). Sustainability report indicates additional more recent updates of SEMP.
- 2021 – Traffic Management Plan implemented by conducting road traffic inspections onsite to assess compliance with the road safety rules.
- 2022 - SEMPs and associated sectors plans were updated and reported by JD Consulting (2022).
- 2023 – Noise and vibration study undertaken by Enaex (2023).

The EIAs, EMPs, SEIAs, SEMPs and CSIS are further described in Section 20.

4.5.3 Water Management

Letšeng has established water infrastructure systems within the various catchments which form part of the Stormwater Plan. Water management takes place via the following systems: Patising; RTZ; Qaqa; Mothusi; Old Slimes Dam; and Pit. Letšeng relies on runoff from rainfall for part of its water supply, that reportedly would be affected by a prolonged drought. Potable water is sourced from the Mothusi Water

Storage Facility and is pumped to the Potable Water Dam. The SEMP includes monitoring and reporting requirements pertaining to these facilities.

Water management at Letšeng for operations, mining, processing and tailings and waste rock disposal operations are described in:

- Section 18: Project Infrastructure.
- Section 20: Environmental Studies, Permitting and Social or Community Impact.

4.5.4 Tailings and Waste Rock Disposal

Letšeng has committed to managing its residual storage facilities in a manner that protects the employees' health and safety, community and environment. In 2021, Letšeng adopted GISTM to align with global practices on the residual storage lifecycle. An International Review Board was appointed to implement GISTM and provide assurance that all objectives are met and exceeded.

The process plants produce two tailings streams (coarse and fine kimberlite). All of the tailings are disposed of into the Patising RSF situated in the Patising Valley. Letšeng operates one large waste rock dump. The historical nitrate removal wetland located to the west of the waste rock dump adjacent to the national road remains operational. Tailings and waste rock disposal are described in Section 18.

4.5.5 Certifications and Audits

Mine health, safety, environment and social management systems certifications and audits carried out by Letšeng are summarised below and are further reported in Section 20.

Annual Environmental Management Reporting

Letšeng conducts EMP audits in consultation with the Department of Environment (NES prior to 2008). These reviews cover implementation of SEMP commitments, compliance with Lesotho legislation and aligning environmental management at Letšeng with international best practice. The 2022 Annual Environmental Performance Report has been completed and the report was submitted to the Department of Environment (Letšeng Diamonds, 2023).

Mine Health, Safety and Environmental (HSE) Legal Compliance Audits

Letšeng tracks legal HSE compliance through annual audits and reports have been produced since 2015. An audit was conducted in August 2023 (Legal Services Inc., 2023).

ISO 14001:2015 and ISO 45001:2018

Letšeng has established management systems and conducts regular certification and surveillance audits. Letšeng was able to retain its ISO 14001:2015 and ISO 45001:2018 certification based on assessments in 2023.

<u>Social and Environmental Management Plan Audits</u>

Letšeng undertakes internal and external SEMP audits. The most recent external SEMP audit was conducted in November 2023 and is reported in Shangoni (2023). The audit report was submitted to the Department of Environment.

<u>Record of Competence</u>

Based on available documentation, Letšeng continues to make progress in meeting legal compliance commitments and has confirmed that the mine has not received or been issued with a notice, demand or complaint from any relevant government authority in respect to the management of the natural environment or compliance with the relevant environmental licences or permits. The sustainability report (2022) also states that there have been no fines for environmental transgressions or non-compliance with host country legislation for the 13th consecutive year.

4.5.6 Mine Closure

Letšeng Mine closure liability, criteria and risk assessments were carried out by E-TEK Consulting Environmental Engineers (E-TEK). Letšeng Diamonds provided SRK with the following documentation (Section 20):

- E-TEK (2017)
- E-TEK (2018)
- E-TEK (2022)
- E-TEK (2023)

Letšeng has prepared a Basis of Estimate Closure Liability Update FY2023 to update the closure liability estimates for the Premature (Y2023), Closure Forecast (Y2023 – Y2026) and LOM (Y2037) closure scenarios for Letšeng Mine.

4.6 Mining Rights in Lesotho

4.6.1 Historical Mining Rights in Lesotho Overview

The Government of Lesotho has enacted three legislative laws that provide regulatory framework for the mining industry, covering exploration and issuing of licences and exports. These laws are:

- The Mines and Minerals Act 2005
- The Mine Safety Act 1981
- The Precious Stones Order 1970

The mining industry in Lesotho is dominated by diamond mining.

In 2012, the Government of Lesotho constituted a fully-fledged Ministry of Mining and in 2015 the Lesotho Minerals and Mining Policy 2015 was enacted with the overriding goal to deliver lasting socio-economic development gains centered on job creation from the exploitation of Lesotho's endowment in mineral resources, mainly diamond mining.

4.6.2 Precious Stones Order 1970

The Precious Stones Order 1970 regulates dealing in the export, extraction, and all commercial rules related to rough diamonds in Lesotho and provides for conditions and penalties dealing in rough diamonds.

4.6.3 The Mine Safety Act 1981

The Mine Safety Act 1981 provides for conditions and procedures in safety, health and environment in the Lesotho mining industry, to make provision for the purpose of preventing the occurrence of accidents at mines; for securing the safety, health and welfare of persons employed at mines; and for connected purposes.

4.6.4 Kimberley Process Certification Scheme 2003

The Kimberley Process is a joint government, international diamond industry and civil society initiative whose regulations guide international trade in rough diamonds to avoid dealing in conflict diamonds, that defines conflict diamonds as rough diamonds used by rebel movements to finance conflicts against legitimate governments.

Lesotho is a participant in the Kimberley Process. The Kimberley Process organisation states it has 56 participants, representing 82 countries, with the European Union and its Member States counting as a single participant.

Kimberley Process members account for approximately 99.8% of the global production of rough diamonds. In addition, the World Diamond Council, representing the international diamond industry, and civil society organisations, such as Partnership-Africa Canada, participate in the Kimberley Process and have played a major role since its outset.

4.6.5 Mines and Minerals Act 2005 and 2022 Amendment

The Mines and Minerals Act 2005 (Act No. 4 of 2005), Kingdom of Lesotho (Government Gazette Extraordinary, 2005-04-11, Vol. L, No. 37, pp. 307-371) repealed and replaced the prior Mining Rights Act 1967.

The Mines and Minerals Act 2005 provides for administration of mineral exploration and exploitation; different types of licences and conditions for mineral exploitation such as prospecting licences for evaluation of a project; mining leases for exploitation of a mineral resource; and mineral permits for small-scale mineral development; environmental protection; finances and termination of mineral titles.

The Mines and Mineral (Amendment) Act 2022 legalises small-scale and artisanal mining and states that small-scaling mining operations may apply for a mineral permit to conduct such operations for any minerals over an area not exceeding 100 m^2, and is only available to local inhabitants.

4.6.6 Minerals and Mining Policy 2015

The Ministry of Mining spearheaded the development of the Minerals and Mining Policy 2015 ("Policy") aligned to the "Africa Mining Vision" which also operates within the scope of the country's Vision 2020 and the National Strategic Development Plan ("NSDP"), 2012/12 – 2026/17.

The Policy objectives of the Government for the mining sector are:

- To ensure that the mineral wealth contributes to the national and social development.
- To mitigate the adverse social and environmental impacts of mineral development.
- To ensure equitable access, transparency and public participation in the sustainable development of the mining sector.
- To stimulate investment in the mining sector.

Large scale diamond mining and artisanal and small-scale mining are the two sub-sectors covered in the Policy. The Policy requires consolidation of institutional arrangements for streamlining the compliance standards in health, safety and environmental management. In particular, the mining code and the NES will include regulatory procedures detailing the functional relationship and the NES and the Ministry of Mining covering environmental management in the mining sector.

In addition to the Policy measures, the Policy defines the roles of key players. The role of Government is two-fold:

a. to establish the rules, standards and guidelines on best practices in the mining sector.
b. to monitor, supervise and regulate compliance.

Holders of mining leases and permits have the primary role of demonstrating compliance with their licence obligations.

4.6.7 Minerals and Mining Bill 2017

The Minerals and Mining Bill 2017 has new sections on the establishment of a National Mining Corporation, Mining Authority, Inspectorate of Mines and Lesotho Diamond Centre. The Bill has changes and introduction of institutions which are not provided for in the Mines and Minerals Act 2005, including and not withstanding:

- Under the Bill the Mining Authority "shall be the chief regulator of the mining industry".
- Section 64: "The Government, through the National Mining Corporation, shall have the right to hold shares at the minimum of 25% and to have free carry interests in respect of those shares on any mineral mining venture, except in small-scale and artisanal mining ventures".

- "The actual percentage shall be agreed between the Government and the company".
- Section 65: "The following shall have the right, on top of grant of mineral rights, to sign a Mineral Development Agreement:
  a. Any company which wants to engage in extraction of mineral resources and holding minimum capital of one hundred million (100,000,000.00) Maloti or its equivalent in United States Dollars".
- Section 202: "A foreign mining company shall be encouraged to issue participating shares to local mining companies, as per the following conditions:

1. The local mining company shall hold participating shares of at least ten percent (10%).
2. It shall not be necessary that the percentage of shares indicated be made up of paid-up capital, although the paid-up capital shall be the basis for payment of dividends.
3. The National Mining Corporation established under this Act may provide capital guarantees to local companies that enter into participation arrangements in accordance with the provisions of this Act".

- The penalties being sought on mining companies that neglect their corporate social responsibility programs include:
  – "Every holder of mineral rights shall set aside 1% of the gross income for corporate social responsibility purposes".
  – Companies that fail "to implement corporate social responsibility obligations" shall be fined an equivalent of 50% of the amount which was to be remitted as part of its corporate social responsibility obligations plus the principal sum".
  – If a company repeats the offence "the Mining Authority shall forfeit the licence".
  – If a mining company fails to hire locals it will be fined the equivalent of 30% of the value of money that was to be paid to the local employees.
- Proposals being sought for hiring and employment include:
  – A mining company shall "prepare an employment plan indicating the managerial, technical and support positions which shall be filled by expatriates and those that will be filled by the people of Lesotho".
  – A mining company "must give preference to the people of Lesotho who possess the required managerial and technical qualifications for all managerial and technical functions."
  – Such company must "give employment only to the people of Lesotho for all support functions".
  – Companies must "draw and implement a systematic plan of on-job training and exposure to managerial skills for Basotho as part of a succession plan".
- A holder of mineral rights shall "procure products and equipment manufactured or produced in Lesotho from companies in Lesotho, and preference shall be given to companies in which people of Lesotho hold at least 20% of shares".

- The Lesotho Diamond Centre mandate will be to valuate diamonds, determine levies and taxes for export and import, be a platform for buying and selling, collect royalties and issue cutting and polishing licences.

4.7 Property Risks

The QP is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform work on the Property.

5 Accessibility, Climate, Physiography, Local Resources and Infrastructure

5.1 Accessibility

Letšeng is primarily accessed by road via South Africa from either Mokhotlong or Butha Buthe. The A1 main road is in reasonable condition and is mostly paved with the last 5 km from the turn-off to the mine being gravel. The nearest border crossing between South Africa and Lesotho is at Calendonspoort, approximately 10 km north of Butha Buthe.

The nearest towns to Letšeng are Mokhotlong, 70 km south, and Butha Buthe 104 km to the west. The closest village is Phuthalichaba, located 1.5 km from the southern property boundary.

International flights connect to Maseru, the capital city of Lesotho, which is located in the lowlands approximately 123 km by road from Butha Buthe. Helicopters can be used to reach Letšeng from Maseru international airport (Moshoeshoe Airport).

5.2 Climate

Temperatures in Lesotho vary widely from one geographical zone to another, and frequently within zones, depending on altitude. In the lowlands, temperatures reach 32°C or more in the summer and rarely fall below -7°C in the winter. The range in the highlands is greater, with temperatures averaging about 18°C and falling below -18°C. Frost and hail are frequent hazards.

At Letšeng the climatic conditions are generally temperate with very cold winters, measured by its on-site Weather Station. Annual temperatures range from a summer maximum of 22°C to a winter minimum of -22°C, that can be significantly lower due to wind chill.

Rainfall is mainly obtained from summer thunderstorms and is concentrated from October to April with a mean annual precipitation of 76 cm, varying from 191 cm in parts of the mountains to 60 cm in the lowlands. Droughts are common. At Letšeng there is a high percentage of rainwater lost, reporting as runoff due to low infiltration. Average annual snowfall is highly variable and mainly occurs in winter from May to September.

The Letšeng Mine operates year-round as the climatic conditions generally do not prevent mining operations. The weather can change rapidly throughout the year in the highlands, and during times of heavy rainfall or unusually heavy snowfalls temporary delays to operations may occur.

5.3 Physiography

Lesotho is reportedly the only country in the world with all its territory above 1,400 masl. Entirely surrounded by South Africa, Lesotho is landlocked and has an area of about 30,000 km^2. Letšeng is situated in the north of Lesotho at the highest point of the Maloti escarpment on the eastern rim of the

South African plateau, at an average elevation of 3,100 masl. The topography at Letšeng is steep (Figure 5-1).

Lesotho is divided into four agro-ecological zones: the lowlands (17%), the foothills (15%), the mountains (59%), and the Senqu River (Orange River) valley (9%) (Lesotho Meteorological Services, 2013).

Certain vegetation at Letšeng is unique as a result of the harsh climatic conditions. The local vegetation can be classified into montane, sub-alpine and alpine belts controlled by aspects of altitude and slope. The main vegetation types are grasses and occasional areas of indigenous woodlands and highland wetlands ("mires") with sponges. The high-altitude mires are specific to this area of Lesotho and can be indicative of kimberlite occurrences.

Source: SRK (2024)

Figure 5-1: Typical landscape in the Letšeng Mining Lease area

5.4 Local Resources and Infrastructure

5.4.1 Local Resources

The estimated 2023 population of Lesotho is 2.33 million persons (source: worldometers.info). About 99.7% of Lesotho's population identifies as Basotho. The main language is Sesotho and English is the other official language. About 69% of the population reportedly resides in rural areas with about 31% living in urban areas. Population density is lowest in the highlands.

Economic activities in Lesotho are largely confined to the lowlands, foothills and the river valley, while the mountainous regions are more ideal for grazing and water resource development, especially hydropower.

The majority of Letšeng personnel are Lesotho nationals (~99%) and the remainder (~1%) are expatriates from South Africa. Most of the unskilled labour force is sourced from Mokhotlong and the nearby village of Phuthalichaba. The operational site workforce including contractors numbered 1,160 personnel in December 2023.

Due to the mine’s relatively distant location from major towns, it is not practical for most workers to commute to work on a daily basis. As such, the Letšeng Mine is a camp operation with office-based employees working a nine-day on, five-day off rotation. The rest of the workforce work on a fourteen-day on, seven-day off rotation.

The Lesotho Mounted Police Service maintains a police station near Phuthalichaba village. There is a medical clinic and primary and secondary schools located 40 km south of Letšeng at Mapholaneng.

5.4.2 Infrastructure Summary

The major Letšeng infrastructure summarised below is identified in Figure 2.2 and described further in Section 18:

- Main Pipe and Satellite Pipe mine pits.
- Administration, operational and auxiliary support offices.
- Accommodation and kitchen – mess facilities.
- Hydrology and water management infrastructure comprising mine operational, processing and fresh-water dams and potable water.
- Electrical power sourced from Lesotho Energy Corporation, supplied to Lesotho from South Africa.
- Mining and drilling equipment owned and operated by Letšeng.
- Two Dense Media Separation (DMS) process plants, final recovery plant and offices owned by Letšeng and managed, operated and maintained by an external contractor (Section 17).
- Security services carried out by Letšeng over the mine site and within the process and recovery plants.

- Site access and perimeter control security services carried out by contractors.
- Residue storage facilities (RSF) and waste rock disposal dumps.
- Mine site roads.

6 History

The information in this section is summarised from Venmyn Rand (2012), the previous Technical Report on the Letšeng Mine with an effective date of 31 May 2012.

6.1 Prior Ownership and Ownership Changes

6.1.1 Letšeng Artisanal Mining Government Digging Declaration, 1959

Artisanal diamond miners have been reported operating in Lesotho since the 1950s. At Letšeng-la-Terae the Government of Lesotho declared Letšeng a “government digging” in 1959 (Bloomer and Nixon, 1973; Maleleka, 2007; Makhetha, 2016).

6.1.2 RTZ, 1968 to 1972

RTZ acquired an option over the Letšeng Property in mid-1968 and was the operator until 1972, conducting exploration and evaluation programs.

6.1.3 De Beers, 1972 to 1982

De Beers took out a one-year option on the Letšeng Property in 1972 and conducted resource development, mine development and mining of the Main and Satellite Pipes until May 1982.

6.1.4 Letšeng Diamonds, 1995 to 2002

Letšeng Diamonds (Pty) Ltd (Lesotho) (Letšeng Diamonds) was originally incorporated on the 1 November 1995 under the Companies Act no. 25 of 1967, Company Number 95/259. Letšeng Investment Holdings South Africa (Pty) Ltd (LIHSA) was registered to hold the investors’ share, 50% owned by New Mining Corporation Ltd (subsequently Matodzi Resources Ltd) and 50% owned by Letšeng Diamonds (Pty) Ltd (Guernsey).

6.1.5 Letšeng Diamonds: Consolidated African Mines Ltd, 2002 to 2006

Consolidated African Mines Ltd (CAM) acquired 40% interest in LIHSA from Letšeng Diamonds (Guernsey) in 2002, and carried out mine development and production until July 2006.

6.1.6 Letšeng Diamonds: Gem Diamonds, 2006 – Present

Gem Diamonds acquired 76% holding of Letšeng Diamonds on 1 July 2006 in a Sale of Shares Agreement with Letšeng Diamonds in joint venture with the Government of Lesotho, which was amended to 70% holding in 2007 (Section 4).

6.2 Letšeng Mine Historical Activities Overview, 1957 – 2006

Historical exploration, ownership, bulk sampling, development and mining that took place at Letšeng prior to its purchase by Gem Diamonds is summarised in Table 6-1 (after Venmyn Rand, 2012).

The Letšeng-la-Terae kimberlite pipes, the Main Pipe and the Satellite Pipe, were discovered in 1957 by Peter Nixon, a geologist from Leeds University conducting geological mapping (Nixon, 1973). The Main Pipe was partly exposed as a weathered outcrop in a stream draining the northeast corner of the pipe (Bloomer and Nixon, 1973).

Artisanal mining is reported taking place for ten years from 1958 to 1968 (Table 6-1). In 1959 the site was declared a Government Digging, and by 1967, there were up to 6,000 local diggers on the site (Nixon, 1973; Maleleka, 2007; Makhetha, 2016).

Ground geophysical surveys were carried out by International Geological Survey ("IGS") in 1967. Exploration and bulk sampling were undertaken by RTZ from 1968 through to 1972.

This was followed by resource development by De Beers over 1972 and 1973, mine development over 1974 to 1977, and mining of the Main and Satellite Pipes in two pits from 1977 to 1982.

Letšeng Diamonds (Pty) Ltd was registered in Lesotho in 1995. In 1999, a Mining Agreement was concluded and a Mining Lease covering the same area as the agreement was registered (Section 4).

A block model and pit optimisation exercise for the Satellite Pipe was produced in 2001.

Letšeng was reopened by CAM after they became major shareholder in 2002, and CAM developed and operated the Letšeng Mine from 2003 until 2006. Trial mining of Main Pipe eluvial material was carried over 2004 and 2005 by two contractors, Alluvial Ventures and Tlaeng Mining Pty Ltd ("Tlaeng"). Alluvial Ventures originally recovered and processed alluvial material from the Patising Valley under agreement with CAM in 2003.

Historical bulk sampling results are summarised in Table 6-2 and historical mining results are summarised in Table 6-3.

Table 6-1: Letšeng Mine history overview, 1957 to 2006

Year	Company	Historical Activities
1957	Leeds University	P.H. Nixon of the Institute of African Geology discovered the Main Pipe.
1958 - 1968	Artisanal miners	An estimated 6,000 artisanal miners treated approximately 1.0 – 1.5 Mt of alluvial material, overburden and weathered kimberlite from the Main and Satellite Pipes, recording recovery of 62,070 cts. Occasional, large high-quality diamonds were recovered, notably a 527 carat stone in 1965 and the 601 carat “Lesotho Brown” in 1967.
1967	International Geological Survey	Geophysical surveys were carried out that outlined the Main and Satellite pipes.
1968 - 1972	RTZ	RTZ mapped and core drilled 2,100 m in the Main and Satellite Pipes. Bulk sampling of over 80,000 t of kimberlite from the Main Pipe (“K6 facies”, surface and underground) and from the Satellite Pipe (surface) confirmed the presence of occasional “large” diamonds in both pipes. RTZ assessed that Letšeng was not feasible and abandoned its option.
1972 - 1973	De Beers	De Beers collected a 30,000 t underground bulk sample from the Satellite Pipe.
1974 - 1977	De Beers	De Beers investment in the Letšeng Mine developed the Main Pipe “K6 facies”. Capital expenditure was reportedly ~US$ 36 M.
1977	De Beers	First production was achieved from open pit mining of the Main Pipe “K6 facies”, with stockpiling of low-grade “K1/KOther facies”.
1978 - 1979	De Beers	Mining of the Main Pipe continued. Satellite Pipe was surface bulk sampled, total two samples for ~ 150,000 t.
1979	De Beers	Mining of the Satellite Pipe commenced.
1979 - 1982	De Beers	Main Pipe “K6 facies” open pit was mined to 120 m depth and Satellite Pipe was open pit mined to ~30 m depth for a total of ~9.1 Mt treated (~0.86 Mt from Satellite Pipe); 272,840 cts recovered; diamond sales valued at US$ 109 M, US$ 402/carat (1982 pricings).
1982	De Beers	De Beers ceased mining in May 1982 as the operation was deemed unviable.
1995	Letšeng Diamonds (Pty) Ltd (Lesotho)	Company registered in Lesotho.
	Letšeng Investment Holdings South Africa (Pty) Ltd (LIHSA).	South African company registered to hold Letšeng Diamonds investors share.
1999	Letšeng Diamonds	Mining Lease and Agreement applications approved.
2001	Letšeng Diamonds	Satellite Pipe block modelling and pit optimisation carried out.
2002	Consolidated African Mines Ltd	CAM acquired 40% interest in Letšeng Diamonds. Venmyn Rand prepared a Competent Persons report.
2003	Letšeng Diamonds	Development of the Letšeng Mine recommenced.
		Alluvial Ventures commenced processing of alluvial material.
2004		Mine production commenced with treatment through Plant 1.
		Alluvial Ventures commenced processing of Main Pipe eluvial material and De Beers and Main Pipe Stockpile material.
2005 - 2006	Geomechanics cc	Main and Satellite Pipes geology definition drilling program carried out to determine occurrence of kimberlite at depth.
2006	Venmyn Rand	Competent Persons Report prepared for sale of Letšeng Diamonds.

Source: after Venmyn Rand (2012)

Table 6-2: Letšeng Mine historical bulk sampling summary, 1968 to 2004

Resource	Company	Year	Type	Rock Type ("Facies")	Tonnes	Carats	Average Grade (cpht)	Effective Screen Cut-off (mm)
Main Pipe	RTZ	1968 - 1972	Underground sampling	K6	10,177	441	4.33	1
				K1	48,162	1,059	2.20	
			Surface sampling	K6	7,531	382	5.07	
				K1	2,514	48	1.91	
		Total / Average RTZ			**68,384**	**1,930**	**2.82**	
	De Beers	1980	Pitwall sampling	K1	52,838	1,217	2.30	2
		Total / Average De Beers			**52,838**	1,217	2.30	
	Total / Average Main Pipe				**121,222**	**3,147**	**2.60**	**-**
Satellite Pipe	RTZ	1968 - 1972	Surface sampling	N/A	12,185	471	3.87	1
		Total / Average RTZ			**12,185**	**471**	**3.87**	
	De Beers	1973	Underground sampling	N/A	29,845	827	2.77	2
		1978 - 1979	Surface Sampling	N/A	52,235	1,864	3.57	
		1978 - 1989		N/A	100,000	2,914	2.91	
		Total / Average De Beers			**182,080**	**5,605**	**3.08**	
	Total / Average Satellite Pipe				**194,265**	**6,076**	**3.13**	**-**
De Beers Stockpile	De Beers	1982	Stockpile	N/A	94,500	1,455	1.54	2
		Total / Average De Beers			**94,500**	**1,455**	1.54	
	Letšeng	2004	Stockpile	N/A	60,364	1,163	1.93	
		Total / Average Letšeng			**60,364**	1,163	1.93	
	Total / Average De Beers Stockpile				**154,864**	**2,618**	**1.69**	**2**

Source: Venmyn Rand (2012)

Table 6-3: Letšeng Mine historical production summary, 1977 to 2006

Resource	Company	Year	Method	Rock Type (“Facies”)	Tonnes	Carats	Average Grade (cpht)	Minimum Screen Size (mm)
Main Pipe	De Beers	1977	Open pit mining	K6	680,000	22,688	3.34	2
		1978			1,367,000	47,187	3.45	
		1979			997,000	32,711	3.28	
		1980			1,415,310	40,314	2.85	
		1981			1,700,100	47,632	2.80	
		1982			448,900	12,659	2.82	
	Total / Average De Beers				**6,608,310**	**203,191**	**3.07**	**2**
	Letšeng	2004 - 2005	Open pit mining by Alluvial Ventures	K1	87,238	1,313	1.5	3
			Open pit mining by Tlaeng		12,268	243	1.98	1.3
	Total / Average Letšeng				**99,505**	**1,555**	**1.56**	**-**
	Total / Average Main Pipe				**6,707,815**	**204,746**	**3.05**	**-**
Satellite Pipe	De Beers	1979	Open pit mining	N/A	600,000	16,800	2.8	2
		1980			437,690	12,255	2.8	
		1981			188,900	5,289	2.8	
		1982			886,600	25,000	2.82	
	Total / Average De Beers				**2,113,190**	**59,344**	**2.81**	**2**
	Letšeng	2004 - 2005	Open pit mining Satellite only, pre-plant modification	N/A	440,326	10,019	2.28	2
			Open pit mining and De Beers Stockpile, pre-plant modification		996,229	23,010	2.31	
		2006	Open pit mining Satellite only, post-plant modification		284,787	5,986	2.10	
			Open pit mining and De Beers Stockpile, post-plant modification		1,960,610	37,861	1.93	
	Total / Average Letšeng				**3,681,952**	**76,876**	**2.09**	**2**
	Total / Average Satellite Pipe				**5,795,142**	**136,220**	**2.35**	**2**
De Beers Stockpile	Letšeng	2004	Open pit mined Satellite and Stockpile	N/A	141,692	2,234	1.58	2
		2004 - 2006	Open pit mined Stockpile, post-plant modification		1,131,248	17,874	1.58	
Total / Average Letšeng					**1,272,940**	**20,108**	**1.58**	**2**
Total / Average De Beers Stockpile					**1,272,940**	**20,108**	**1.58**	**2**

Source: Venmyn Rand (2012)

6.3 International Geological Survey Ground Geophysical Surveys, 1967

A series of ground gravity, magnetic and electrical surveys was carried out by IGS in 1967 to delineate the Main and Satellite Pipes, which indicated the Satellite Pipe extended at depth to the west.

6.4 RTZ Exploration and Bulk Sampling, 1968 to 1972

6.4.1 RTZ Exploration Activities Overview

RTZ commenced exploration at Letšeng in 1968 following the geophysical exploration program carried out by IGS in 1967, with the aim of producing a Feasibility Study. RTZ surveyed and mapped the Main and Satellite Pipes and conducted core drilling and underground and surface bulk sampling programs through to 1972. Venmyn Rand (2012) stated there has been no independent verification of these results.

6.4.2 Main and Satellite Pipes Core Drilling

RTZ drilled ten core holes totaling 2,100 m delineating the Main and Satellite Pipes (Figure 6-1).

6.4.3 Main and Satellite Pipes Bulk Sampling

RTZ first bulk sampled the Main Pipe by driving underground tunnels (Figure 6-1, Table 6-2). Surface bulk sampling of the Main Pipe commenced in 1971, employing trenching above the underground drives.

The Satellite Pipe was also bulk sampled by surface trenching (Table 6-2).

6.4.4 RTZ Relinquishment of Letšeng Option

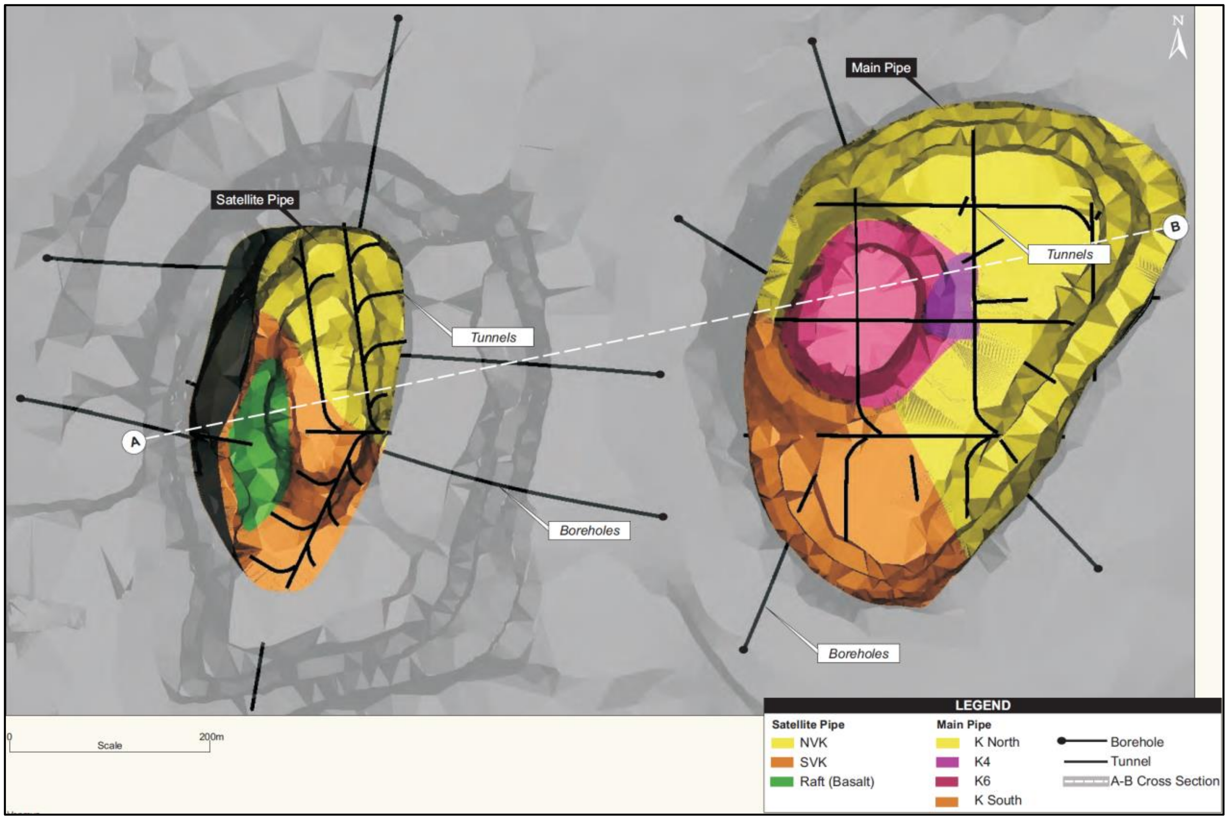
RTZ employed a single, independent diamond valuator, who was apparently required to purchase the diamonds at the valuation price when required by RTZ.

RTZ decided to cease exploration and development of the Letšeng Project in 1972 as a result of the single, independent valuation of the bulk samples that was assumed to render the project uneconomic, and RTZ relinquished its option in Letšeng.

6.4.5 Government of Lesotho Independent RTZ Bulk Sample Valuations

Reportedly, the RTZ single, independent valuation of the Main and Satellite Pipe bulk samples was subsequently found to be incorrect. After RTZ relinquished its option in Letšeng, the Government of Lesotho was required to carry out two further diamond valuations for tax purposes. The RTZ valuation would have been accepted if the other two valuations were within 15%. The additional two valuations, and other subsequent valuations, proved to be more than double that of the RTZ independent valuator.

RTZ attempted to renew its option but was unsuccessful.



Source: Venmyn Rand (2012)

Figure 6-1: Letšeng Diamond Project plan view of historical bulk sampling and drilling by RTZ (1968 – 1972) and De Beers (1972 – 1979)

6.5 De Beers Development and Mining, 1972 – 1982

6.5.1 Resource Development, 1972 to 1980

In 1972 De Beers commenced resource development at Letšeng, and in 1973 underground bulk sampling of the Satellite Pipe was completed (Figure 6-1, Table 6-2).

Surface bulk sampling of the Satellite Pipe was carried out over 1978 and 1979 (Figure 6-1, Table 6-2). “Pitwall” bulk sampling of the Main Pipe was carried out in 1980 (Table 6-2).

6.5.2 Mine Development, 1974 to 1979

In 1974, De Beers commenced construction of the Letšeng Mine, developing the Main Pipe “K6 facies” for production. The initial capital outlay was reportedly US$ 36M (Venmyn Rand, 2012).

6.5.3 Mining, 1977 to 1982

Venmyn Rand (2012) reported that production from the Main Pipe "K6 facies" commenced in 1977 and mining of the Satellite Pipe commenced in 1979. Production results to May 1982 are summarised in Table 6-3. The bottom cut-off (BCO) at the process plant was reportedly 2.0 mm.

The grade of the "K6 facies" kimberlite was reported to have decreased with depth, from a quoted 3.34 cpht in the first year of production in 1977 to 2.82 cpht at a depth of 120 m in 1982 in year six of production. The decrease in "K6 facies" grade with depth was attributed to poor liberation of small diamonds from harder kimberlite. The quoted grades were also affected by processing of ore blended from the Satellite Pipe. In comparison, the RTZ "K6 facies" underground bulk sample grades were slightly higher (Table 6-2), and it was considered that this was a function of the lower 1.0 mm BCO used in processing of the RTZ bulk samples.

Mining of the "K6 facies" zone was planned to a depth of 140 m and was stopped at 120 m due to intersection of supposed low-grade "K4 facies" within the "K6 facies" zone. Reportedly, the stripping ratio below 120 m became unpayable, under the prevailing slump in the diamond market during 1981 and 1982. Concurrently, mining of the Satellite Pipe was ceased due to depletion of soft, more easily mined kimberlite.

De Beers ceased mining in May 1982 and dismantled certain infrastructure. The main reasons cited for closure of De Beers operations at Letšeng were:

- A poor diamond market and low diamond prices.
- High operating costs.
- Government diamond taxes were becoming prohibitive in light of weak diamond prices.
- Prevention by the Government of Lesotho of De Beers to either reduce production to a selected quota or place the entire operation on care and maintenance.

"Non-K6 facies" kimberlite recovered from mining of the Main Pipe was considered as low grade and was stockpiled, referred to as the De Beers Stockpile (Venmyn Rand, 2012). The stockpiled material was predominantly comprised of "K1/KOther facies" and minor low-grade "K4 facies" kimberlite (Venmyn Rand, 2012).

6.6 Letšeng Diamonds Satellite Pipe Block Modelling and Pit Optimisation, 2001

Venmyn Rand (2012) reported that Letšeng Diamonds obtained the RTZ exploration data from the Lesotho Department of Mines in Maseru and obtained development and mining information from De Beers.

Letšeng Diamonds contracted Datamine South Africa (Pty) Ltd (Datamine) in 2001 to produce a block model and pit optimisation exercise for the Satellite Pipe, to identify the economic pit bottom using historical information at the mining and processing costs at that time (Venmyn Rand, 2012). The economic pit shell was determined to be 390 m below surface at an average stripping ratio of 2.37.

6.7 Letšeng Diamonds: Consolidated African Mines Ltd, Development and Mining 2002 to 2006

6.7.1 Acquisition, Mine Site and Satellite Pipe Mine Plan Development, 2002 to 2003

Following CAM obtaining major shareholding of Letšeng Diamonds in 2002, the Letšeng Mine was redeveloped in 2003. A 350 tph Dense Media Separation (DMS) process plant (Plant 1) and final recovery plant were constructed.

Letšeng Diamonds contracted MineNet in 2003 to produce a mine plan for the Satellite Pipe, using the existing digital terrain model, 3D geology model and Datamine block model, employing MineSight Application (Pty) Ltd (MineSight) modelling software. The initial December 2003 pit optimisation exercise produced an economic pit shell at a depth of 260 m below surface at an overall stripping ratio of 1.07 (Venmyn Rand, 2012).

6.7.2 Satellite Pipe Mining and De Beers Stockpile Production, 2004 to 2006

Letšeng Diamonds commenced mining in April 2004 with production from the Satellite Pipe supplemented with feed from the De Beers Stockpile (Table 6-3), that was bulk sampled in 2004 (Table 6-2). The pre-existing De Beers Satellite Pipe pit was dewatered and approximately 3.68 Mt was reported processed from the Satellite Pipe by 2006 (Table 6-3). The De Beers Stockpile material processed was approximately 1.27 Mt (Table 6-3), considered to be comprised of kimberlite from the Main Pipe: “K North and K South” and “K4 facies” (Venmyn Rand, 2012).

Reconciliation of recovery grades from the different Satellite and Main Pipe kimberlite “facies” was problematic due to their mixing in processing. Venmyn Rand (2012) stated that only c. 0.4 Mt of discrete Satellite Pipe material was processed for grade estimation and reporting in the 2006 Mineral Resource Statement (Section 6.9).

6.7.3 De Beers Stockpile Bulk Sampling, 2004

Venmyn Rand (2012) reported that Letšeng Diamonds collected a discrete 63,634 t bulk sample from the De Beers Stockpile in 2004 to determine its average grade Table 6-2).

It should be noted that approximately 1.27 Mt of material was reported processed from the De Beers Stockpile mixed with Satellite Pipe material, and the De Beers Stockpile bulk sample grade estimate was used as means to back calculate the grade estimate of the Satellite Pipe.

6.7.4 Main Pipe Trial Mining, 2004 to 2005 with Alluvial Ventures and Tlaeng

Venmyn Rand (2012) reported that trial mining of Main Pipe “K1 facies” eluvial material was carried out over 2004 to 2005 by Alluvial Ventures and Tlaeng, under agreement with CAM in 2003.

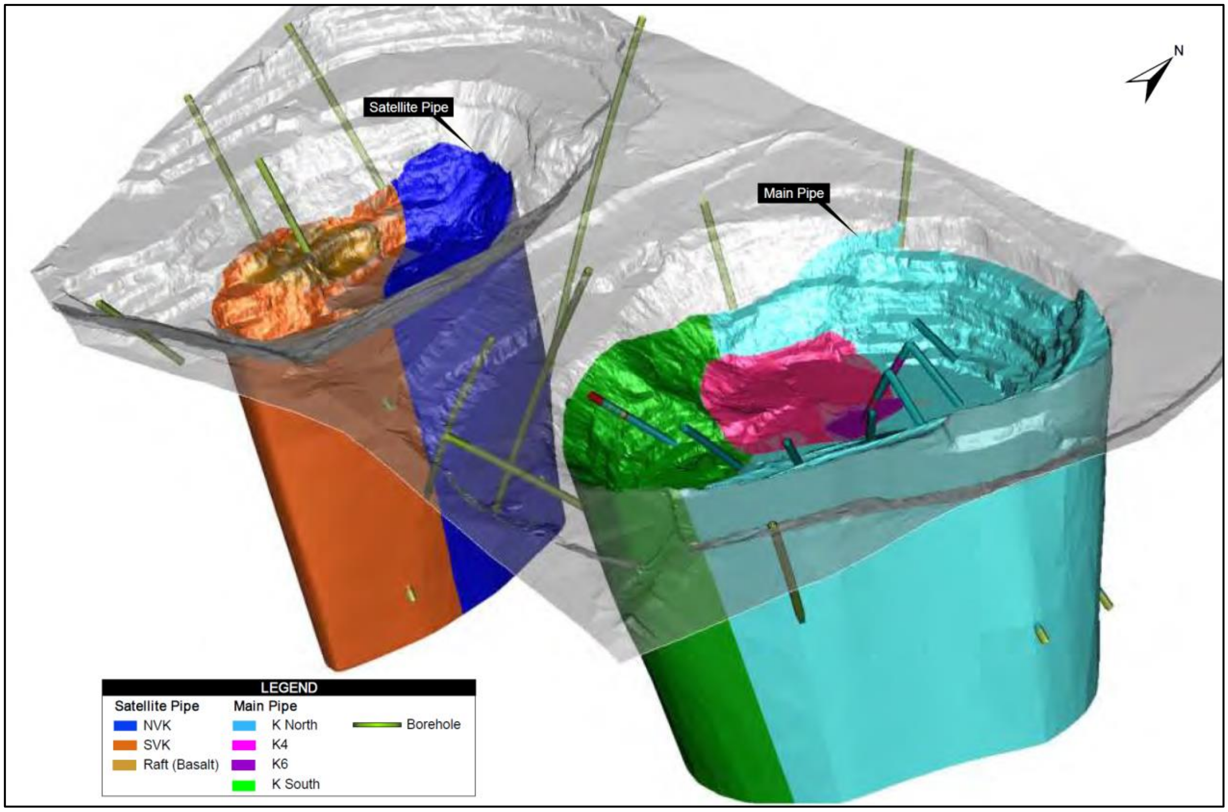
The “K North and K South facies” were tested for reporting grade in the 2006 Resource Statement. About 0.1 Mt of weathered material was reported excavated from trenches cut above the water line, that was processed through Alluvial Venture’s Pan Plants:

- 99,505 t; 1,555 cts; 1.56 cpht (Table 6-3).

The trenching was considered reliable by Venmyn Rand (2012), being stated as being closely monitored by Letšeng with trench volumes surveyed by the mine surveyor.

6.7.5 Main and Satellite Pipes Deep Delineation Core Drilling Program, 2005 to 2006

Letšeng Diamonds contracted Geomechanics cc (Geomechanics) over 2005 and 2006 for geology delineation core drilling of the Main and Satellite Pipes to establish their continuity at depth and volume model updates, that was used in reporting the 2006 Mineral Resource Statement. A total of 20 holes for 8,534 m was completed (Figure 6-2 and Section 6.9).



Source: Venmyn Rand (2012)

Figure 6-2: Letšeng Diamonds Project 2009 3D geology models of the Main and Satellite Pipes showing 2005 – 2006 core holes drilled

6.7.6 Main and Satellite Pipes Geology Modelling, 2005 to 2006

Letšeng Diamonds contracted MineNet in January 2005 to produce a 3D “facies” model of the Main Pipe using MineSight software. All available historical surface and underground plans were digitised and were the basis of the 2005 and 2006 geology models. Different coordinate systems historically used by the previous operators resulted in a coordinate rotation discrepancy, and a correction factor was applied to align the coordinates as accurately as possible (Venmyn Rand, 2012). The adjusted coordinates were converted into the 2005 and 2006 coordinate system employed by Letšeng Diamonds. Wireframes were created for the “K6, K4, K North and K South facies” and historically measured contact angles were used to project the Main Pipe downwards.

In 2006, new Main and Satellite Pipe geology models updated with all the 2005 – 2006 core drilling and in-pit mapping data were produced by MineNet using Micromine modelling software. These models were used for the 2006 Mineral Resource Statement volume calculations (Section 6.9).

In addition, Venmyn Rand (2012) reported that geotechnical mapping and sampling of the Satellite Pipe open pit was carried out.

6.7.7 Block Modelling and Pit Optimisation Exercises, 2005 and 2006

In May 2005, MineNet carried out an initial pit optimisation exercise for the Main Pipe using the 2005 geology model, that produced an economic pit shell to 427 m below surface (Venmyn Rand, 2012). A second pit optimisation exercise was completed in June 2005, that assessed the impact of doubling the production rate with modified diamond values and exchange rates. This resulted in deepening the Main Pipe pit shell to 560 m below surface.

In June 2005, MineNet carried out an economic pit shell sensitivity analysis for the Satellite Pipe using the 2005 geology model against mining cost; Maloti: US$ exchange rate and diamond prices (Venmyn Rand, 2012). This produced a base case economic pit shell at a depth of 439 m and stripping ratio of 2.34.

Pit optimisation and mine scheduling exercises were subsequently completed in June 2006 for the 2006 Mineral Resource Statement using the 2006 geology models (Venmyn Rand, 2012).

6.7.8 Density Modelling, 2005

Averaged kimberlite “facies” densities obtained during processing and from drill core verification samples were used for calculating tonnages for the 2006 Mineral Resource Statement (Venmyn Rand, 2012).

There is no record of dry density measurements.

6.8 Alluvial Ventures, 2003 to 2005

Venmyn Rand (2012) reported that Alluvial Ventures, a mining and processing contractor, originally operated under a mining and processing agreement with Letšeng and CAM from 2003 to 2005, independently mining and processing overburden (alluvial or eluvial material) from the Patising Valley and tailings within certain specified portions of the Production Area. Trial mining of Main Pipe “K1 facies” eluvial material was carried out over 2004 and 2005 by two contractors, Alluvial Ventures and Tlaeng.

Alluvial Ventures operated under a mining and processing agreement with Letšeng and Gem Diamonds from 2005 to 2022 (refer to Section 4). Alluvial Ventures treated a mix of Main Pit and “low-grade” material at a target production rate of 90,000 tonnes per month. It is important to note is that the Alluvial Ventures production data was not included in datasets informing the resource estimates.

6.9 Historical Mineral Resource and Reserve Estimates

Prior to the purchase of Letšeng Diamonds by Gem Diamonds, Venmyn (2006, in Venmyn Rand, 2012) produced a Mineral Resource Statement inclusive of Reserves in accordance with SAMREC guidelines with an effective date of 31 March 2006 (Table 6-4). The QP has not done any work to classify the historical estimate as current mineral resources and Gem Diamonds is not treating the historical estimate as current mineral resources. The current mineral resource statement for Letšeng is presented in Section 14.

Table 6-4: Letšeng Mine summary Mineral Resource statement as at 31 March 2006 (Inclusive of Reserves) (Venmyn 2006 in Venmyn Rand, 2012)

Resource	Depth From (m)	Depth To (m)	Classification	Volume (m^3)	SG (kg/m^3)	Tonnes (Mt)	Recovered Grade (cpht)	Carats	Value (US$/ct)	Bottom Cut Off (mm)[1.]
Satellite Pipe	0	182	Indicated	5,698,322	2.58	14.701	1.93	283,000	$1,456	2
Main Pipe	0	190		16,676,370	2.61	43.525	1.64	713,000	$974	2
Stockpile	N/A	N/A		1,664,111	2.03	3.373	1.58	53,000	$974	2
Total / Average Indicated				**24,038,803**	**2.56**	**61.599**	**1.70**	**1,049,000**	**$1,104**	**2**
Satellite Pipe	182	475	Inferred	12,234,810	2.58	31.565	1.93	609,000	$1,456	2
Main Pipe	190	490		23,607, 254	2.61	61.614	1.64	1,010,000	$974	2
Total / Average Inferred				**35,842,064**	**2.6**	**93.179**	**1.74**	**1,619,000**	**$1,155**	**2**

[1] Recovered grades quoted taking into account modified re-crush 22 mm screen size.

Venmyn Rand (2012) stated that the 2006 Resource Statement accounted for all drilling and geotechnical results; core densities; the 2006 geology models and pit optimisation and mine scheduling exercises; latest diamond sales prices; and an updated geostatistical estimate of expected diamond prices and production data, at that time. Recovered grades were quoted taking into account the modified re-crush screen size (22 mm screen aperture width).

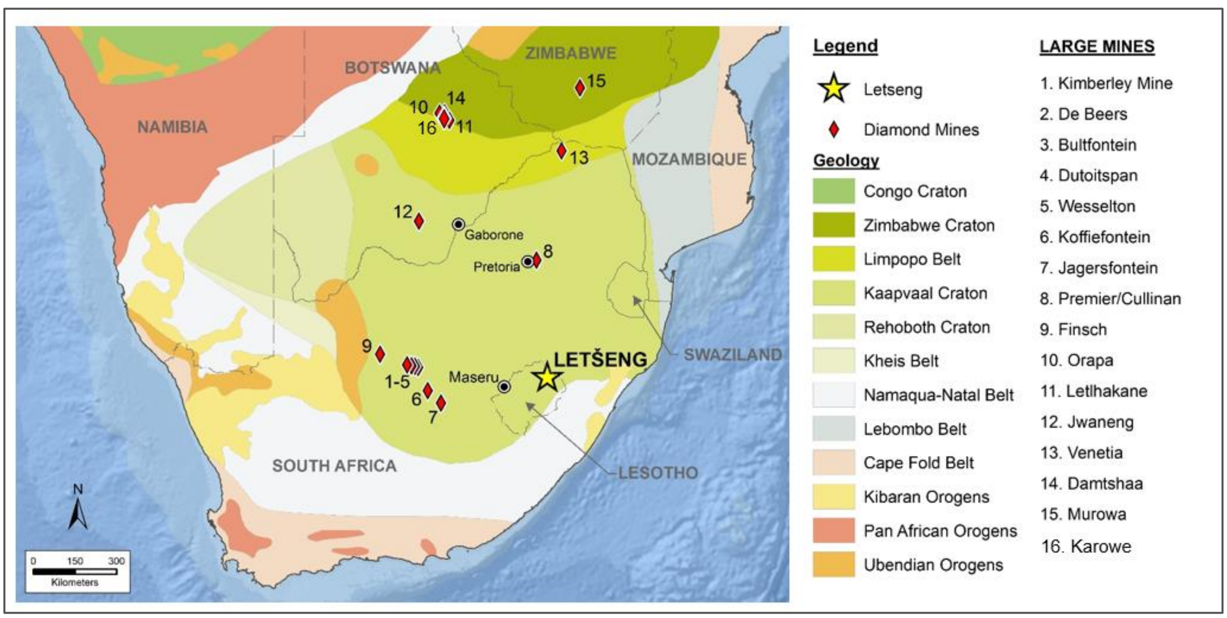
Venmyn Rand (2012) considered the 2006 Resource Statement to be reliable, being independently prepared by Venmyn using the most recent exploration, bulk sampling and production results. The grade of the Main Pipe “K6 facies” kimberlite was not estimated and was reported as adjusted to align with the process plant results. Venmyn Rand (2012) maintained that the results were more reliable, being based on production rather than sampling data.

7 Geological Setting and Mineralisation

Letšeng Diamond Mine differs from other diamond mines in southern Africa as it occurs near the margin of the Archean Kaapvaal Craton and produces some of the largest and most valuable diamonds from the lowest-grade primary diamond deposit currently mined in the world.

7.1 Regional Geology

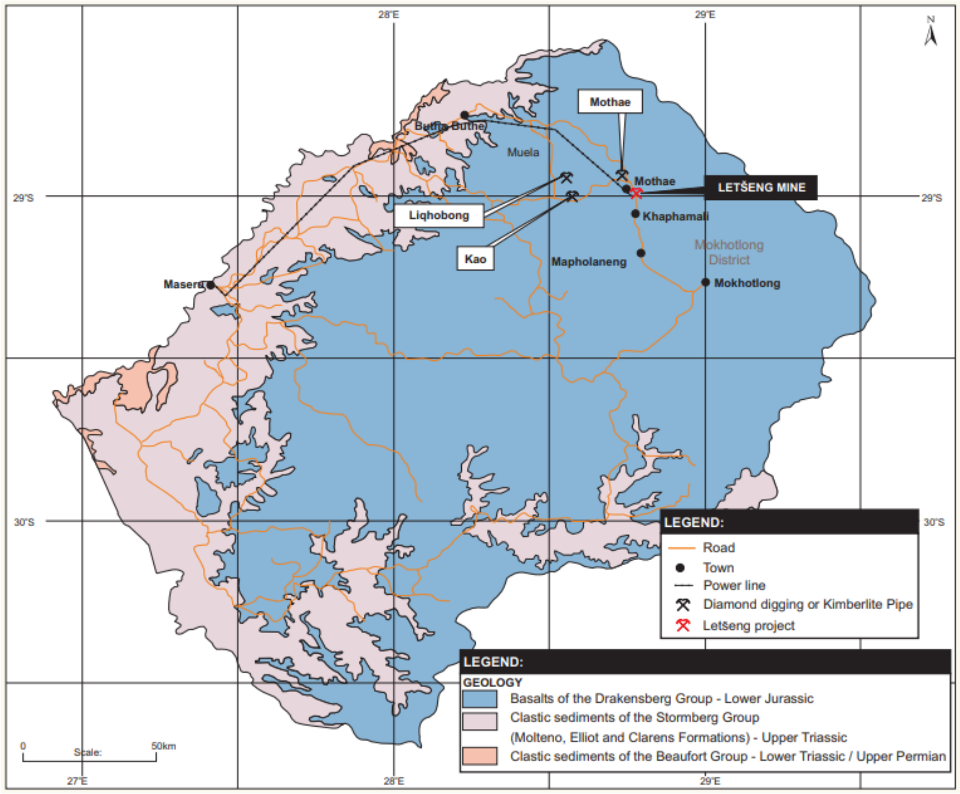
Letšeng is situated some 3100 m above sea level in the Maloti Mountains of Lesotho in southern Africa (Bloomer and Nixon,1973; Figure 4-1). The Letšeng kimberlites intruded close to the eastern edge of the Kaapvaal Craton (Figure 4-1) and are preserved in Jurassic-age (ca. 184 Ma) basalts of the Lesotho Formation, Drakensberg Group (Antoine et al., 2022). Following the break-up of the Gondwana super continent in the Late Jurassic to Early Cretaceous times, the Kaapvaal Craton was subject to numerous intrusions by kimberlitic material in two main phases: Early Cretaceous (ca 108 Ma – 150 Ma) and Late Cretaceous (ca 85 Ma – 95 Ma). The Main and Satellite pipes and associated dykes at Letšeng are part of the Late Cretaceous (ca. 90 Ma) Group 1 kimberlite occurrences comprising the Lesotho Kimberlite Province that is affiliated to the Kimberley and Gordonia Kimberlite Provinces of South Africa (Skinner and Truswell, 2006, in Bowen et al., 2009).



Source: SRK (2024)

Figure 7-1: Location of Letšeng on the edge of the Kaapvaal Craton

The regional geology of the northern highlands of Lesotho consists of (1) upper Karoo Supergroup sedimentary rocks (Molteno and Clarens Formations of the Stormberg Group) and (2) overlying Drakensberg Group (Lesotho Formation) basalts (Figure 7-2). Both the Karoo sediments and the Drakensberg basalts are intruded by dolerite (diabase) dykes and sills. The base of the basalt sequence lies at approximately 1,600 masl, approximately 1,500 m below the present erosion level at Letšeng.



Source: Venmyn Rand (2011)

Figure 7-2: Regional geology of Lesotho

The Karoo Supergroup is Early Permian to Early Jurassic in age (300-180 Ma) and consists of the stratigraphy shown in Figure 7-3 (Catuneanu et al., 2005) and summarised in Table 7-1 (Robey, 2017).

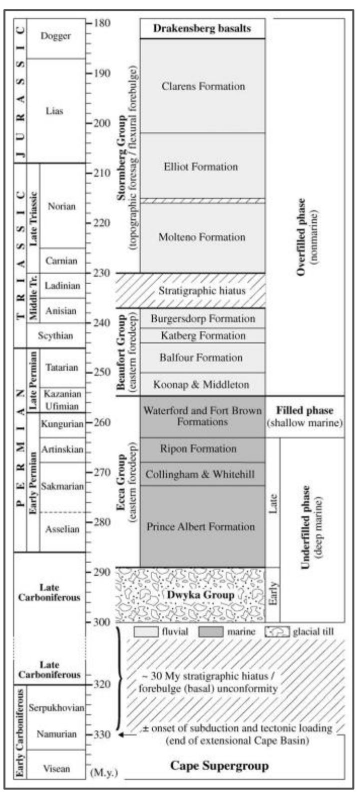
Table 7-1: Karoo Supergroup lithostratigraphic subdivisions in Lesotho

Group	Formation	Lithology	Thickness (m)
Drakensberg	Lesotho	Basalts	<1,500
Stormberg	Clarens	Aeolian and fluvial sandstones	130-140
	Elliot	Reddish-coloured shales and mudstones with some major sandstone intercalations	65-70
	Molteno	Sandstone	<50
Beaufort		Purplish-coloured mudstones and white sandstones	35-40
Ecca		Black shales	<3,000
Dwkya		Glacially deposited tillites and black shales	<1-800

Source: SRK (2024) after Robey (2017)

The Lesotho Formation basalts are a Drakensberg Group member and erupted within ~1 million years at 184.4 Ma (Antoine et al., 2022). The basalts are low-Ti and high-Al tholeiites and form the dominant crustal xenolith type within the Letšeng pipes (Section 7.3). The Lesotho Formation basalts form a pile at least 1,500 m thick. Besides a more chemically diverse and restricted basal unit, the main pile of basalts is chemically fairly monotonous, with only subtle variations in trace elements that can be used in subdivision.

There is a lot of uncertainty about the basement through which the Letšeng kimberlites intruded but it is said to be gneissic and Archaean in age. Some indication is offered by the deep crustal xenoliths sampled by the Letšeng kimberlites. Lock (1980) reviewed these deep crustal xenoliths. They range from biotite gneisses to amphibolites and to relatively abundant granulites varying from basic to acid types, with garnet being a common mineral. Lock (1980) concentrated on the granulites and found them to be composed mainly of the minerals garnet, clinopyroxene and plagioclase with or without accessory quartz, biotite, amphibole, rutile, ilmenite and kyanite. A kyanite graphite assemblage was also observed (per D. Bowen). Pressure/Temperature (PT) calculations on the granulites suggest metamorphic conditions of 600-750°C at 3-8 Kb. Of interest is that the garnet granulites at Letšeng are similar to those in kimberlites penetrating the Namaqualand Metamorphic Complex (NMC) and in fact dates have been found at Letšeng that are Namaqua in age (1200 my). This suggests that the NMC was in part overthrust onto the Achaean basement beneath Letšeng (Robey, 2017).



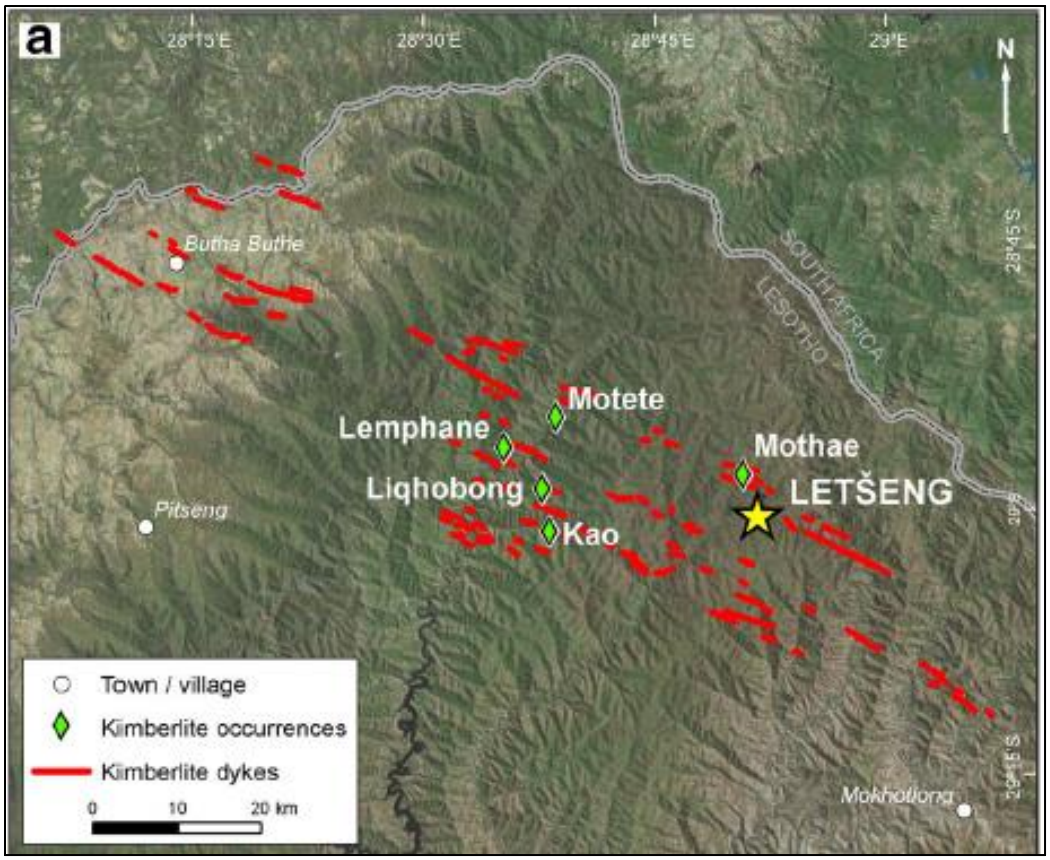
Source: Catuneanu et al., (2005)

Figure 7-3: Stratigraphy of the Karoo Supergroup

7.2 Local Geology

The northern Lesotho region has kimberlite intrusions with both pipe and dyke (sheet) morphologies. The kimberlites in the region are often found in groups with one large "main" intrusion and one or more smaller "satellite" intrusions, as seen at Letšeng. The Main and Satellite pipes and associated dykes at Letšeng form part of the northwest-southeast trending Lemphane - Robert kimberlite belt (e.g., Rapopo, 2017; Ward, Bowen and Fourie, 2017) in which the kimberlite pipes are associated with an extensive kimberlite dyke swarm (Figure 7-4). Pipes are found at Mothae, Kao and Liqhobong (Section 23). Dykes can have blows where they become wider. Many dykes are diamondiferous but none has proven to be economical.

All of the kimberlites are hosted within the Lesotho Formation basalts as described above. There are no outcrops of Karoo sediments or basement rocks in the area. The kimberlites have undergone much less erosion than kimberlite pipes in other areas of southern Africa (Section 7.3).



Source: Hetman et al. (2018)

Figure 7-4: Kimberlite occurrences in the region surrounding Letšeng

7.3 Letšeng Kimberlites – General Geology, Age and Origin

The Letšeng kimberlites are primary diamond deposits. There are two adjacent pipes named Main Pipe and Satellite Pipe with surface areas of 15.05 ha and 4.36 ha at mining levels on 31 December 2023 (Figure 7-5). The pipes are age dated at ca.90 Ma (Stanley et al., 2015) and were emplaced into the ~1,500 m thick pile of Lesotho Formation basalts (Section 7.1).

Letšeng has undergone much less erosion than kimberlite pipes in other areas of southern Africa because of its location in the Lesotho Highlands at ~3,100 masl (Stanley et al., 2015). The estimated level of erosion at Letšeng is 400-600 m (Hetman et al., 2018). Basalt is the dominant crustal xenolith type within the Letšeng pipes, ranging from less than a centimetre to large rafts tens of metres in size (megaxenoliths[1]). The basalts are underlain by sandstones and siltstones of the Clarens Formation; xenoliths of these rocks are present in the Letšeng kimberlites but are small and most easily identified petrographically. Basement xenoliths occur in both pipes with garnet granulite being notably common in some units.

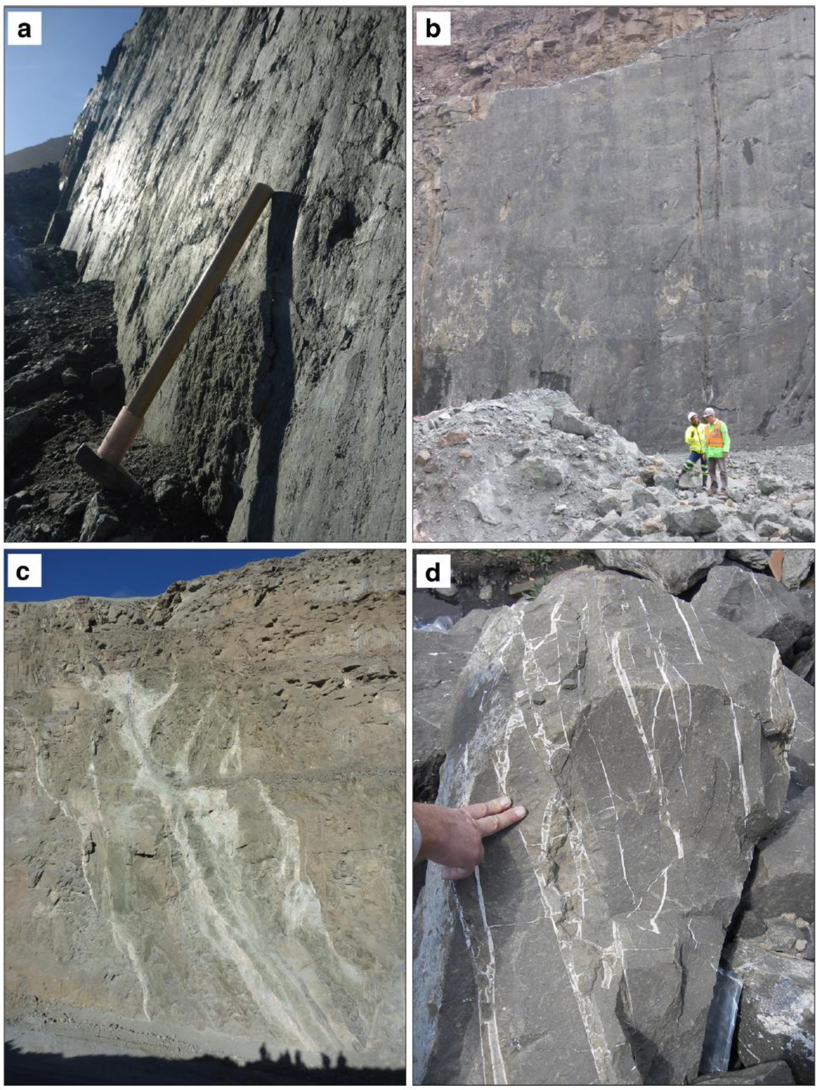
Source: Google Earth (2024)

Note: Aerial photograph of Letšeng Mine in 2024 showing the Main and Satellite open pits. At current mining level the dimensions are: Main Pipe 15.05 ha surface area, 525 m x 360 m, 290 m deep open pit; Satellite Pipe 4.36 ha surface area, 300 m x 180 m, 380 m deep open pit

Figure 7-5: Main Pipe and Satellite Pipe open pits at Letšeng Mine

[1] Kimberlite terminology and component size and abundance descriptors are from Scott Smith et al. (2017, 2018).

The Main and Satellite kimberlites are vertical, steep-sided and carrot-shaped volcanic pipes. The pipe contacts (kimberlite-basalt) are smooth and striated (Figure 7-6). Brecciated basalt country rock (some carbonate-cemented) occurs locally adjacent to the pipe contacts but these 'marginal breccias' are less common than in other KPK-infilled pipes especially those hosted in granitoid country rock. Both pipes contain megaxenoliths of these brecciated basalts (derived from wall rock during pipe formation), as well as megaxenoliths of basalt breccias with variable amounts of kimberlite within them (see below).



Source: Hetman et al., 2018

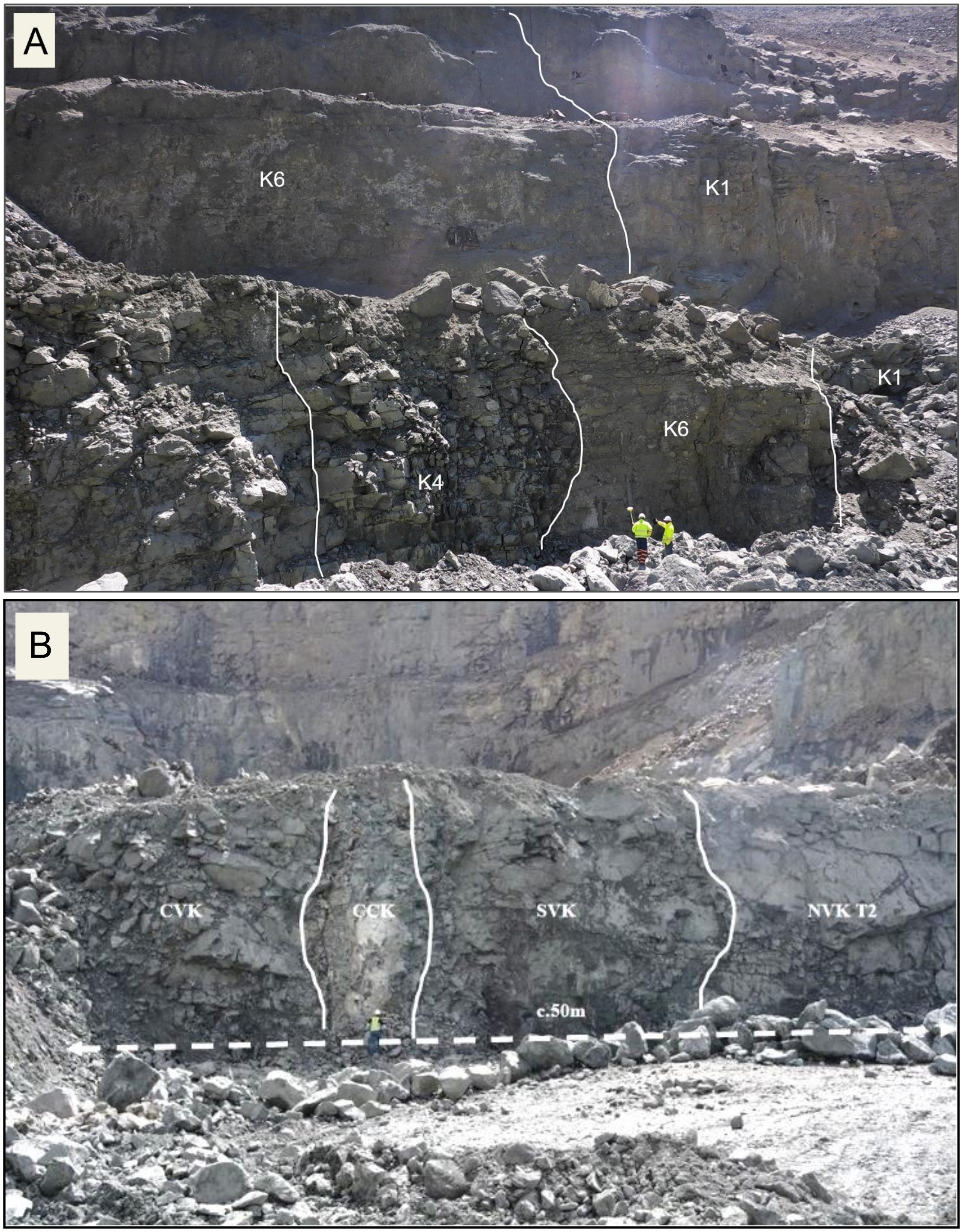
Note: (a) Main Pipe steep, striated, smooth northern pipe contact; (b) Satellite Pipe steep, smooth basalt pipe contact cross-cut by narrow dark, vertical kimberlite dykes; (c) Main Pipe basalt country rock with carbonate veins, carbonate-cemented basalt breccia and minor kimberlite; (d) megaxenolith (large raft) of carbonate-cemented brecciated basalt in Satellite Pipe.

Figure 7-6: Features of the kimberlite-basalt pipe contact observed in the open pits

Both pipes are infilled with a variant of Kimberley-type pyroclastic kimberlite (KPK), including KPK with extrusive features (KPKe), as well as coherent (CK), hypabyssal (HK) and resedimented volcaniclastic kimberlite (RVK) (Hetman et al., 2018). The pipe shapes and pipe infills show many similarities to other KPK-infilled pipes, including those from the type area, Kimberley in South Africa as documented in Hetman et al. (2018). Important similarities in terms of geological model development is the presence of near-vertical, sharp, cross-cutting internal contacts between different phases of kimberlite (Figure 7-7) and the asymmetric 3D geometry of the different pipe infills (kimberlite domains) that extend over significant vertical extents (see Sections 7.5 and 7.7). The high abundances of locally-derived, unsorted basalt xenoliths with a wide range of sizes from microxenoliths (< 1 cm) to megaxenoliths (> 1m including large rafts) is also typical of KPKs.

The presence of KPKe and RVK indicates an upper diatreme to crater setting of the Letšeng pipes, consistent with the estimated limited erosion in this area of Lesotho. There are only a few other KPK-infilled pipes with preserved crater zone deposits (e.g. Orapa in Botswana and Williamson in Tanzania).

The Letšeng KPK also has several unique characteristics compared to KPK at other localities: (i) the olivine displays complex morphologies and widespread breakage; (ii) olivine macrocrysts are small and many have serrated edges (iii) olivine microcrysts are coarse; (iii) there is an uncommonly high abundance of melilite in the groundmass; (iii) some of the melt-bearing pyroclasts have characteristics similar to those found in Fort à la Corne-type kimberlites (FPK), the other main class of pyroclastic kimberlite. These atypical features can be attributed to the marginal or melnoitic nature of the magma and the upper diatreme to crater setting of the Letšeng pipes (Hetman et al., 2018).



Source: Hetman et al., 2018

Note: (a) Main Pipe east wall at 2864 masl; Bench height is 14 m. (b) Satellite Pipe central area.

Figure 7-7: Kimberlite geology observed in the open pits showing steep internal contacts

7.4 Main Pipe Geology

The investigation into the geology of the Main Pipe was completed through open pit mapping, rock chip logging, drill core logging, and petrography. Additional quantitative abundance measurements were collected for kimberlite indicator minerals, country rock xenoliths, magnetic susceptibility, and density. The core drilling completed in 2017 and 2019-2021, which significantly augmented the previous drilling coverage of the pipe, and the extensive petrographic study of samples from all drill holes and pit samples, has led to improved understanding of the internal geology since 2012 (Venmyn Rand, 2012) and 2015 (Venmyn Deloitte, 2015).

The current understanding of the geology is that the pipe consists of 13 internal domains - 11 kimberlite domains and two basalt xenolith/basalt breccia domains (Table 7-2). Some of the kimberlite domains are separated by steep, sharp or gradational, cross-cutting internal contacts and have been shown to extend to depth in drill cores. However, the geology of the main K1 portion of the pipe (i.e., not K4, K6 or K2) is complex with shallower, irregular contacts between domains K1A, K1B-1, K1B2, K1C and the respective domains in the south of the pipe (RFW-K1S grouping). This is consistent with the upper diatreme / crater setting of Main Pipe in the portion mined and drilled to date, as is the presence of RVK in the K2 domain.

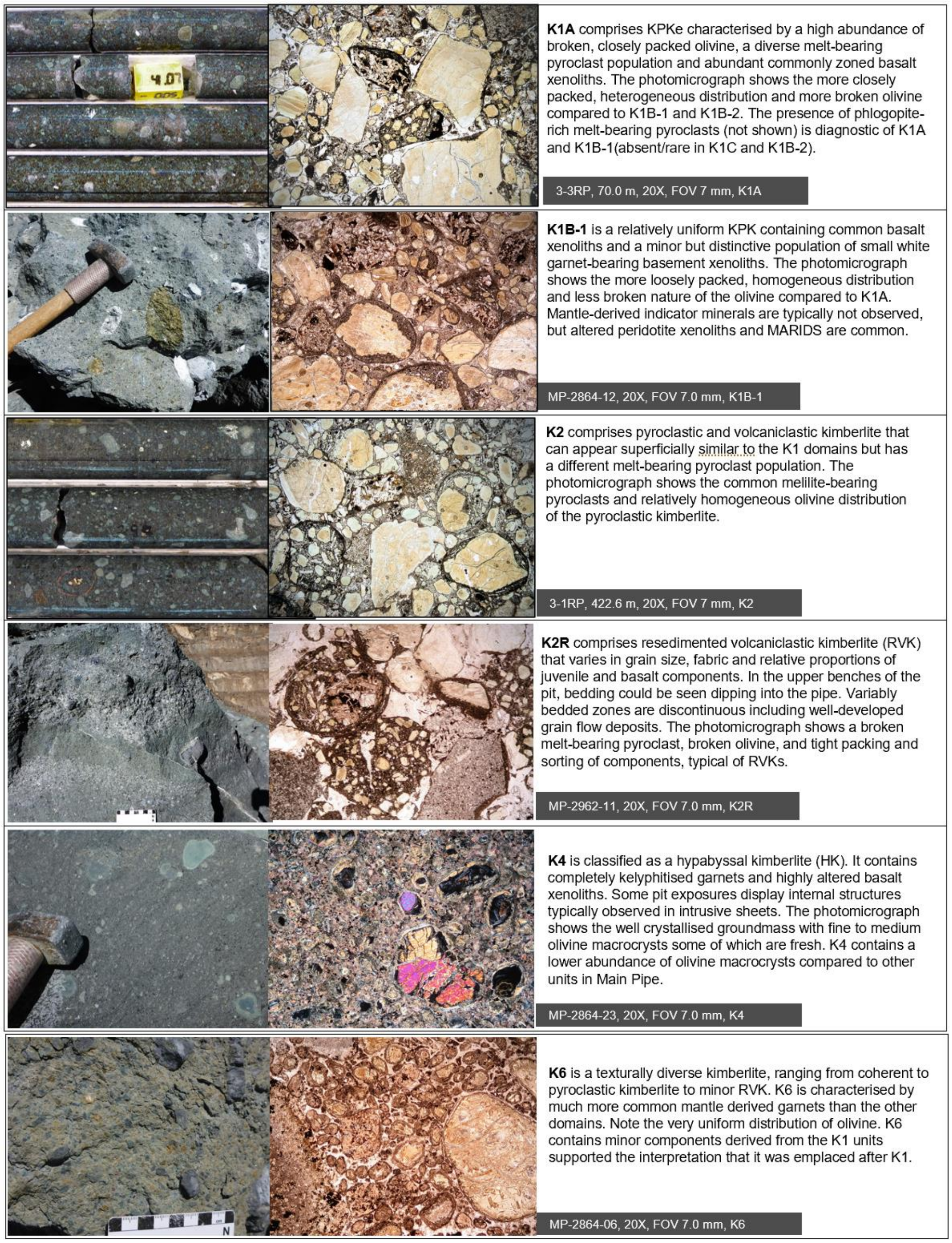
The textural-genetic kimberlite types present in Main Pipe include KPKe, KPK, RVK, PK, CK and HK. Amongst the textural and component variations observed in the pipe, which are reflected in the various domains that have been defined and modelled (Section 7.5), there are at least five phases of kimberlite: K1, K2, K4A, K4B, K6. The key characteristics of the kimberlite units in each domain are summarised in Table 7-2 and illustrated in Figure 7-8.

There is a significant amount of textural and component variability between the various K1 domains. The K1A and K1B-1 domains comprise similar components but have distinctly different textures, with K1A characterised by higher abundance of notably broken and closer packed olivine. The K1C and K1B-2 domains are similar texturally to K1A and K1B-1 (respectively) but contain different relative proportions of melt-bearing pyroclast types (all these domains have mixed melt-bearing pyroclasts populations). In the southern portion of the pipe, broadly equivalent domains are defined as RFW-K1As and RFW-K1B-1s based on differences in texture, melt-bearing pyroclast type ratios, and country rock xenolith types.

The K2 domain comprises PK and RVK and is highly heterogeneous internally in terms of the texture, grain size, fabric and spatial distribution of the RVK (which has not been modelled separately). All the kimberlite in the K2 domain is a different phase of kimberlite to the K1 kimberlite, being characterised by a distinct melt-bearing pyroclast population. The K2 domain is not equivalent to ‘K1North’ of Venmyn Rand (2012) which extended further south.

The K6 domain is also internally variable in terms of texture, the proportion of mantle-derived garnet and mantle xenoliths, and basalt xenolith abundance; which defines a crude east-west ‘zonation’ and persists to depth. The K4 domain comprises at least two HK phases.

Main Pipe is interpreted to have formed by multiple explosive eruption events with syn- and post-eruption resedimentation (remobilisation) of pyroclastic deposits into the crater. There was a progression in the eruption history from early, highly explosive emplacement events and associated resedimentation that formed the various K1 and K2 domains to later less explosive emplacement events (K6) and final intrusion of HK (K4) in the centre of the pipe.



Source: SRK, 2024 and Mohapi et al., 2017

Notes: Photographs of Main Pipe macro-specimens or drill core (left) and photomicrographs of thin sections (right). Samples are representative of their respective kimberlite unit.

Figure 7-8: Main Pipe kimberlite units

Table 7-2: Key characteristics of kimberlite units in the Main Pipe

Kimberlite domain	Kimberlite unit	Kimberlite texture*	Olivine macrocryst maximum size**	Broken olivine abundance	Olivine packing	Olivine distribution	Melt-bearing pyroclast variability	Melt-bearing pyroclast abundance	Garnet macrocryst abundance	Peridotite xenolith occurrence	Basalt xenolith abundance (vol%)	Degree of basalt xenolith alteration	Basement xenolith occurrence
K1A	K1A	KPKe (VK)	c	common	close	heterogeneous	high	low	rare	common	25-30	moderate-low; zonal	common
K1A	K1AL	KPK-KPKe	c	present	close/loose	homogeneous	high	low	rare	common	25-30	moderate-low; zonal	common
K1B-1	K1B-1	KPK	vc	rare	loose	homogeneous	high	moderate	rare	abundant	30-35	moderate-low	common
K1B-2	K1B-2	KPK	vc	rare	loose	homogeneous	moderate	moderate	rare	common	25-30	moderate-low	present
K1C	K1C	KPKe	c	common	close	heterogeneous	moderate	low	rare	common	30-35	moderate-low	present
RFW-K1S	RFW-K1As	KPKe	c	common	close	heterogeneous	high	low	rare	present	25-30	moderate; zonal; shards	common
RFW-K1S	RFW-K1B-1s	KPK	vc	rare	loose	homogeneous	moderate	moderate	rare	present	30-35	moderate	common
RFW-K1S	RFW-K1B-2	KPK	vc	rare	loose	homogeneous	moderate	moderate	rare	present	25-30	moderate	present
K2	K2	KPKe (VK)	vc	present	loose	homogeneous	low	high	rare	rare-common	25-30	moderate	present
K2	K2R	RVK	f / vc	common	close/loose	heterogeneous	low	low-high	rare	rare-common	20-45	moderate-low	present
K2D	K2D	PK-RVK	f / c	rare-common	close/loose	homogeneous to heterogeneous	low	low-high	rare	present	20-30	moderate-low	rare
K4	K4A	HK	m	rare	n/a	homogeneous	n/a	absent	present	rare	5-15	high	rare/absent
K4	K4B	HK	m	rare	n.a	homogeneous	n/a	absent	present	rare	5-15	high	rare/absent
K6	K6	PK-CK>RVK	c	rare-common	close/loose	homogeneous to heterogeneous	low	absent-common	common-rare	common-rare	20-35	high-low	rare

Source: SRK (2024)

Notes:

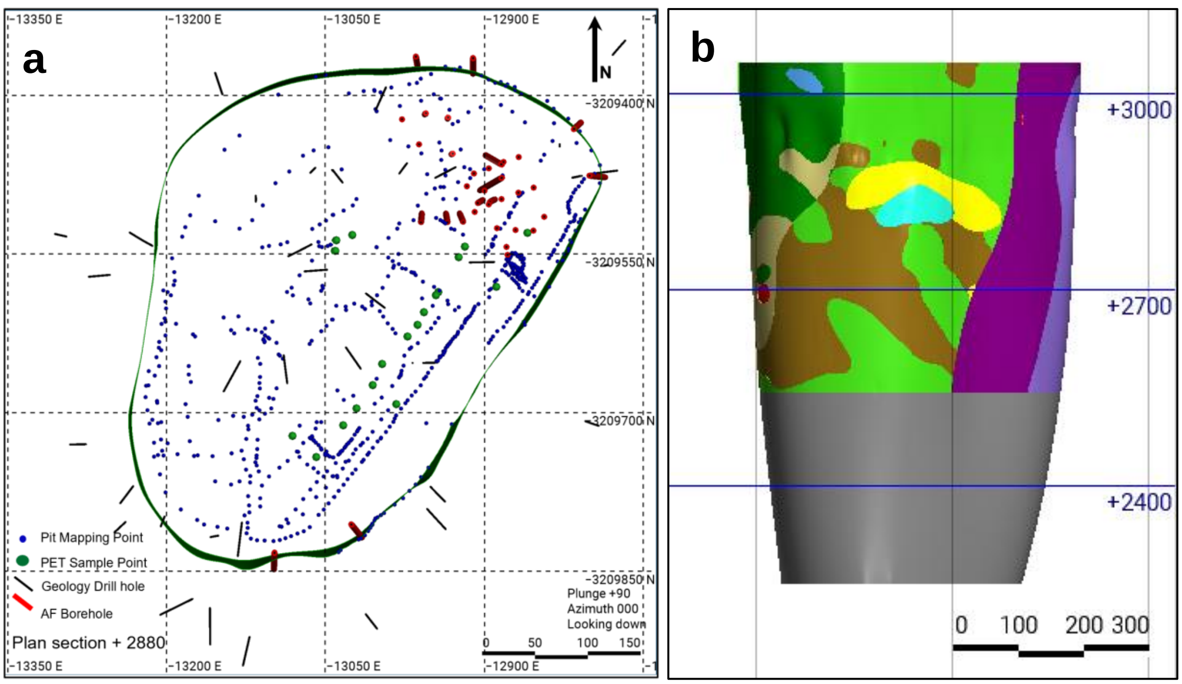
*Kimberlite domains/units/textures: KPK = Kimberley-type pyroclastic kimberlite; KPKe = KPK displaying extrusive features; HK = hypabyssal kimberlite; RVK=resedimented volcaniclastic kimberlite; CK = coherent kimberlite; RFW-K1S = grouping of southern K1 domains exhibiting texture/component differences to other K1 domains.

**Maximum sizes: m (medium) = >2–4 mm; c (coarse) = >4–8 mm; vc (very coarse) = >8–16 mm; uc (ultra coarse) = >16 mm

7.5 Main Pipe Geological Model

The geological model of Main Pipe consists of a pipe shell model defining the geometry and extent of the deposit, and an internal geological domain model comprising multiple wireframe solids that represent the spatial distribution of the various kimberlite and basalt xenolith/breccia units. The geological model was generated using Seequent's Leapfrog Geo software and is based on 1,940 in-pit mapping points, 72 diamond drill holes (23,467 m), 37 percussion holes, and 1,655 petrography samples from drill core and pit exposures (Figure 7-9). The diamond drill holes used to constrain the model are shown in Section 10 and drill core petrography sample distribution is shown in Section 11.

The undepleted pipe shell model extends from surface to 2250 masl. The internal domain model extends to 2542 masl, below which the internal geology is undefined due to insufficient drilling. The base of the open pit on 31 December 2023 was at approximately 2780 masl. The internal geological model in plan and cross section is shown in Figure 7-10 and Figure 7-11.

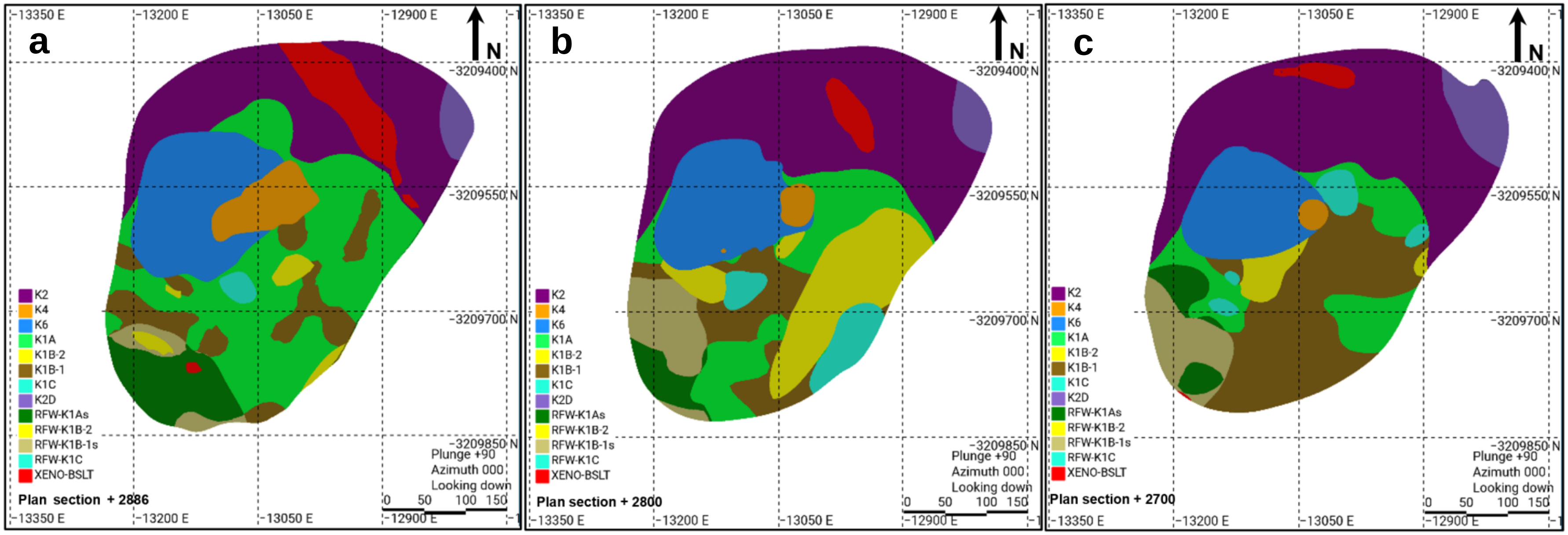


Source: SRK (2024)

Note: Plan map shows the data sources for different types of open pit examinations and diamond drill hole traces in the section. Only pit petrography samples are shown; drill core petrography samples are shown in Section 11. AF = percussion RC hole.

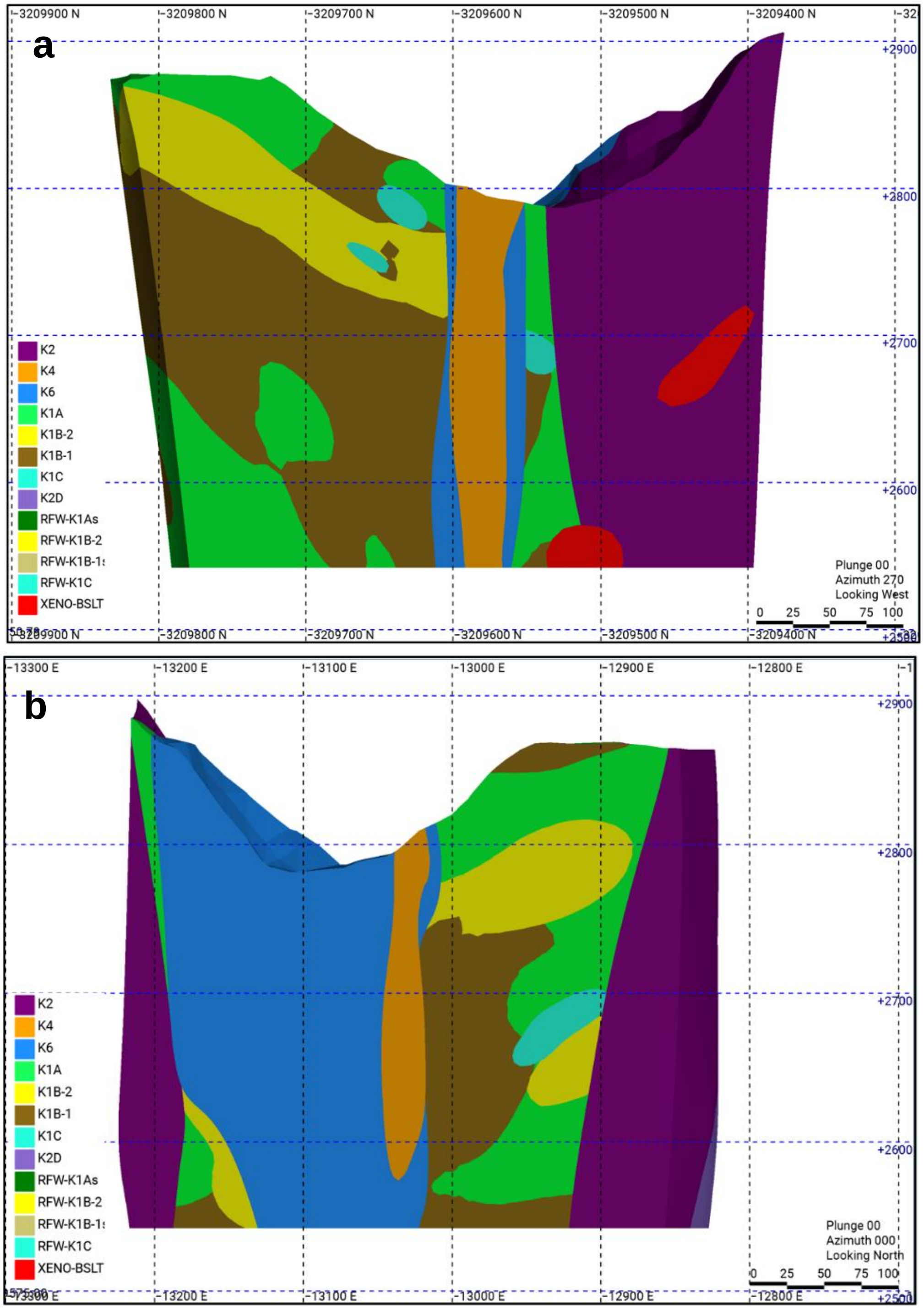
Figure 7-9: Main Pipe model (a) in plan section at 2880 masl showing data and (b) undepleted

The various K1 domains occupy the majority of the centre and south of the pipe. The K2 domain occurs in the north and the contact with the K1 domains is steep, irregular and gradational. K6 forms a steep-sided downward tapering pipe-like domain in the centre of the pipe and K4 cross-cuts and occurs partially within K6. The XENO-BSLT domain was modelled using pit mapping and basalt xenolith intersections > 8 m and consists of multiple occurrences of basalt breccia (BB) and basalt breccia containing variable amounts of kimberlite (BBK) up to 25% locally (e.g. the large XENO-BSLT in K2).



Source: SRK (2024)

Figure 7-10: Main Pipe internal domain model in plan section at (a) 2886 masl, (b) 2880 and (c) 2700 masl



Source: SRK (2024)

Note: 40 m slice width; 31 December 2023 depletion surface.

Figure 7-11: Main Pipe internal domain model in cross section (a) north-south looking west, and (b) east-west looking north

7.6 Satellite Pipe Geology

The investigation into the geology of the Satellite Pipe was completed through open pit mapping, rock chip logging, drill core logging, and petrography. Additional quantitative abundance measurements were collected for country rock xenoliths, magnetic susceptibility, and density.

The Satellite Pipe is dominated by Kimberley-type pyroclastic kimberlite (KPK) and less abundant Kimberley-type pyroclastic kimberlite with extrusive features (KPKe) and resedimented volcaniclastic kimberlite (RVK) with minor amounts of coherent kimberlite (CK) classified as hypabyssal kimberlite (HK). The key characteristics of each rock type are presented in Table 7-3 and illustrated in Figure 7-12.

The current understanding of the geology of Satellite is that the pipe consists of six kimberlite domains: southern volcaniclastic kimberlite (SVK), northern volcaniclastic kimberlite (NVK), green volcaniclastic kimberlite (GVK), KIMB7 and the central coherent kimberlite (CCK). The last domain (GVK-M; also referred to as GVK-SVK-Mixed) is a mixed domain dominated by GVK and significant SVK blocks with minor amounts of NVK and KIMB7. The internal domains with the exception of the GVK-M domain are all separated by steep, sharp, cross-cutting internal contacts all of which have been observed to extend to depth in the drill cores. The NVK domain has three internal units: NVK-1, NVK-2, and NVK-3. One large basalt megaxenolith is present within the SVK domain.

Table 7-3: Satellite Pipe rock type characteristics

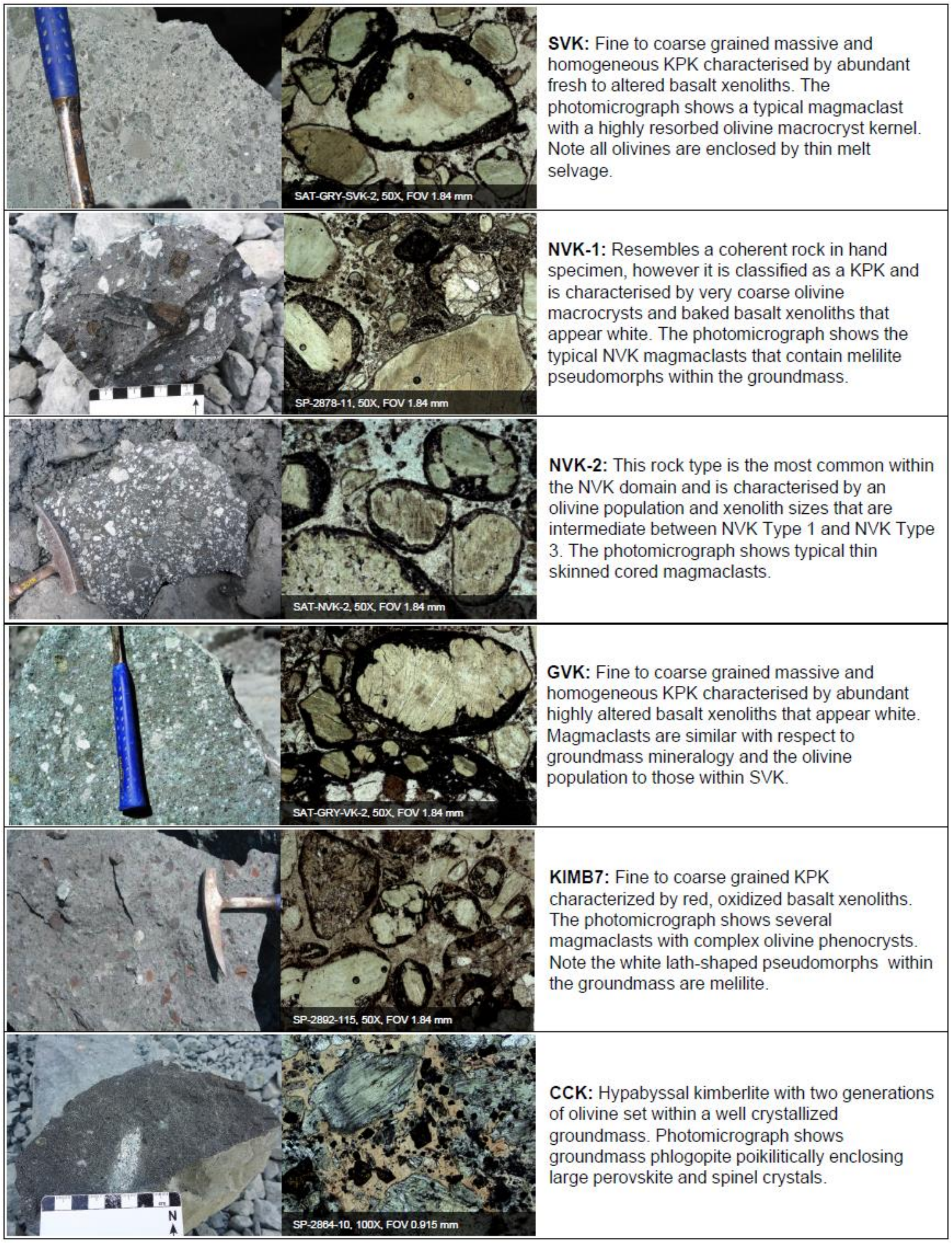
Kimberlite domain*	Kimberlite unit*	Kimberlite texture*	Olivine macrocryst maximum size**	Degree of olivine macrocryst replacement	Broken olivine abundance	Magmaclast maximum size	Garnet macrocryst abundance	Peridotite xenolith occurrence	Basalt xenolith abundance (vol%)	Degree of basalt xenolith reaction
SVK	SVK	KPK-KPKe	c	high	common	c	rare	rare	25	minor
NVK	NVK-1	KPK-HK	uc	moderate	rare	uc	rare	common	30	extensive to digested
NVK	NVK-2	KPK	vc	moderate	present	vc	rare	common	20	extensive
NVK	NVK-3	?KPK	m	moderate	common	c	rare	rare	40	minor to extensive
GVK	GVK	KPK	c	high	common	c	rare	rare	25	extensive
GVK-M	GVK+SVK	KPK	c	high	common	c	rare	rare	25	variable
KIMB7	KIMB7	KPK-KPKe-RVK	c	high	common	c	rare	rare	35	hematite stained
CCK	CCK	HK	c	low	absent	absent	rare	present	<5	digested

Source: Hetman et al., 2018

*Kimberlite domains/units/textures: KPK = Kimberley-type pyroclastic kimberlite; KPKe = KPK displaying extrusive features; HK = hypabyssal kimberlite; RVK=resedimented volcaniclastic kimberlite; SVK = southern volcaniclastic kimberlite; NVK = northern volcaniclastic kimberlite; GVK= green volcaniclastic kimberlite; GVK-M = mixed domain also referred to as GVK-SVK-Mixed; CCK = central coherent kimberlite

**Maximum sizes: m (medium) = >2–4 mm; c (coarse) = >4–8 mm; vc (very coarse) = >8–16 mm; uc (ultra coarse) = >16 mm

For more detailed descriptions of the Satellite rock types see: Hetman et al., 2018; Nkotsi et al., 2017 (poster).



Source: Nkotsi et al., 2017

Notes: Photographs of Satellite pipe macro-specimens (left) and photomicrographs of thin sections (right). Samples are representative of their respective kimberlite units.

Figure 7-12: Satellite Pipe domains and rock units

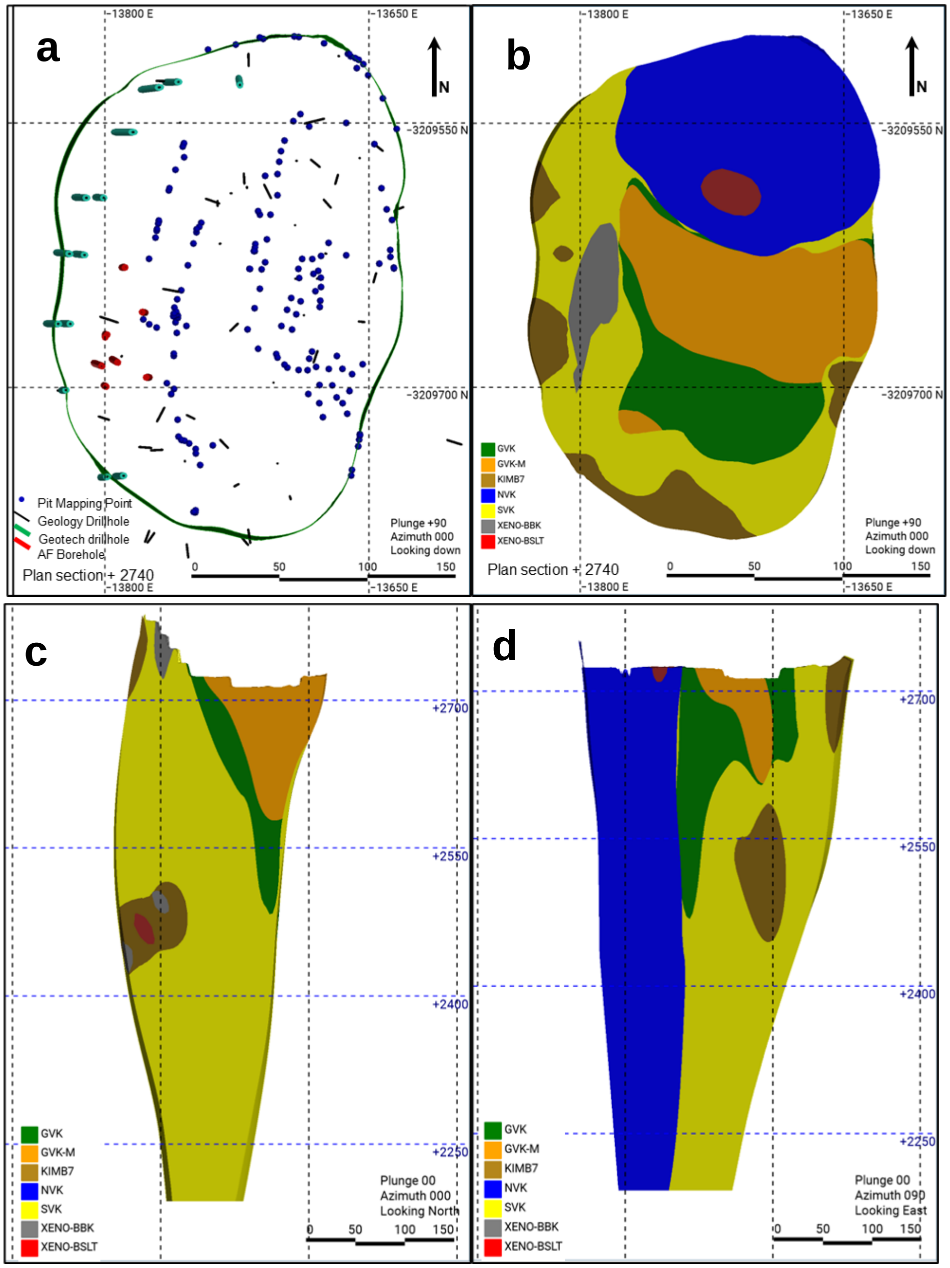
The Satellite Pipe was formed by a series of multiple explosive fragmentation events and there was a progression in the eruption history from early, highly explosive emplacement to later low energy emplacement events with the intrusion of HK. The pipe was formed and infilled as follows:

- The first phase of kimberlite emplacement prior to pipe development was the intrusion of kimberlite dykes within a regional structural trend. The pipes were developed within the same structural trend.
- The oldest phase of kimberlite preserved in the pipe is KIMB7, the only rock type displaying conspicuous RVK features.
- SVK was then emplaced explosively, during which time the majority of the KIMB7 initially infilling the pipe was removed. SVK is a KPK with abundant broken olivine and magmaclasts. These features are more typical of extrusive processes and therefore, SVK is termed KPK-KPKe. The SVK contains a carbonate-cemented and brecciated country rock basalt large megaxenolith (>100 m).
- After the SVK emplacement, the NVK domain was formed, and it consists of a steep-sided pipe nested within SVK. There are remnants of SVK within NVK and along the pipe margin. NVK is dominated by KPK, displays textures transitional to HK, and contains minor amounts of KPKe and HK. The textures and sizes of the olivine, magmaclasts and basalt xenoliths were used to subdivide the NVK domain into 3 units: NVK-1, NVK-2, and NVK-3.
- The last major explosive emplacement event was that of GVK nested within SVK – this domain is complex and contains a mixed domain containing a zone with significant blocks of SVK as well as NVK and KIMB7.
- The last emplacement event representing the “last gasp” of this volcanic system was the emplacement of CCK within the center of the pipe. CCK represents a highly irregular elongate internal intrusion of HK that cross-cuts the SVK and GVK and it is volumetrically the smallest pipe infill present. There are a variety of minor HK dykes, that were emplaced during, and after pipe formation.

7.7 Satellite Pipe Geological Model

The geological model of Satellite Pipe consists of a pipe shell model defining the geometry and extent of the deposit, and an internal geological domain model comprising multiple wireframe solids that represent the spatial distribution of the various kimberlite and basalt xenolith/breccia units. The geological model was generated using Seequent’s Leapfrog Geo software and is based on 3,035 in-pit mapping points, 85 diamond drill holes (25,024 m), 80 percussion holes, and 1,198 petrography samples from drill core and pit exposures (Figure 7-13). The diamond drill holes used to constrain the model are shown in Section 10 and drill core petrography sample distribution is shown in Section 11.

The undepleted pipe shell model and the internal domain model extend from surface to 2192 masl. The base of the open pit on 31 December 2023 was at approximately 2710 masl. The internal geological model in plan and cross section is shown in Figure 7-13.



Source: SRK (2024)

Notes: **a.** Plan view map of the data sources for the different types of open pit examinations. **b.** Plan view map of the geology of Satellite pipe showing the main kimberlite domains SVK, NVK, GVK and GVK-M (also known as GVK-SVK-Mixed) and KIMB7. The large country rock megaxenoliths are also shown (XENO-BBK, XENO-BSLT). **c.** Cross-sectional view looking North showing the geology of Satellite Pipe. **d.** Cross-sectional view looking East showing the geology of Satellite Pipe.

Figure 7-13: Geological model of Satellite Pipe

7.8 Geological Continuity

Demonstration of geological continuity within the main kimberlite units in each pipe is required for the mineral resource estimates to permit assignment of average diamond grades and values derived from production data to kimberlite at depth (Section 14). An assessment of the degree of geological continuity was carried out to generate the geological models and in support of the resource estimate, involving examination of pit surface exposures and drill cores, an extensive petrographic study of drill core and pit samples, and dilution and other quantitative measurements on drill cores (Section 10). Geological continuity within a domain relates to consistency in the phase of kimberlite, the types, grain size, texture and abundance of juvenile components, and the amount of country rock dilution.

This work confirmed that many of the major kimberlite domains in both pipes are broadly homogeneous and that there are no major geological discontinuities or significant large-scale trends in juvenile content or dilution with depth. However, several domains in each pipe are internally heterogeneous, as follows:

- K2 in Main Pipe (PK and RVK).
- K6 in Main Pipe (PK-CK-RVK; variable dilution and garnet abundance).
- NVK in Satellite Pipe (textural variation and component size variations denoted by NVK-1, NVK-2, NVK-3).
- GVK-M (GVK-SVK-Mixed) in Satellite Pipe (comprises GVK, SVK and minor amounts of NVK and KIMB7).

Nevertheless, the observed variability has been shown to persist to depth in these domains and no major geological discontinuities or significant large-scale trends in juvenile content or dilution with depth are evident from the material examined and available data.

Drill core microdiamond sample analysis, kimberlite indicator mineral abundance and composition studies, and groundmass spinel geochemistry are other methods typically utilised to assess geological continuity in kimberlites. All of these were tested at Letšeng but proved not effective due to the very low numbers of microdiamonds and indicator minerals in a majority of the units and the lack of geochemical distinction between the groundmass spinel in many of the units (SRK, 2019).

7.9 Confidence of Geological Models

There are two criteria used to assess geological confidence: (1) delineation of the pipe contacts and the extents of internal domains (i.e. volume control and position of contacts between domains); and (2) demonstration of geological continuity within domains (discussed above). The Satellite and Main pipe shell models are both well constrained by drilling to 2542 masl (Section 10). The degree of control on the contacts between the internal domains is relatively high in Satellite Pipe to 2542 masl. In Main Pipe, the degree of control on the contacts between the internal domains is relatively high to 2700 masl. The reduced drill coverage below 2700 masl, a change in K1A texture below this elevation, and insufficient control on the K6 to K1A/K1B contact reduces the confidence below this elevation.

7.10 Conclusions

A considerable amount of pit mapping, diamond drilling, geological logging, petrographic work, and quantitative measurements of various components/parameters has been undertaken at Letšeng in support of kimberlite geology development, resulting in relatively high confidence geological models and the recognition of new kimberlite units and domains not previously identified. The production results align well with the new geological domains that have been established for both pipes.

8 Deposit Types

8.1 Deposit Type

The primary source rocks for diamonds that are presently being mined worldwide are kimberlites, orangeites and olivine lamproites. The vast majority of primary diamond deposits mined globally consist of steep-sided pipe-shaped bodies infilled with volcaniclastic kimberlite. Less common are diamond mines hosted in hypabyssal kimberlite and orangeite dykes or sills (intrusive sheets).

Kimberlites are mantle-derived (>150 km depth) volatile-rich, ultramafic magmas that transport diamonds together with the rocks from which the diamonds are directly derived (primarily peridotite and eclogite) to the earth’s surface. The diamonds at Letšeng include a population of ‘superdeep’ (sublithospheric) diamonds classified as Type IIa diamonds that originate from depths of greater than 600 km.

Kimberlite deposits are typically formed from multiple batches of magma that were emplaced at or near the earth’s surface. The total or remnant emplacement products of a single batch of magma is termed a phase of kimberlite (Scott Smith et al., 2018). Each phase of kimberlite typically has distinct diamond populations, grades, and values. Most kimberlite bodies comprise more than one phase of kimberlite, and the internal architecture of the various phases and nature of contacts between them can vary considerably within and between deposits.

The emplacement of kimberlite at or just below the surface of the crust as volcanic pipes and sheet-like or irregular intrusions is influenced by many factors (Clement, 1982; Clement and Reid, 1989; Field and Scott Smith, 1999; Sparks et al., 2006; Barnett, 2008; Barnett et al., 2013) which include the following:

- Magma characteristics (volatile content, viscosity, crystal content, volume, temperature)
- Nature of the host country rocks
- Local structural setting
- Local and regional stress field
- Presence of water

The sheets and irregular intrusions are typically emplaced along pre-existing planes of weakness in the country rock. Their emplacement does not involve explosive volcanic activity and they typically comprise texturally-unmodified hypabyssal kimberlite, a variety of coherent kimberlite. The volcanic pipes are generated by explosive volcanic activity (related to degassing of magma and/or interaction of magma and water) which produces clasts of kimberlite magma (termed magmaclasts/melt-bearing pyroclasts; Scott Smith et al., 2013) and the country rock into which it was emplaced (country rock xenoliths). Deposits formed by volcanic processes which texturally-modify the primary components of a kimberlite magma are termed volcaniclastic kimberlite.

Due to the wide range of settings for kimberlite emplacement and varying properties of the kimberlite magma, kimberlite volcanoes can take a wide range of forms and be infilled by a variety of deposit types (Skinner and Marsh, 2004; Scott Smith, 2008; Scott Smith and Smith 2009). Kimberlite pipes are often highly eroded with only the deeper portions preserved; crater deposits occur at some localities and extra-crater deposits are rare. Kimberlite volcanoes are infilled by a very wide range of volcaniclastic kimberlite types, ranging from massive, minimally modified (texturally) pyroclastic kimberlite, to highly modified pyroclastic and resedimented volcaniclastic deposits that have been variably affected by dilution, fragmentation, sorting, and elutriation (removal of fines).

Diamond occurs in kimberlite in trace amounts (ppm) as a dispersed particulate mineral. Diamonds can vary significantly within and between different kimberlite deposits in terms of total concentration (grade in carats per tonne), particle size distribution, and physical characteristics.

The value of each diamond and thus the average value of each diamond population is governed by the size and physical characteristics of the stones. The concentration of diamonds in any given kimberlite is dependent on the following factors:

- The extent to which the source magma has interacted with and sampled potentially diamondiferous deep lithospheric mantle and material sourced from the superdeep sub-lithospheric mantle.
- The diamond content of the sampled mantle.
- The extent of resorption of diamond by the kimberlite magma.
- Physical sorting and/or winnowing processes during volcanic eruption and deposition.
- Dilution of the kimberlite with barren country rock or surface sediments.

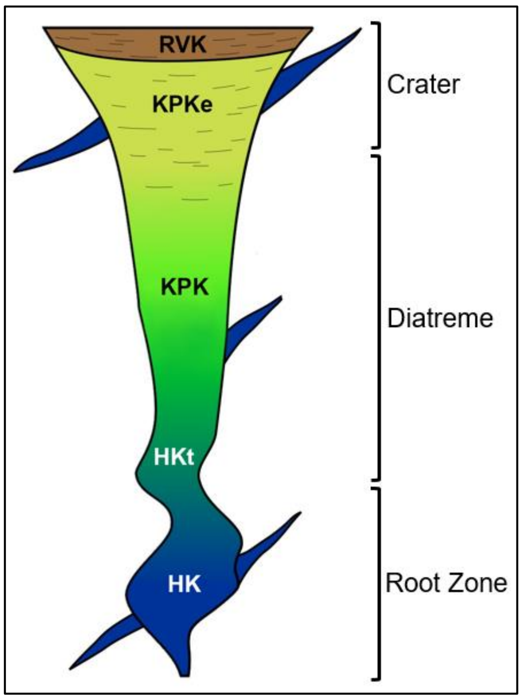
At Letšeng Mine, the extent of mantle sampling and dilution by country rock are considered to be the main factors controlling variation in diamond grade between phases.

8.2 Geological Model

The Main and Satellite kimberlites at Letšeng are primary diamond deposits that occur as vertical, steep-sided, downward tapering volcanic pipes. The pipes are associated with precursor and late-stage hypabyssal kimberlite sheets. Many kimberlite pipes comprise three general pipe zones (Figure 8-1) that are infilled by a variety of kimberlite types. The morphology of the Main and Satellite pipes and the nature of their kimberlite infills indicates that the portions of the pipes mined and delineated by drilling to date comprise the upper diatreme and crater zones of the pipes. Both pipes are infilled with a variant of Kimberley-type pyroclastic kimberlite (KPK), coherent, hypabyssal and resedimented volcaniclastic kimberlite (Hetman et al., 2018). Megaxenoliths (large rafts) of brecciated country rock basalt and basalt-rich kimberlite zones (collapse breccias) are present in both pipes, in addition to the range of textural kimberlite types and multiple phases of kimberlite observed in each pipe. The overall high proportion of country rock dilution is typical of KPK-infilled pipes globally.

The HK and KPK in the Main and Satellite pipes are similar to those described from other KPK systems worldwide, and the emplacement model is analogous to well documented models of formation and emplacement in KPK systems. (e.g. Clement, 1982; Hetman et al., 2004; Harder et al. 2013; Moss et al., 2013; Muntener and Scott Smith., 2013). However, the KPK at Letšeng exhibits several key distinct differences as summarised in Section 7.3. which are attributed at least in part to Letšeng's location on the craton margin. The smooth, sharp pipe contacts and overall low abundance of emplacement-related marginal breccias also distinguishes Letšeng from many other KPK-infilled pipes, particularly those hosted within basement granitoids, and is attributed to the broadly uniform, competent basalt host rocks.

The internal geology of KPK-filled pipes is typically characterised by the presence of multiple phases of kimberlite that are geologically continuous over significant vertical depths with sharp or gradational sub-vertical internal contacts between them. There are only a few KPK-infilled kimberlite pipes globally with preserved upper diatreme and crater zones. These are characterised by the varied depositional products of eruption processes and syn- and/or post eruption resedimentation processes, including collapse breccias, debris flow and grain flow deposits.



Source: modified after Scott Smith et al. (2017)

Note: Schematic geology of a vertical, uneroded KPK-infilled pipe with three general pipe zones infilled with a variety of textural kimberlite types: hypabyssal kimberlite (HK), transitional hypabyssal kimberlite (HKt), Kimberley-type pyroclastic kimberlite (KPK), KPK with extrusive features (KPKe), and resedimented volcaniclastic kimberlite (RVK). KPK is a textural variety of kimberlite formerly known as TK. Precursor HK intrusive sheets are also shown. Erosion at Letšeng is estimated to be 400-500 m (Hetman et al. 2018).

Figure 8-1: Simplified Schematic Representation of an Uneroded KPK-Infilled Pipe

9 Exploration

All exploration associated with the discovery and assessment of the Main and Satellite Pipes occurred prior to Gem Diamond's purchase of Letšeng Diamonds in 2006, summarised in Section 6.

Upon purchase by Gem Diamonds, Letšeng Diamonds logged all available prior drill cores with the aim of determining that previous records supported developments in emplacement theories at that time in relation to the 2009 3D geology models (Venmyn Rand, 2011).

Gem Diamonds has not carried out exploration within the Mining Lease and has focused on mining and resource development of the Main and Satellite pipes.

10 Drilling

10.1 Drilling Methods and Procedures

10.1.1 RTZ Exploration Core Drilling, 1968 – 1972

Venmyn Rand (2011) stated that core drilling was carried out by RTZ over the Main and Satellite Pipes during their 1968 – 1972 exploration program, for delineation of the kimberlite basalt country rock contacts. At the Main Pipe, core drilling also targeted the contacts between the “K6 and K1 facies” and basalts. All holes were inclined. (Figure 6-1).

10.1.2 De Beers Drilling, 1972 – 1982

There are no historical drilling records available from De Beers, and Venmyn Rand (2012) did not report any drilling by De Beers.

10.1.3 Letšeng Diamonds Historical Geology Delineation Core Drilling, CAM 2005 – 2006

Venmyn Rand (2012) reported that a South African consulting mine engineering firm, MineNet, was contracted by Letšeng to manage the Main and Satellite Pipes 2005 – 2006 core drilling program, stated “to prove” their continuity at depth for increasing resource volumes, specifically:

- Confirm the vertical continuity of kimberlite with depth.
- Identify the different kimberlite “facies” within the Main Pipe and their geometry.
- Identify the vertical extent and geometry of the country rock raft within the Satellite Pipe.
- Sample core for density determinations and geotechnical investigations.

The holes were planned inclined, dipping between about -50º to -63º, commencing at HQ diameter (63.5 mm) and reducing to NQ diameter (47.6 mm) at depth. All drill hole positions were surveyed by Letšeng’s resident mine surveyor, who also carried out downhole surveys. Venymn Rand (2012) stated that the topographical controls were considered sufficient, and the quality of all surveys was considered good.

A contractor carried out the core drilling employing rotary core drill rigs using standard HQ and NQ core tubes. The drill crews were managed by supervisors reportedly experienced in kimberlite core drilling, who reported to the drilling contractor manager.

Adverse drilling conditions which resulted in slow penetration rates, and hole terminations, were:

- Very cold weather in the winter months.
- Fractured ground within the basalt. Loss of water in the basalt and basalt kimberlite contacts required multiple grouting of certain holes.

- Clay intersections had concomitant water losses that resulted in drilling stoppages. Highly weathered kimberlite in the form of clay resulted in the termination of some holes on the Main Pipe.

The core was reported being extracted by “tilting” (Venmyn Rand, 2012). All cores were removed from the drill sites on a daily basis and stored in core boxes, each holding 12 m, and placed in a freight container.

10.1.4 Letšeng Diamonds Core Drilling Campaigns Overview, 2011-2014, 2017-2018 and 2021-2023

Letšeng conducted three major core drilling campaigns on and around the Main and Satellite Pipes over 2011 – 2014, 2017 – 2018 and 2021 - 2023:

- Delineation core holes for external pipe shapes and internal geology, and to provide material for petrographic, indicator mineral analysis, groundmass spinel compositions, density, and microdiamond investigations.
- Geotechnical core holes for pit slope and ramp access redesign.
- Geohydrology core holes for dewatering and groundwater monitoring.

The grand total core drilling over 2011 to 2023 was 135 holes for 39,557 m:

- 2011 – 2014: 38 holes for 18,092 m
- 2017 – 2018: 31 holes for 8,386 m
- 2021 – 2023: 66 holes for 13,079 m

Most of the core holes were inclined, the others being vertical, and dipped from -90º to -43º. Core drilling commenced at HQ diameter (63.5 mm) and reduced to NQ diameter (47.6 mm) at depth if required. All drill hole collar positions were surveyed by Letšeng’s mine survey team with a geologist. Most of the inclined holes were downhole surveyed using a Reflex GYRO™ tool, that was run upon completion of drilling, prior to pulling rods. It should be noted that the vertical core holes were not downhole surveyed.

Core drilling contractors and inhouse drilling teams carried out the core drilling, employing rotary core drill rigs using standard HQ and NQ core tubes. The drill crews were managed by full time supervisors experienced in kimberlite core drilling, who reported to the Letšeng site geologist.

10.1.5 Letšeng Diamonds RC Percussion Drilling Programs Overview, 2014 – 2016 and 2020

There were three reverse-circulation (RC) percussion drilling programs carried out by Letšeng on and around the Main and Satellite Pipes over 2014 – 2016 and 2020 to delineate pipe wall rock contacts, investigate country rock basalt rafts, and geohydrology monitoring.

The grand total RC drilling was 119 holes for 8,788 m:

- 2014 – 2016: 90 holes for 5,999 m

- 2020: 29 holes for 2,789 m

The RC percussion holes were 133 mm diameter, drilled mainly inclined with the others being vertical, dipping from - 90º to - 55º, and were overall relatively shallow. There was no downhole surveying carried out on the RC percussion holes.

10.2 Drilling Logging Procedures

10.2.1 RTZ Exploration Core Drilling, 1968 – 1972

Reportedly, no drill logs are available from the RTZ drilling program (Venmyn Rand, 2012). No further information has been obtained by SRK.

10.2.2 De Beers Drilling, 1972 – 1982

No information has been obtained by SRK for the drilling conducted between 1972 to 1982.

10.2.3 Letšeng Diamonds Historical Geology Delineation Core Drilling, CAM 2005 – 2006

Venymn Rand (2011) reported the following 2005 – 2006 core drilling program drill logging procedures. MineNet's consulting geologist, Dr. Patrick Bartlett, was responsible for overseeing core logging and sampling:

- The core was measured by suitably trained and experienced "core writers", with measurements checked by the drill supervisors and the on-site geologist.
- All cores were photographed.
- Kimberlite "facies" were identified in the logs, including dilution percentages in relation to kimberlite, alteration and types of veining and jointing.
- Geotechnical logging was carried out on all core to measure core recovery, Rock Quality Designation ("RQD"), rock competence and hardness. These parameters were used to determine the rock mass ratings ("RMR / Q RMR").
- Core recoveries were on average high being >90%, except where clay was intersected. Clay intersections had low core recoveries.

An associate of Venmyn Rand, Mr. Anthony Bloomer, independently reviewed the logging of selected 2005 – 2006 core holes.

10.2.4 Letšeng Diamonds Core Drilling Campaigns, 2011 – 2014, 2017 – 2018 and 2021 – 2023

Logging of diamond drill core was completed using standard operating procedures (SOPs) for the 2011 to 2023 core drilling programs. Detailed SOPs for lithological logging and sampling have been designed by SRK Consulting, that were developed in 2013 after reviewing all core holes was completed.

All core was moved from the drill site to the core shack, where it was arranged. A Letšeng geology team member would ensure core was in order, broken pieces reassembled, core boxes were marked properly with meterage markers and labels. The core was then quick logged by the site geologist using simple designations such as overburden, country rock and kimberlite.

Photographs of core were taken after logging. Close-up photos were also taken to record notable features in greater detail. Detailed logging of kimberlite only was subsequently carried out by the SRK QP geologist on site, with the aid of a binocular microscope and 500 W halogen lamps. Kimberlite geology logs recorded major domains to 1 m accuracy. Within the kimberlite intersections, the juvenile and country rock components were mapped using the terminology and guidelines as published in Scott Smith et al. (2013). Particular attention was paid to the olivine macrocryst populations and the magmaclasts. A graphic log was produced incorporating observations and interpretations including the rock type and domain classification for 3D modelling. As logging proceeded the drill core was sampled for representative petrography.

Letšeng geologists were responsible for measuring and recording geotechnical parameters and kimberlite dilution line scans, photographing the core, and completing mantle derived indicator mineral box counts. The dilution line scans and mantle mineral counts were supervised and reviewed by Dr. J. Robey (Rockwise Consulting).

10.2.5 Letšeng Diamonds RC Percussion Drilling Programs, 2014 – 2016, 2017 and 2020

The following Letšeng Diamonds 2014 – 2016, 2017 and 2020 RC percussion drill program logging procedures were employed by Letšeng. SRK has not reviewed percussion drill logging procedures.

10.3 Drilling Pattern and Density

10.3.1 RTZ Exploration Core Drilling, 1968 – 1972

Historical core drilling carried out by RTZ at the Main and Satellite Pipes during their 1968 -1972 exploration program is shown in Figure 6-1. RTZ reportedly completed 2,100 m of core drilling (Venmyn Rand, 2012), that appears to have been six holes in the Satellite Pipe and four holes in the Main Pipe (Figure 6-1). No further information has been obtained by SRK.

10.3.2 De Beers Drilling, 1972 – 1982

No information has been obtained by SRK that De Beers conducted and reported drilling.

10.3.3 Letšeng Diamonds Historical Geology Delineation Core Drilling, CAM 2005 – 2006

A grand total of 20 geology delineation core holes for 8,534 m was drilled by Letšeng Diamonds over 2005 – 2006 when under ownership by CAM (Table 10-1, Figure 6-2).

Table 10-1: Letšeng - CAM core drilling program, 2005 -2006

Year	Pipe	No. Holes	Metres Drilled	Lengths, m	Dips, degrees
2005-2006	Main	13	4,789	204 - 571	-63 to -51
2005-2006	Satellite	7	3,745	144 - 825	-60 to -50
Total		**20**	**8,534**		

Source: Venymn Rand (2012)

10.3.4 Letšeng Diamonds Main Pipe Geology Delineation Core Drilling, 2011 – 2014, 2017 – 2018 and 2021 - 2022 Campaigns

Geology delineation core drilling by Letšeng Diamonds carried out on the Main Pipe over 2011 to 2023 was a grand total of 54 holes for 17,512 m (Table 10-2, Figure 10-1).

Table 10-2: Letšeng - Main Pipe delineation core drilling campaigns, 2011 - 2022

Year	No. Holes	Metres Drilled	Lengths, m	Dips, degrees
2011-2014	19	8,966	10 - 877	-82 to -55
2017-2018	12	3,154	55 - 451	-90 to -49
2021-2022	23	5,391	45 - 361	-90 to -42
Total	**54**	**17,512**		

Source: Letšeng Diamonds (2023)

Notes: Excludes three geotechnical core holes

10.3.5 Letšeng Diamonds Satellite Pipe Geology Delineation Core Drilling, 2011 – 2014, 2017 – 2018 and 2021 – 2023 Campaigns

Geology delineation core drilling by Letšeng Diamonds carried out on the Satellite Pipe over 2011 to 2023 was a grand total of 53 holes for 17,267 m (Table 10-3, Figure 10-1):

Table 10-3: Letšeng - Satellite Pipe delineation core drilling campaigns, 2011 - 2023

Year	No. Holes	Metres Drilled	Lengths, m	Dips, degrees
2011-2014	15	7,482	5 - 922	-90 to -56
2017-2018	16	3,980	93 - 367	-90 to -52
2021-2023	22	5,805	37 - 598	-89 to -43
Total	**53**	**17,267**		

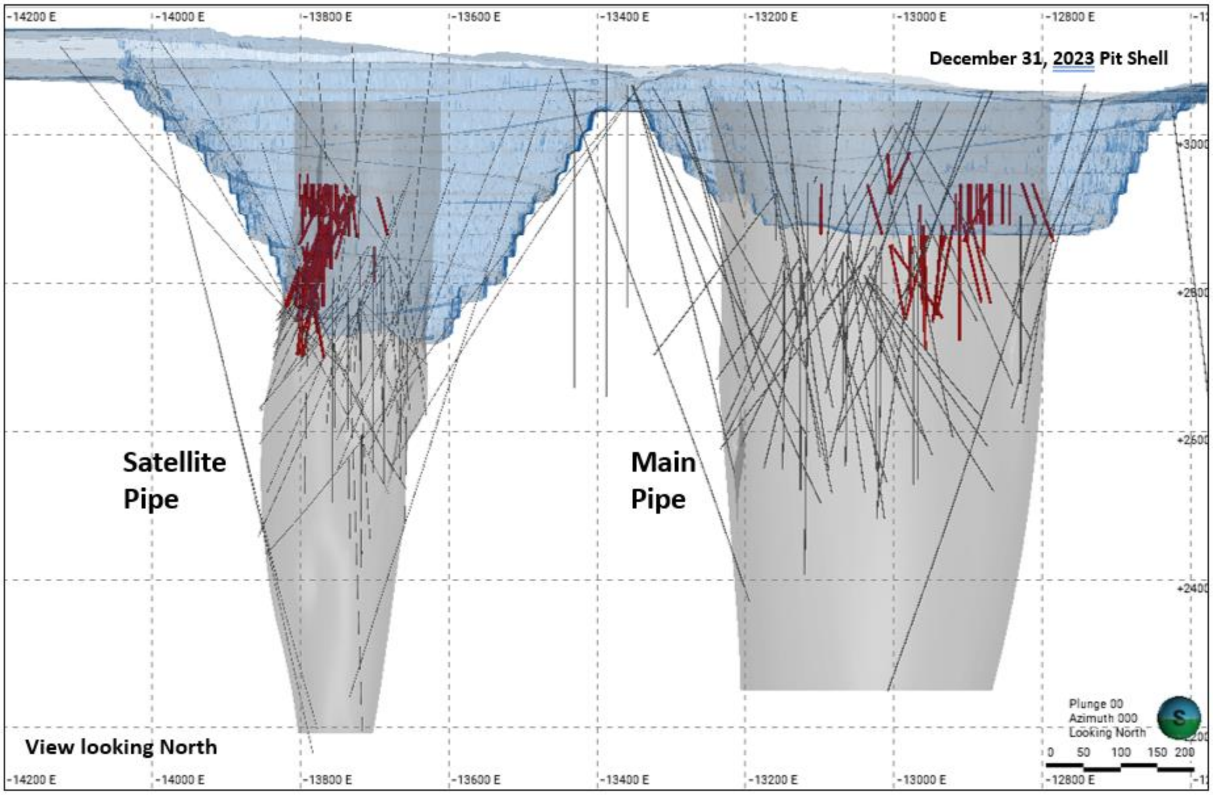
10.3.6 Letšeng Diamonds Main Pipe RC Percussion Delineation Drilling Programs, 2014 – 2016 and 2020

The geology delineation RC percussion drilling on the Main Pipe carried out by Letšeng Diamonds over 2014 – 2020 was a grand total of 39 holes for 3,202 m (Table 10-4, Figure 10-1).

Table 10-4: Letšeng - Main Pipe RC percussion delineation drilling programs, 2014 - 2020

Year	No. Holes	Metres Drilled	Lengths, m	Dips, degrees
2014-2016	28	2,012	55 - 133	-90 to -65
2020	11	1,190	38 - 200	-90 to -55
Total	**39**	**3,202**		

Source: Letšeng Diamonds



Source: SRK (2024)

Notes: Core hole traces in grey, RC percussion hole traces in red

Figure 10-1: Map showing the distribution of Letšeng Diamonds Main and Satellite Pipe 2014 – 2023 delineation core and RC percussion drilling

10.3.7 Letšeng Diamonds Satellite Pipe RC Percussion Delineation Drilling Programs, 2014 – 2016 and 2020

The geology delineation RC percussion drilling on the Satellite Pipe carried out by Letšeng Diamonds over 2014 – 2020 was a grand total of 80 holes for 5,586 m (Table 10-5).

Table 10-5: Letšeng - Satellite Pipe geology delineation RC percussion drilling programs, 2014 - 2016 and 2020

Year	No. Holes	Metres Drilled	Lengths, m	Dips, degrees
2014-2016	62	3,987	5 - 135	-90 to -60
2020	18	1,599	31 - 151	-90 to -60
Total	**80**	**5,586**		

Source: Letšeng Diamonds

10.3.8 Letšeng Diamonds Geotechnical and Geohydrology Drilling Programs, 2011 - 2022

Three focused geotechnical and geohydrology drilling programs were carried out by Letšeng Diamonds on and around the Main and Satellite Pipes over 2011 to 2022 for a grand total of 28 holes for 4,779 m (Table 10-6 and Table 10-7).

Table 10-6: Letšeng - Main Pipe geotechnical-geohydrology core drilling programs, 2017 and 2022

Year	No. Holes	Metres Drilled	Lengths, m	Dips, degrees
2017	1	401	401	-80
2022	2	367	83 - 284	-50
Total	**3**	**767**		

Source: Letšeng Diamonds

Table 10-7: Letšeng - Satellite Pipe geotechnical-geohydrology core drilling programs, 2011 - 2012 and 2021

Year	No. Holes	Metres Drilled	Lengths, m	Dips, degrees
2011-2012	4	1,645	151 - 601	-90 to -51
2017	2	851	403 - 408	-90
2021	19	1,516	44 - 183	-69 to -44
Total	**25**	**4,012**		

Source: Letšeng Diamonds

10.4 Drilling Sampling Summary

10.4.1 RTZ Exploration Core Drilling

Reportedly, the RTZ exploration drilling program core was sampled exclusively for mineralogy (Venmyn Rand, 2012). No further information has been obtained by SRK.

10.4.2 De Beers Drilling

No information has been obtained by SRK.

10.4.3 Letšeng Diamonds Historical Geology Delineation Core Drilling, CAM 2005 – 2006

Venmyn Rand (2012) reported that 2005 – 2006 geology delineation drilling program core samples were collected from the Satellite Pipe and various “facies” of the Main Pipe, and sent to Rhodes University for thin section analysis. SRK has not obtained or verified the sampling details.

10.4.4 Letšeng Diamonds Geology Delineation Core Drilling Sampling, Gem Diamonds 2006 Onwards

Drill core from the Main and Satellite Pipes 2005 – 2006, 2011 – 2014, 2017 – 2018 and 2021 – 2023 geology delineation campaigns and geotechnical programs were variously sampled by SRK QP geologists for petrography, indicator mineral analysis and microdiamond studies (Table 10-8 and Table 10-9). Letšeng personnel collected samples for density determinations (Table 10-8 and Table 10-9).

Drill core petrography, indicator mineral analysis and groundmass spinel compositions, microdiamond and density sampling are further reported in Section 11.

Table 10-8: Letšeng Diamonds Main Pipe drill core petrography, indicator mineral analysis, density and microdiamond sampling summary

Main Pipe	No. of Drill Holes Sampled	No. of Samples	Total Sampled Interval, m	Sampling Intervals, m	Total Sampled Mass, kg	Sample Mass Range, kg
Petrography	65	1,621	-	-	-	-
Indicator Mineral Analysis	14	27	541.60	15.00 - 27.00	275.14	10.00 - 10.46
Density	62	3,385	-	-	-	-
Microdiamonds	23	524	1537.89	0.89 - 6.64	8,509.98	13.64 - 18.36
Total	**164**	**5,557**	**-**	**-**	-	-

Source: SRK (2024)

Notes: Density samples include kimberlite and country rock

Table 10-9: Letšeng Diamonds Satellite Pipe Drill core petrography, indicator mineral analysis and density sampling summary

Satellite Pipe	No. of Drill Holes Sampled	No. of Samples	Total Sampled Interval, m	Sampling Intervals, m	Total Sampled Mass, kg	Sample Mass Range, kg
Petrography	45	1,198	-	-	-	-
Indicator Mineral Analysis	11	22	440.00	20.00	226.60	10.06 - 10.76
Density	49	2,876	-	-	-	-
Total	**105**	**4,096**	**-**	**-**	-	-

Source: SRK (2024)

Notes: Density samples include kimberlite and country rock

10.5 SRK Comments

The core drilling and sampling that was undertaken on the Main and Satellite Pipes with SRK's involvement is considered as representative and has allowed for the development of robust geology models in the areas that have been classified at an Indicated level.

All geology development and sampling exercises undertaken on the drill cores were completed using SRK SOPs. SRK QPs reviewed every core hole that was completed by Letšeng. SRK QP geologists did not collect drill core density samples, that was carried out by Letšeng.

Note - the only core drilling that was not completed to SOP were the vertical holes that were not surveyed downhole.

SRK did not develop SOPs or review the geology of the RC percussion holes.

11 Sample Preparation, Analyses, and Security

11.1 Sample Preparation, Analyses, and Security

11.1.1 SRK Sample Preparation, Analyses and Security SOPs

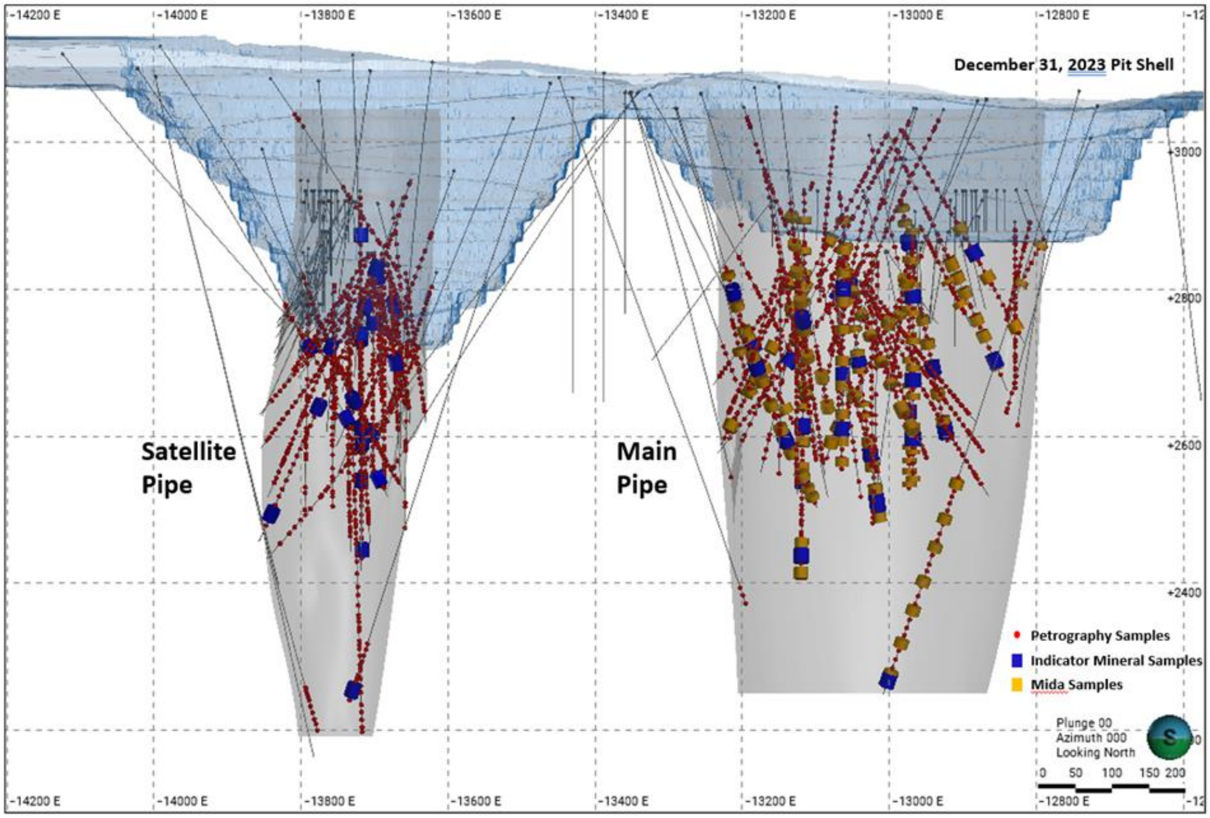
Sampling of kimberlite drill core for petrography, indicator mineral analysis, groundmass spinel compositions, and microdiamonds (Figure 11-1) was carried out by SRK QP geologists and assisted by Letšeng geologists, that followed SOPs sample and security protocols developed by SRK.

SRK has also developed SOPs for open pit petrography sampling and microdiamond sampling with required security protocols.

Independent contractors and laboratories prepared thin sections and slab samples and carried out heavy mineral separation, completed electron microprobe analysis on groundmass spinel, and processed kimberlite from microdiamonds. The following service providers and consultants were used for sample preparation and analysis:

- Precision Petrographics Ltd (Canada) and Vancouver Petrographics Ltd (Canada): thin section and polished slab preparation.
- Gaudet Petrology (Canada): spinel microprobe analyses at Dalhousie University, Halifax, Canada.
- De Beers Kimberley Microdiamond Diamond Laboratory (KMDL) located in South Africa was used for processing of core and pit samples for microdiamond recovery.
- Saskatchewan Research Council Geoanalytical Laboratories (Canada) (“SRC”): indicator mineral abundance studies and microdiamond treatment.

Core and pit floor samples were secured in white plastic bags and placed within 20 litre plastic pails and sealed with security cable ties (microdiamond samples only). Large microdiamond samples collected from the ore piles were collected in 1 tonne ore bags. All samples were stored on site in a secure facility. The chain of custody paperwork was completed and submitted with the sample shipment, in a closed and locked trucking van.



Source: SRK (2024)

Figure 11-1: Petrography, indicator mineral and Mida sample location map

11.1.2 Drill Core Petrography Samples

Representative drill core petrography samples were collected every 5 to 10 m within all kimberlite intervals drilled. The samples were typically 20 cm in length of the drill hole number in depth, and 'way up' direction were labeled on the core samples.

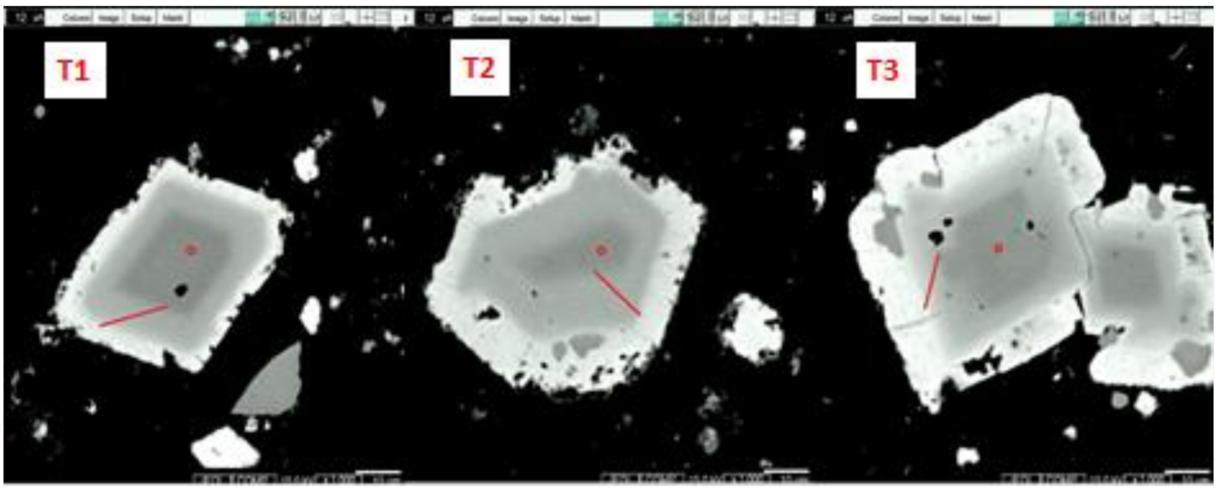
Each consignment of samples was shipped under Chain of Custody documentation that included:

- Completed laboratory submission form
- Detailed sample list
- Delivery note
- Laboratory work order confirmation

Samples were examined and classified at the SRK Diamond Lab located in North Vancouver, Canada. Thin sections were examined with the aid of a Nikon Pol petrographic microscope together with the associated drill core slabs with a Nikon SMZ1000 binocular microscope – all samples were reviewed with spatial reference information and viewed in the 3D geology model. Currently, all slabs and thin sections are stored at the SRK facility in North Vancouver and will be shipped back to Lesotho in March 2024.

11.1.3 Groundmass Spinel Mineral Chemistry Samples

Samples selected for groundmass spinel mineral chemistry analysis were prepared as polished thin sections by Vancouver Petrographics Ltd and Precision Petrographics Ltd. Inspection of secondary electron backscatter images enabled the selection of three appropriately sectioned groundmass spinel grains in each thin section for compositional analysis (see example in Figure 11-2), following methods described by Roeder and Schulze (2008). Compositions were determined for seven-point core-to-rim traverses using wavelength dispersive methods on the JEOL JXA-8200 Electron Probe Micro-Analyzer (EPMA) housed at Dalhousie University.



Source: SRK (2019)

Notes: Grey-scale backscatter images with analysis traverses T1, T2 and T3 (red) for three chromite grains in sample MAIN K1, Hole M13-024-GE at 208.10 m depth.

Figure 11-2: Backscatter images of three groundmass spinel grains

SRK Consulting monitored data quality using cation proportions and stoichiometric methods as described in Droop (1987). Only 3% of 7,788 spinel analyses collected from 376 thin sections were rejected. The rejection rate falls in the low to typical range for oxide-mineral compositions determined by microprobe analysis.

An investigation and interpretation of groundmass spinel compositions (SRK, 2019) revealed that:

- Substantially similar chromite core-to-rim compositions occur across distinct geological units in both the Main and Satellite pipes (i.e., chemical overlap occurs).
- A late hydrothermal overprint caused substantive secondary redistribution of Mn, Fe, Mg, and Ti in groundmass spinel grains at both the Main and Satellite pipes, such that primary-magmatic chromite compositions have been modified. SRK (2019) speculatively related the late flux of mobile cations to serpentinization of olivine during late fumarole activity.

These results implied that groundmass spinel compositions could not be used to confidently differentiate distinct geological units in the Main and Satellite Pipes, leading to termination of the groundmass spinel project in November 2019.

These samples were obtained from the petrographic samples, that were collected and stored in a secure facility prior to shipment.

11.1.4 Indicator Mineral Analysis Study

Individual samples of approximately 10 kg were collected from various rock types directly from drill core boxes and placed in plastic containers with the sample depth, drill hole number, weight, and rock type recorded.

The samples collected for this exercise were intended to be processed for heavy mineral abundance (HMA) and composition studies. The HMA work was completed; however, the composition work was not undertaken.

Sample pails were sealed and stored on-site in a secure facility before shipping.

A report was completed on the HMA by Scott-Smith (2016). Samples were collected from multiple rock types from the Main and Satellite Pipes and were submitted for processing to the SRC. This preliminary work recovered indicators from all samples submitted – note that indicator minerals are rarely observed in the majority of rock types at Letšeng (Scott Smith, 2016). It was concluded that abundances are unique for different rock types and that this could potentially be used as a tool moving forward to support the classification of various phases of kimberlite.

11.2 Microdiamond Sampling Campaigns and Facilities Used

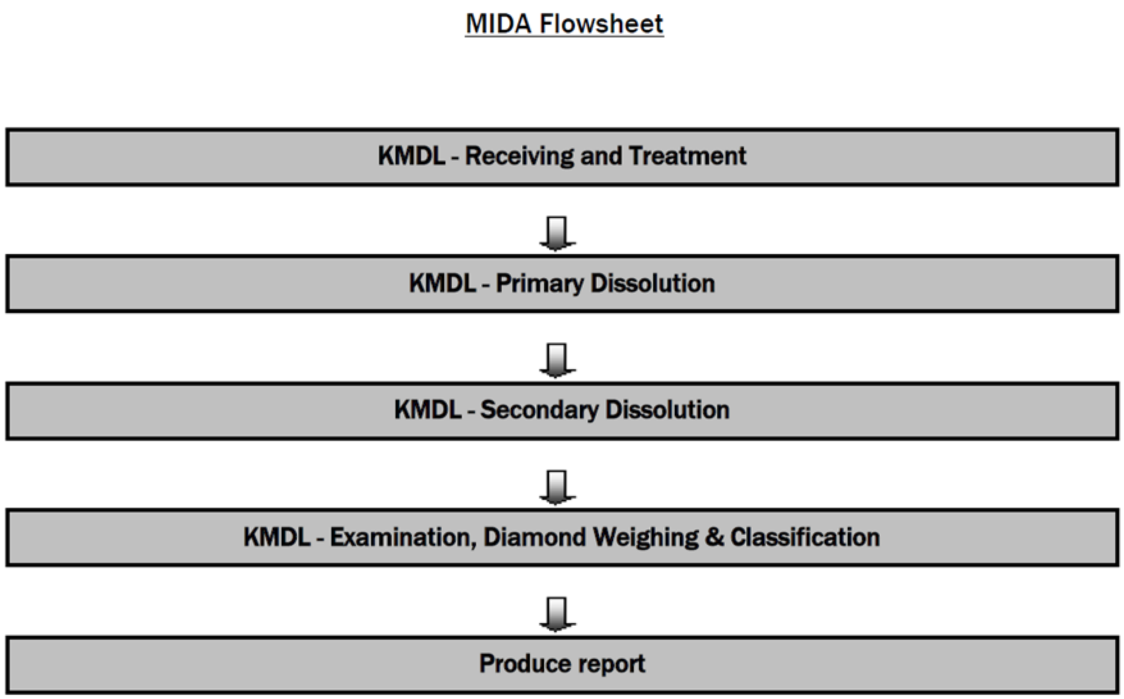
11.2.1 Letšeng Diamonds Microdiamond Sampling Campaigns Overview

In 2009, Gem Diamonds started to investigate whether microdiamond technologies could be applied to the low-grade Letšeng kimberlites and to develop microdiamond sampling and related SFDs modeling procedures that could support a variety of objectives, including grade verification/assurance and potentially also resource delineation. It was realised from the outset that microdiamonds may have no direct or genetic relationship to the large, valuable Type II diamonds that underpin economic outcomes at Letšeng, however, the work was undertaken as this is standard procedure at diamond mines globally.

The related evolution of microdiamond sampling campaigns at Letšeng is summarised below. In summary, four microdiamond sampling campaigns have occurred:

- 2009: Test-phase in-pit sampling of the Main and Satellite Pipes
- 2014 – 2015: In-pit sampling of benches at the Main and Satellite Pipes
- 2019: Sampling of Main pipe 2005 – 2018 drill core
- 2019: Sampling of Satellite Pipe stockpile material

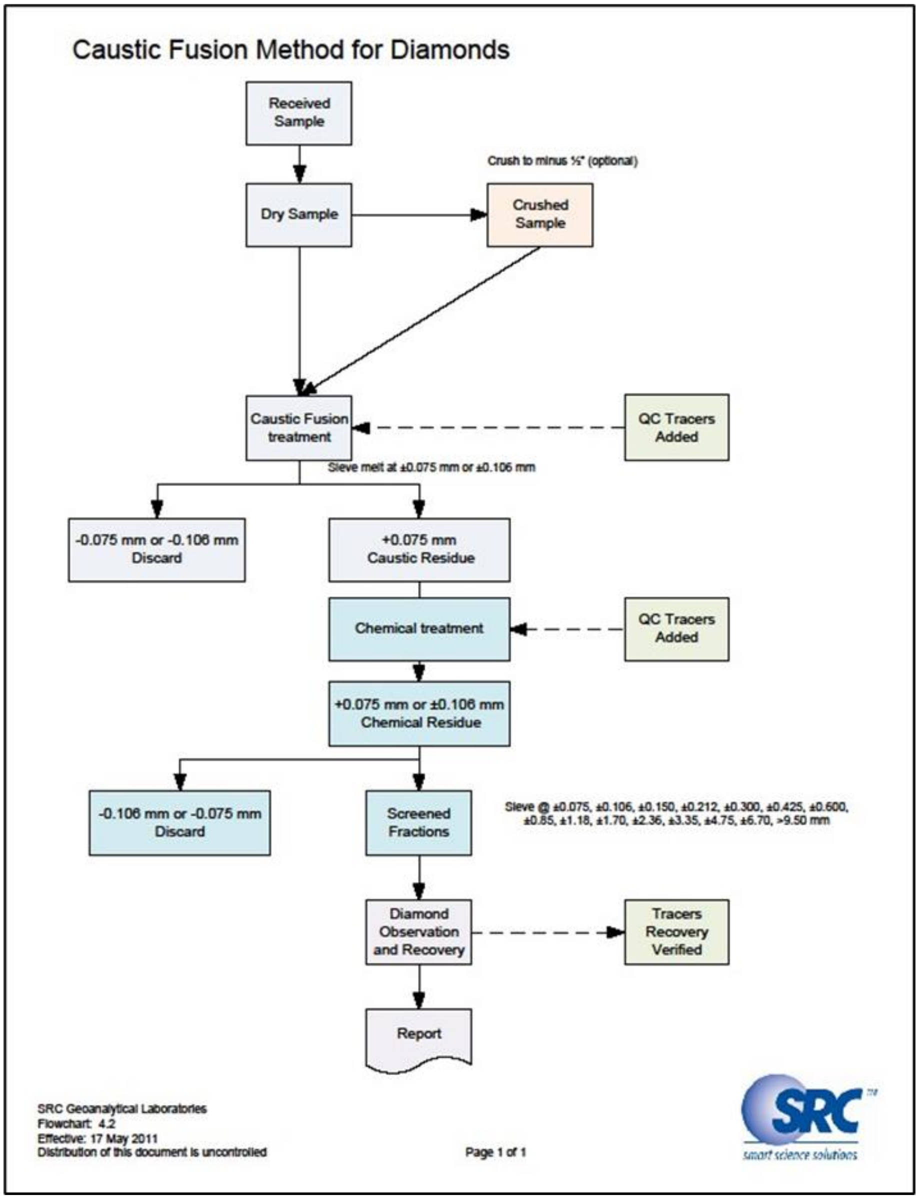
Two labs were utilised for microdiamond treatment – these included the De Beers Kimberley Microdiamond Laboratory ("KMDL") that is an acid-digestion process and the flow sheet is illustrated below in Figure 11-3 Samples from the 2009 program were submitted to KMDL.



Source: De Beers (2009)

Figure 11-3: KMDL Microdiamond acid-digestion analysis flow sheet

Microdiamond samples collected from the 2014 – 2015 and 2019 campaigns were submitted to the SRC for caustic fusion processing. The analysis flow sheet is presented below in Figure 11-4. Drill core samples were only collected from the Main Pipe. The samples submitted from the Satellite Pipe were collected from an ore stockpile.



Source: SRC website (2023)

Figure 11-4: Saskatchewan Research Council microdiamond caustic fusion analysis flow sheet

11.2.2 Microdiamond Sampling Campaigns

<u>2009: In-pit sampling of the Main and Satellite Pipes - KMDL</u>

The 2009 microdiamond campaign was completed by Letšeng and this program targeted lithologies in the Main and Satellite Pipes, with cumulative sample weights for each pipe exceeding 1,000 kg. The samples were processed in 20 kg aliquots at the KMDL in South Africa:

- Main Pipe: 53 aliquots; 1,060.96 kg

- Satellite Pipe: 63 aliquots; 1,268.93 kg

2014 – 2015: In-pit sampling of mining benches at the Main and Satellite Pipes - SRC

Gem Diamonds initiated a new microdiamond sampling campaign in March 2014 which continued through to June 2015. The campaign targeted systematic microdiamond sampling of blast patterns in pre-mining benches of distinct lithologies in the Main and Satellite Pipes, with target sample weights approaching between about 500 kg or 1,000 kg and the samples consisted of the following:

- Main Pipe pit: 4 samples; 3,065.4 kg
- Satellite Pipe pit: 2 samples; 2,146.3 kg

The samples were processed at the Saskatchewan Research Council (“SRC”).

2019: Sampling of Main Pipe 2005 – 2018 Drill Core - SRC

An SOP for drill core microdiamond sample analyses was designed by SRK Consulting for this campaign. Microdiamond sampling of drill cores at Letšeng commenced in May 2019. Selected Main Pipe 2005 to 2018 drill cores were sampled for microdiamonds by the SRK QP geologist together with the Letšeng geology team.

The May 2019 Main Pipe campaign targeted systematic microdiamond sampling over consistent intervals within the Main Pipe in 22 drill cores extending to approximately 800 m below the original surface expression of the pipe. The drill core was sampled as four continuous 16 kg samples, each totaling 64 kg contiguous units. HQ and NQ core were collected,

- Main Pipe: 524 aliquots; 8,310 kg

The Main Pipe drill core microdiamond samples were processed at the SRC.

2019: Sampling of Satellite Pipe Stockpile Material- SRC

Satellite Pipe drill cores have not been sampled for microdiamond analysis by SRK. The Satellite Pipe stockpile sampling exercise was implemented to confirm the low-count results obtained from the 2015 microdiamond sampling campaign. An SOP for stockpiled kimberlite microdiamond sample analyses was designed by SRK Consulting. The sampling of this material was completed by the SRK QP with the Letšeng geology team from the SVK and NVK2 rock types. Samples were collected in 1 tonne ore bags.

The 2019 Satellite Pipe NVK Stockpile microdiamond sampling comprised:

- Four samples, total 2,280.29 kg reported collected:
  - NVK2 phase two samples: 1,209.61 kg
  - SVK phase two samples: 1,070.68 kg

11.2.3 Summary of Microdiamond Sampling Results

2009 Microdiamond Sampling Results

Microdiamond recoveries for the 2009 sampling campaign are summarised in Table 11-1. It is apparent that the sampled Main Pipe lithologies carry approximately four times more microdiamonds per unit weight than the sampled lithologies from the Satellite Pipe. Remarks contained in Ferreira (2014) suggest that the results were interpreted in 2009 as not supporting the continuation of microdiamond sampling at Letšeng.

Table 11-1: Summary of 2009 Microdiamond sample results (counts per sieve)

Pipe	YYYY	Ali-quots	Aliquot Wt (kg)	Facility	Weight (kg)	74+	104+	150+	212+	300+	500+	1000+	2000+	Totals	Sum 104+ per 100 kg	Source
Main	2009	53	20	KMDL	1060.96	46	37	19	11	3	2	0	0	118	6.8	SSPI 2015
Satellite	2009	63	20.1	KMDL	1268.93	9	13	7	3	0	0	0	0	32	1.8	SSPI 2015

Source: Scott Smith (2015)

2014/2015 Microdiamond Sampling Results

Microdiamond recoveries for the 2014/2015 sampling campaign are summarised in Table 11-2:

- Main Pipe: 4 samples; 3,065.4 kg processed; 991 stones recovered.
- Satellite Pipe: 2 samples; 2,146.3 kg processed; 90 stones recovered.

The results were interpreted as supporting future microdiamond and spatially correlated microdiamond sampling campaigns for the Main Pipe (Ferreira, 2014; Mineral Services Canada, 2017). Microdiamond recoveries from the sampled Satellite Pipe lithologies were confirmed to be six times lower than for Main Pipe lithologies, though were nevertheless considered indicative of a coarser SFD for the sampled Satellite Pipe lithologies (Mineral Services Canada, 2017).

Table 11-2: Summary of 2014/2015 Microdiamond sample results (counts per sieve)

Pipe	YYYY.MM	Samples	Facility	Weight (kg)	75+	106+	150+	212+	300+	425+	600+	850+	1180+	1700+	Sum	Sum106+ /100 kg	Source
Main	2014.03	MiDA_01A	SRC	1011.39	208	87	52	33	7	2	1	1	0	0	391	18.1	MSC 2017
Main	2014.03	MiDA_01B	SRC	1011.42	139	71	46	18	4	1	0	0	0	1	280	13.9	MSC 2017
Main	2015.04	MiDA_03	SRC	560.3	90	48	21	12	5	1	0	0	1	0	178	15.7	MSC 2017
Main	2015.06	MiDA_04	SRC	482.25	74	36	21	6	2	2	1	0	0	0	142	14.1	MSC 2017
Satellite	2014.11	MiDA_02	SRC	1111.3	10	9	13	1	2	2	1	0	0	0	38	2.5	MSC 2017
Satellite	2015.06	MiDA_05	SRC	1035	25	16	3	4	0	1	0	3	0	0	52	2.6	MSC 2017

Source: Mineral Services Canada (2017)

2019 Microdiamond Sampling Results

Microdiamond recoveries for the 2019 sampling campaign are summarised in Table 11-3. The 2019 microdiamond count rates are similar to those obtained in the 2014/15 sampling campaign and reconfirm six times lower microdiamond counts from Satellite Pipe lithologies relative to Main Pipe lithologies.

Table 11-3: Summary of 2019 Microdiamond sample results (counts per sieve)

Pipe	YYYY.MM	Ali-quots	Aliquot Wt (kg)	Facility	Weight (kg)	75+	106+	150+	212+	300+	425+	600+	850+	1180+	1700+	Sum	Sum106+ /100 kg	Source
Main	2019.05	524	15.9	SRC	8310.25	1642	942	415	174	67	18	7	3	3	0	3271	19.6	SRC 2019a
Sat-SVK	2019.05	131	8.5	SRC	1113.85	23	20	13	3	1	1	1	0	0	0	62	3.5	SRC 2019b
Sat-NVK	2019.05	133	8.5	SRC	1125.2	29	12	6	4	4	1	0	1	0	0	57	2.5	SRC 2019c

Source: Saskatchewan Research Council (2019a, 2019b, 2019c)

Table 11-4 presents the breakdown of microdiamond counts by lithological domain in the Main pipe. The available data represent 524 samples at a nominal 16 kg weight collected from 22 drill cores, with all excepting 301 microdiamonds assigned to four major kimberlite phases (K1A, K1B, K2, and K6) and additional minor kimberlite phases (K1C, K2D and K1S-K1B/K1A).

Table 11-4: 2019 Microdiamond Results for Main Pipe by kimberlite phases

Main Pipe Phase	Weight (kg)	75+	106+	150+	212+	300+	425+	600+	850+	1180+	1700+	Total
K1A	1510.4	237	152	81	31	16	6	1	0	1	0	525
K1B-1	1206.65	248	127	50	24	4	0	1	0	0	0	454
K1B-2	622.65	121	70	47	18	10	3	0	0	0	0	269
K1C	110.3	19	8	5	3	1	0	0	0	0	0	36
K2	2116.75	495	300	123	50	18	2	2	1	1	0	992
K2D	223.25	40	20	17	2	1	0	0	0	1	0	81
K6	1142.55	258	142	44	18	10	4	0	1	0	0	477
RFW-K1S-K1B-1s	332.5	38	27	7	7	0	0	1	1	0	0	81
RFW-K1S-K1As	173.5	27	13	7	5	1	1	1	0	0	0	55
Unclassified	871.7	159	83	34	16	6	2	1	0	0	0	301
Totals	8310.25	1642	942	415	174	67	18	7	3	3	0	3271

Source: SRK (2023)

11.3 Historic Bulk Sampling for Diamond Grade

11.3.1 Bulk Sampling Methods and Procedures

Historic bulk sampling of surface pits and underground tunneling was completed by RTZ (1968-1972) and De Beers (1973-1980) and is summarised in Section 6 and reported in Venmyn Rand (2012).

Letšeng Diamonds did undertake a bulk sampling exercise of the De Beers Stockpile in 2004 when under ownership by CAM. The material was processed through Alluvial Ventures Pan Plant. Results of the Letšeng Diamonds De Beers Stockpile 2004 bulk sample are summarised in Table 6-2:

- De Beers Stockpile total 60,364 t; 1,163 cts; 1.93 cpht

11.3.2 Letšeng Diamonds Discrete Production Bulk Samples, 2005 Onwards

Discrete production bulk samples for the Main and Satellite pipes are presented in Table 11-5.

Table 11-5: Discrete production bulk samples for the Main and Satellite Pipes, 2005 – 2010

Pipe	Facies	Years	Mined quantity (tonnes)	Carats	Average DMS Recovery Grade (cpht)
Satellite	SVK	2005 – 2009	679,048	15,581	2.29
	NVK	2005 – 2007	1,627,025	30,081	1.85
Main	K South	2009 – 2010	1,754,195	20,935	1.19
	K North	2007 – 2010	2,749,836	39,643	1.44

Source: Venmyn Rand (2011)

11.4 Historical Satellite Pipe Geotechnical Pit Samples

Venmyn Rand (2012) reported that over 2005 – 2006, seven Satellite Pipe geotechnical pit samples were collected and submitted to Rocklab, an accredited rock laboratory in Pretoria, South Africa, where uniaxial compressive strength (UCS), Young's modulus (E), Poisson ratio and density were measured. This information was used for a slope stability assessment. No further information has been obtained by SRK. Current geotechnical sampling data is available and discussed in Section 16.

11.5 Specific Gravity Data

11.5.1 Letšeng Diamonds Historical Density Data, 2005 Process Plant 1

Venmyn Rand (2012) stated that densities for all major kimberlite "facies", both weathered and fresh, were initially measured in July 2005 by Minopex in Plant 1 during processing. Reportedly, core sample densities for all rock types and "facies", both weathered and fresh, were measured for verification and quality control purposes by Letšeng.

It should be noted that there are no historical dry density measurements.

11.5.2 Letšeng Diamonds Wet Density Data, 2009 – 2016

Venmyn Rand (2012) reported that in 2009 Letšeng implemented a program of regular density measurements of kimberlite "facies", obtained from blast rock grab samples collected by the pit geologist from a number of blasts ahead of processing (Table 11-6). The locations of the blast holes in the 2009 geological models were used as "facies" control. By linking the location of the blast number with the "facies" in the geological model, density was determined for all "facies" except the Main Pipe "K6 facies", which was based on prior drill core determinations.

Density measurements were calculated as a simple average of available measurements (Venmyn Rand, 2012). Venmyn Rand (2012) stated that an improved density model incorporating both drill core and in-pit sample determinations was required.

There is no record of dry density determinations pre-2016.

Table 11-6: Historical Main and Satellite Kimberlite "Facies" Average Densities, 2009 - 2010 (Venmyn Rand, 2012)

Resource	"Facies"	No. Measurements	Average SG
Satellite Pipe	SVK	14	2.55
	NVK	12	2.52
Main Pipe	K North	53	2.52
	K South	26	2.52
	K4	8	2.57

Source: Letšeng Moisture_content_Site-Review_preliminary.docx (2011)

Letšeng advised SRK that resource tonnages had traditionally been reported as 'wet' tonnes, incorporating the in-situ moisture, until end 2016. Correspondingly, the grade values attached to each of the kimberlite phases would incorporate such moisture laden in the kimberlite. The different kimberlite phases at Letšeng have differing porosity and would thus incorporate water to different degrees.

11.5.3 Letšeng Diamonds Dry Density Data 2017 Onwards

Letšeng advised SRK that in quest of determining moisture influence on the resource tonnages, the dry mass of rock samples has routinely been measured as of 2017. The moisture content percent averages have been grouped by "simplified" kimberlite rock types.

Letšeng geologists collect drill core density samples every 10 m in kimberlite and every 20 m in country rock. Letšeng geologists collect representative open pit kimberlite blast rock density grab samples, with 10 to 15 samples being collected per blast.

Each sample is given a unique number and its location is recorded. A water displacement method is used to measure wet density, and the sample is then oven-dried to obtain dry density, accurate to 1 g. A weighted average density is calculated for the representative blast rock samples.

11.6 Quality Assurance and Quality Control Programs

11.6.1 Letšeng Diamonds 2006 – Present

- All core drilling and sampling programs after 2013 were planned and optimized with SRK input.
- The collar position, dip, and azimuth of each drill hole was verified by the Letšeng geology team by obtaining accurate readings of the drill mast using a handheld Differential GPS (position and azimuth) and a clinometer (dip). Upon completion of each hole, the collar was re-surveyed and recorded in the final drill hole database.
- Every core hole drilled by Letšeng was reviewed by SRK and rock type identification and classification were confirmed on site or later following a petrographic investigation.
- Core sampling procedures for petrography and the spinel composition study were outlined and verified by SRK during multiple site visits. SRK collected most of these samples and worked together with the Letšeng geology team to ensure consistent sampling and recording of the sample details.

- Core sampling procedures for indicator mineral analysis (composition and abundance studies) were developed by SRK and these samples were collected while SRK was on site. SRK collected the samples together with the Letšeng geology team and confirmed all relevant sample details.
- Microdiamond sampling campaigns with the exception of the 2009 exercise were developed and supervised by Dr. Barbara Scott Smith, Dr. Jock Robey, and SRK. SRK completed all the sampling of the latest 2019 program for MIDA and all cores and ore pile sampling was conducted together with the Letšeng geology team.
- SRK was present on site and observed the density measurement process undertaken by Letšeng. The methodology and equipment used is consist with standard industry practices. Letšeng sent 102 core samples from Main and Satellite Pipes to Rock Mechanics Laboratory cc for independent density measurements, results of which where received in July 2022.

11.7 SRK Comments

In the QP’s opinion, the sampling preparation, security, and analytical procedures used by Letšeng are consistent with generally accepted industry standard practices and are therefore adequate to support the resource classification presented in this report.

Traditional kimberlite bulk sampling for grade determination by large diameter drilling (LDD) or pitting and trenching or underground tunneling was not undertaken by Letšeng due to the very low grade of the kimberlite.

The spinel composition study undertaken was not successful in discriminating separate phases of kimberlite and should not be continued on future samples.

The indicator mineral analysis work was initiated with the processing of the material to determine the heavy mineral abundances of the various rock types and this information did appear to be useful in separating kimberlite phases; however, the compositional work on these indicators was postponed.

The MIDA sampling conducted revealed that the majority of rocks at Letšeng have extremely low microdiamonds and therefore this tool cannot be used as on other diamond mines globally for discriminating different phases of kimberlite or to predict the characteristics of the macrodiamond population.

The investigation of the petrographic samples (core and pit samples) and associated polished slabs were the key data set that was used to establish the various phases of kimberlite present within the Main and Satellite Pipes and to develop the emplacement sequence of the kimberlites.

12 Data Verification

12.1 Verifications by Letšeng

Venmyn Rand (2012) reported the following verifications by Letšeng Diamonds:

- For the 2005 – 2006 geology delineation core drilling program, topographical controls were considered sufficient, and the quality of all surveys was considered good.
- An associate of Venmyn Rand, Mr. Anthony Bloomer, independently reviewed the logging of selected 2005 – 2006 core holes.
- Venmyn Rand independently verified the locations of drill holes against the 2009 geology model 3D wireframes and the volumes calculated by bench for each kimberlite "facies" and were satisfied the results were accurate.
- Core sample densities for all rock types and "facies", both weathered and fresh, were measured for verification and QC of the initial density measurements made in 2005 in Plant 1.
- A mineral resources audit process with independent verification and signoff was implemented by Gem Diamonds in 2006.

In 2015, Letšeng introduced a Diamond Accounting and Production Reporting System. These information tracking systems were designed to ensure data integrity throughout the operation from geology, to mining, processing and recovery. The Production Reporting System tracks daily and monthly production results against expected and planned metrics and monitors Resource performance.

Since 2016, Letšeng has had a functional Mineral Resource Management Audit Committee that reviews and verifies the following:

In 2015, Letšeng introduced a Diamond Accounting and Production Reporting System. These information tracking systems were designed to ensure data integrity throughout the operation from geology, to mining, processing and recovery. The Production Reporting System tracks daily and monthly production results against expected and planned metrics and monitors Resource performance.

Since 2016, Letšeng has had a functional Mineral Resource Management Audit Committee that reviews and verifies the following:

- Drilling progress and results.
- Results of discrete production samples and controlled bulk samples.
- Monitors grade control activities and protocols.
- Diamond recovery data, including Size, Grade and Value Frequency Distributions.
- Changes to diamond damage statistics that could affect sales results and/or the sampling database informing Resource prices.
- Mine surveying results compared against an independent surveyor's year-end survey report.

- Quarterly and year-to-date reconciliations of Absolute Adherence to mine plan.
- Comparison of Resource block model depletions, plants' recorded tonnes treated and survey volumes, triggering investigations where variances are beyond ±2%.
- Resource model changes and updates from in-pit mapping, feeding to into short-term mine planning.
- Treatment and Recovery plants' performance against set KPIs.
- Performance assessment of the Recovery performance through the off-line auditing of tailings.
- Ongoing quality assurance by the Treatment laboratory to ascertain various operational parameters against set norms and standards.
- Results of work by independent consultants.

Environmental and social performance and compliance is being externally audited and monitored. The most recent external audits and monitoring reports include:

- A SHE audit undertaken by RMI Legal Services in August 2023.
- A compliance audit of the approved SEMP conducted by Shangoni Management Services with report issued in December 2023.
- Water quality monitored biannually by GroundTruth with a report issued in September 2023.

12.2 Verifications by SRK

12.2.1 Site Visits and Meetings

Geology and Resource Model Development Site Visits, Hetman (2019, 2020, 2022, 2023)

Casey Hetman's 2019 and 2020 site visits included a review of the Main Pipe open pit geology and Main and Satellite Pipes drill cores. Selected drill cores were sampled for microdiamond analyses and Mantle Mapper studies. He also conducted a site visit to review the discrete production sampling of the NVK in Satellite Pipe and the geology of the Satellite Blow, and visited Gem Diamonds' sales office in Antwerp to review the tender process and examine diamonds from the January 2020 sale. Site visits in 2022 and 2023 involved examination of the Satellite Pipe geology in the open pit and in the 2021-2023 drill cores, review of the core logging, sampling and photographing procedures, and discussions on the Satellite Pipe geology with the Letšeng geology team. The QP confirmed that the SRK sampling SOP was being implemented. All kimberlite/basalt contacts and end of hole depths were checked and the drill cores were logged to verify kimberlite unit and domain identification and assess geological continuity.

Geology and Resource Model Development Site Visit – Webb (2022)

Kimberley Webb conducted a site visit in 2022 to inspect delineation drilling in the Main Pipe and related drill core and data handling procedures, to examine the geology of Main Pipe in the open pit and in the 2021-2022 drill cores, and to review the core logging, sampling and photographing procedures. During the site visit numerous discussions on the Main Pipe geology were held with the Letšeng geology team. The QP confirmed that the SRK sampling SOP was being implemented. All kimberlite/basalt contacts and end of hole depths were checked and the drill cores were logged to verify kimberlite unit and domain identification and assess geological continuity.

Mineral Resources Life of Mine Site Visit, Revering (2019)

Cliff Revering conducted a site visit to examine Letšeng Mine operations in 2019. The site visit focused on review of current and historical production data and diamond sales information, production reconciliation, and current LOM plans.

The geology of the Letšeng Mine was also reviewed by examination of drill core and kimberlite exposures within the Main Pipe pit. The Satellite Pipe pit was not accessible during this timeframe, therefore direct inspection of kimberlite exposures within the Satellite Pipe was not possible. Inspection of Plant 2 and the Plant 2 diamond recovery area was also conducted.

Mining and Reserves Site Visit, Ebrahimi (2022)

Anoush Ebrahimi conducted a site visit to examine Letšeng Mine operations in 2022. The visit focused on review of the current mining operation and mine planning process, infrastructure, designs, methods and cost, and collection of the current mine plan data.

Based on the inspections and reviews of the mining operations and reserves, infrastructure, designs, methods, and costs carried out, the following site verifications were made:

- The open pits and waste dumps were visually inspected for adherence to design, for pit wall performance and for the safety and productivity of operations. General observations from the open pit inspection is that pit wall slopes were performing well with some walls performing very well and other walls having bench scale geotechnical issues that were being well managed.
- Haul road and traffic management structures were well designed and maintained.
- Active mining areas appeared to have sufficient width and space to maintain a safe and productive drill, blast and dig cycle.
- The inspection of the waste rock stockpile area included reviewing the existing stockpiles and the area where the stockpiles will develop into over time. The mine waste rock stockpiles appeared to be getting developed in safe lift heights and over top of gently sloping and what appeared to be good quality foundation materials.

In addition, there was the objective of collecting data from site related to mine design and cost estimation. Letšeng technical personnel provided SRK with an extensive set of data pertaining to the current life of mine plan. This dataset included the following materials:

- 2022 Letšeng resource block model and associated kimberlite wireframes
- Geotech – slope optimisation reports
- 2022 mining cost report and mining cost reconciliation report
- Ultimate and Interim Phase designs for the Main and Satellite Pits
- 2022 pit optimisation results including Resource to Reserve conversion report

- Production schedules: 2022-2037 production plan
- Survey data: lidar data and site map
- Mine planning process documentation

Mine Geotechnics Site Visits, Keyter and Terbrugge (various: 2019 - 2023)

Gerhard Keyter and Peter Terbrugge conducted site visits at various times from 2019 up to June 2023 as follows, always accompanied by Letšeng Diamonds personnel:

- 19-22 May 2019 – Peter Terbrugge only, combined SRK Canada and South Africa visit.
- 7-8 October 2020 – mine geotechnical evaluation of basalt and kimberlite pit slopes, for pit slope steepening study.
- 15-15 September 2021 – geotechnical review of open pit slope performance.
- 13-15 February 2022 – review of the stability and lateral support requirements in the West Wall of the Satellite Pit.
- 12-13 June 2023 – Gerhard Keyter only, geotechnical review of open pit slope performance.

During these site visits, inspections were carried out in the Main Pit and Satellite Pit, discussions were held with Letšeng and Gem Diamonds personnel, and design reports and on mine documents, pit slope monitoring data, hazard management plans and evacuation procedures were reviewed, based on which the following site verifications were made:

- Systems and procedures for geotechnical data collection were in place, and consistently applied.
- The Letšeng geotechnical model and its constituent models (geology, structural geology, hydrogeology and rockmass) were being maintained and continuously improved upon (see e.g. TECT, 2022).
- Various open pit slope design studies have been carried out for Letšeng, with detailed slope design analyses and modelling carried out as required to support the adoption of steeper pit slope angles as implemented in the LOM (e.g. SRK, 2012; Lephatsoe et al., 2014; SRK, 2015; Madowe, 2016; Lefu et al., 2017; Lefu, 2019; Lefu et al., 2019a; Lefu et al., 2019b; Itasca, 2019; SRK, 2021).
- Open pit slope design and the implementation of pit slope design angles were generally consistent with approved geotechnical designs.
- The performance of mined pit slopes is regularly reviewed, with adjustments made locally in mitigation of potential rockfalls and wall instability as identified during in pit inspections and/or through slope monitoring.
- Mine dewatering and pit slope depressurisation were carried out as required, and extended with depth as appropriate as mining continues.
- Much attention was given to pit limit blasting practices including specialist review of presplitting and buffer blasting designs (SRK, 2021), with continual improvement of blast designs and drilling and charging controls to minimise bench instability and crest damage, and associated rockfall risk.

- Mechanical scalers were used to dress down and remove loose rock on bench faces and crests.
- In areas of elevated rockfall risk as identified by in pit inspections and/or slope monitoring, local lateral support and/or draped mesh were installed to mitigate the risks, or, where possible, the loose rock hazard is removed by remote access crews. That said, given ongoing calls for such mitigation, it was noted that execution did not always keep up with the demand for such mitigation, which often resulted in slow/late close out of such calls, and it was recommended that additional resources be mobilised to keep up with requirements in this regard (SRK, 2021).
- A dedicated pit slope monitoring programme was in place and comprised GeoMoS automated monitoring of survey prisms installed on pit slopes, slope stability radars and laser scanner monitoring of areas of elevated risk and highwalls above working areas, and regular in pit inspection by the Letšeng Geotechnical Department.
- A Ground Control/Hazard Management Plan was being maintained and regularly updated based on in-pit observations and pit slope/highwall performance, with emergency responses and evacuation procedures in place to ensure timely withdrawal of personnel and equipment where the onset of highwall instability is identified.
- With split-shell mining adopted in the Letšeng open pits, rock spill over from waste stripping operations above kimberlite mining operations below, in a pit bottom that keeps decreasing in size with depth, constitutes an operational rockfall risk to the kimberlite mining operation. This requires good control on mining operations and scheduling thereof, to ensure adequate separation of work activities to prevent undue exposure of personnel and equipment to risks of rock spill over from above.

Geotechnical Logging and Sampling QAQC Site Visit, Cock (2023)

Brent Cock visited the mine site in February 2023 and carried out a detailed QAQC of basalt drill core geotechnical logging and sampling practices employed at Letšeng (SRK, 2023a).

Infrastructure and Economics Site Visits, Kottmeier (2019, 2022)

Carl Kottmeier visited the mine site in 2019 and 2022. Based on the inspections and reviews of Letšeng infrastructure and finance carried out, the following site verifications were made:

- Patising Seepage control dam and the pump reclaim system: mine site pump capacities and water balance information.
- Patising RSF: the slope angle as measured by a cellphone inclinometer program to be approximately 35 degrees from horizontal. Construction material being -40 mm + 2.0 mm processed kimberlite, with finer material observed indicating local, surface weathering.
- RSF conveyor belt system: information for the conveyor belts dimensions and capabilities, and inspection of its planned northwest extension parallel to the existing Patising RSF dam to a new wall of kimberlite tailings storage.
- Tailings slurry discharge locations and water reclaim pump locations: the discharge locations being stated to be changed approximately every two weeks.

- Old RSF within the tailing's basin: some cracks and slumping that had recently developed on the dam were limited to the outer crest region – these were not observed in the dam closer to the slimes' deposition area. Mirrors were installed on the outer crest and a Maptek Sentry laser slope monitoring system was located near the base of the dam and is regularly monitored as advised by Letšeng. The base of the Old Slimes Dam was examined and there was a lack of any significant forward movement at the toe of the dam.
- Mothusi Dam (mine main fresh water source): water is taken from this dam and purified in the mine's filtration plant, that is then used as potable water. The Mothusi Dam is also the source for the mine's fire water system, that is pumped to a fire water storage tank located on a high point above the treatment plants and other site buildings.
- Mine electrical system: connection to grid power; nominal and peak power loading; electrical costing and back-up power system.
- Waste rock storage areas: dumping practices were observed, and it was noted that there were frequent low berm heights. Certain dumping practices that were seen could be improved and best practice dumping procedures were reviewed with site management.
- Other mine infrastructure inspections and reviews: open pits; buildings; roadways; explosives supply and storage; fire suppression; potable water supply; surveys; blasting practices and nitrates management aspects.
- Finance, costing and economic analysis: information requirements to be provided were identified.

Hydrology Site Visits, Shepherd (2019, 2022)

Peter Shepherd visited the mine site in 2019 and 2022. Based on the hydrology and water management inspections and reviews carried out at Letšeng, the following site verifications were made.

Water Supply

- The Mothusi Dam catchment area is about 5.3 km2 and is at the upper reaches of the Mokoalibane River. Potable water is supplied from the dam via the water treatment plant and is the only supply of raw water to the mine. The dam is used as a raw water supply to the plant as a last water source after recycling within the mine itself.
- Historically the runoff and storage of runoff (and snow melt) into Mothusi Dam has sustained the mine, and the dam has yielded approximately 2.6 M l/day.
- A recently constructed collection facility below the Patising RSF has meant that the seepage water from the Patising RSF is collected and reused, therefore reducing the raw water makeup. This collection facility has been constructed using standard engineering principals and the pumping station is constructed to convey at least 50 l/s which is enough to collect the seepage from the dump. There will be times during rainfall more than 25 mm where the facilities will not be able to contain the water and spillage is expected from the seepage dam.

- The potable water treatment plant was observed to currently meet the potable treatment requirements. An inspection of the facility including the filtering and backwash systems and discussion with management personnel showed the facility was operating to design.
- No problems were observed on the water reticulation system.
- The sewage treatment works had recently been upgraded and it was observed to be working well at the time of the visit.

Contamination

- Monitoring of water contamination within the permit requirements was in place.
- The nitrates exceed the permit conditions. The Department of Water and Sanitation (DWS) and the Environment Department are well informed of the problem and are an integral part of developing a solution. Water quality records within the natural watercourse of the Patising immediately downstream of the seepage dam routinely show nitrate levels which are significantly lower than in the seepage dam (which is operated as a closed circuit pumping back to the RSF). However, nitrates in the Patising watercourse are still higher than reference sites not impacted by the mine.
- There are concept and nitrate reduction studies underway to provide solutions for the reduction in nitrates. The Letšeng Water Management Plan sets the objective to maximize the nitrate removal potential of the RTZ Dam (Bulwark, 2021).
- The community downstream of the mine is supplied with clean water in the interim.
- Some discharge of water occurs to the RTZ valley during summer.

Water Balance

- The water balance was well maintained and updated monthly.
- There is a good understanding of the flows to and from the various water balance elements.

There is a general discharge of water in summer, and during the winter the water that is stored is used in the mining processes.

Stormwater Controls

- Generally, very little stormwater drains have been constructed within the Plant's area and the water naturally flows into the Old Patising Dam. The water that accumulates within the Old Patising dam is reused in the Plant's.
- A Stormwater Plan was developed in 2015 and updated in 2017.
- The dirty water from the old Patising RSF is contained and reused, water seepage and runoff water from the operational Patising Dam is currently captured and reused in the Plant's. Any seepage is collected in the seepage dam is reused in the plant. The runoff into the RTZ Dam is not reused.
- Clean water is diverted to the Mothusi Dam.
- Seepage collected below the facilities is reused at the Patising RSF.

Main Water Management Issues Identified

- The discharge of water with high nitrates is the highest risk from a water management perspective. In excess of ZAR 50 million will be required to rectify this issue and should be implemented in various stages.
- The water availability:
  - There seems to be limited water on site, with the runoff into the Mothusi Dam, the only new water.
  - Return water from RSFs can lose clarity during windy conditions and the shallow pools makes it difficult to control the clarity.

Tailings and Waste Rock Disposal Site Visits, McNeill (2019, 2022)

Rob McNeill visited the mine site in 2019 and 2022. Based on the RSFs inspections and reviews carried out at Letšeng, the following site verifications were made.

- The Letšeng Mine operated two residue storage facilities, identified as the Old RSF and the new Patising RSF.
- The Process Plants produce two tailings streams namely:
  - Coarse kimberlite tailings (+2.0 mm to -40.0 mm). The coarse kimberlite tailings do weather, as observed on the historically placed coarse tailings at the toe of western the Patising RSF.
  - Fine kimberlite tailings stream (-2.0 mm).
- The Old RSF was recently being operated intermittently, before being temporarily decommissioned.
- Water storage volumes on the top surface of the Old RSF has reduced significantly.
- Differential supplement or cracks were observed on 8 July 2019, near the crest of the north valley containment wall. The differential settlements have manifested themselves in numerous parallel steps, parallel to the crest line with steps up to 1.5 m in height. At the bottom of the slope no major bulging or deformation was observed. The visual extent of deformation was confined to a localised area measuring approximately 1.5 m long by 0.5 m wide with a maximum displaced of 50 mm.
- There are numerous tension cracks in the vicinity of the toe but not running parallel to the slope, generally at 45° towards the river or streamline.
- Since 19 July 2019, the slope was being continuously monitored using the pits' trailer mounted slope monitoring laser system. A maximum 10 mm of movement has been recorded since monitoring commenced.

RSF – Issues and Verifications

The main issues from a tailings' perspective identified are as follows:

- After 2024 Letšeng Mine requires additional coarse tailings storage area/s, necessitating securing surface rights on neighboring properties.
- Old RSF northern wall differential cracks have formed that need to be fully investigated and preferred remedial measures documented and implemented.

- Seepage observed at the toe of the Old RSF northern containment wall needs to be continuously monitored. The existing damaged 'V' notch weir needs to be replaced or repaired.
- The seepage observed existing to the toe of the Patising RSF needs to be measured and arrested by the planned underdrainage system.
- The Patising RSF pool is extremely shallow, resulting in return water not meeting plant requirements due to turbidity/high solids concentration concerns.
- Vibration monitoring around the RSFs is not being undertaken.
- Historical structural stability audit reports for the Patising RSF indicate slope stabilities lower than the industries recognised 1.5 and 1.3 excluding seismic loading and close to 1.0 under seismic loading conditions. The 2016 third party audit indicated potential slope failures under seismic loading conditions, especially if foundation clays are not removed. The third-party audit also states that large scale flow failure is extremely low.

The following was verified from site observations and discussions:

- Freeboard – good on Old Dam and excellent on the Patising RSF.
- Good coarse and fines deposition practices at the Patising RSF.
- Good fine tailings in-situ dry densities are being achieved in the Patising RSF.
- Infrastructure is constructed downstream of Patising RSF main containment wall in support of current and future coarse tailings deposition.
- It was reported that underdrainage system to be installed to Patising RSF main containment wall.
- The Patising RSF pool is extremely shallow, consequently on windy days the turbidity of the water does not meet the plants requirements.
- Reported that competent person appointed on the design and monitoring of the RSFs.
- Reported that monitoring meeting being held regularly.
- No vibration monitoring being practiced around the RSFs or the RSF containment walls.
- RSF containment walls extremely wide so there should not be any stability issues that would subject the RSFs to risk.

Waste Rock Dump – Pertinent Information and Observations

Based on the waste rock dump inspections and reviews carried out at Letšeng, the following site verifications were made.

- The Letšeng Mine operates one large waste rock dump whose design and layout/s were designed by SRK.
- It was reported that surveys of the waste rocks dump are performed monthly and assessed against the LOM plan.
- It was reported that historically, two dump trucks had accidently fallen down the operational slope.

Waste Rock Dump – Issues

The main issues from a waste rock perspective were:

- In isolated areas the waste rock dump where the berms are not the minimum half wheel height and in isolated areas the crest berms have not been formed.
- As the waste rock continues to advance towards the southeast of the pits into a drainage line, a similar situation where displacement of the advancing toe and localised deferential settlement could occur at the crest of the operational slope due to the riverine geotechnical conditions, that needs to be investigated.
- Bulldozers were not always available at each of the operational waste rock deposition fronts to ensure minimum waste rock crest berm heights are maintained.

Process Plants and Security Site Visit, Clarke (2019, 2022)

Jeremy Clarke visited the mine site in 2019 and 2022. Based on the Process Plants and security and diamond control inspections and reviews carried out at Letšeng, the following site verifications were made:

- Process Plants 1 and 2 and Recovery Plant process flow diagrams (PFDs).
- Major equipment lists for Plant 1, Plant 2 and the Recovery Plant.
- Monthly operational reports for Plant 1 and Plant 2 operations for 2018 to August 2019.
- Minopex staffing structures.
- Minopex operating cost reports for 2018 to August 2019.
- Capital expenditure requirements for the next five years: proposed new projects.
- Fluor study for the potential new plant Front End.

The site visit indicated that the Plant 1 operations were generally of a good standard.

- The diamond liberation processes of primary crushing, scrubbing, screening, secondary crushing and re-crush crushing were operating well. The secondary and re-crush cone crushers were operating with level controls and appeared optimal for the design.
- The additional re-crush crusher was not working at the time of the site visit as the plant material mass balance did not require it at that time.
- The set-points for the coarse and fines DMS sections were considered correct for the Plant design. The cyclones could not be inspected during the site visit as the plant was operational at the time, however the maintenance records indicated that they are inspected regularly and replaced when required.
- DMS process tracer tests are conducted regularly to assess the likely efficiency and the results reported to management. 150D FeSi is used in both DMS circuits which is considered correct. The FeSi consumption is a bit high at approximately 230 g/t of DMS feed compared to a budget of c.150 g/t. There is an opportunity to reduce this to the budget level, or below.

- Overall, the DMS operations appeared to be acceptable at Plant 1.
- The overall standard of housekeeping in Plant 1 was lower than expected and should be improved.

The operations at Plant 2 were also considered to be satisfactory.

- The diamond liberation processes of primary crushing, scrubbing, screening, secondary crushing and re-crush crushing were operating well. The secondary and re-crush cone crushers were operating with level controls and appeared optimal for the design.
- Some recent work has been done on the re-crush crusher which will certainly improve the overall plant utilisations.
- The DMS operational set-points and cyclone parameters were within the required specifications. On inspection, the magnetic separator levels were low, and the magnet settings appeared to be incorrect, both of which will lead to higher than necessary FeSi losses. This does not cause any immediate loss of diamond recovery efficiency but does increase operating costs. It would be useful to improve the access to the primary magnetic separators so that it is easier to maintain the correct operational conditions.
- The cyclones could not be inspected during the site visit as the plant was operational at the time, however the maintenance records indicated that they are inspected regularly and replaced when required.
- DMS tracer tests are conducted regularly, and the results reported to management. 150D FeSi is used in both DMS circuits which is considered correct. The FeSi consumption is more or less on budget at c.170 g/t.
- Overall, except for the magnetic separators, the DMS operations appeared to be acceptable.
- The water recovery system consists of a thickener and flocculant plant which were operating within their parameters; however, the thickener feed launder was worn out in several places which, if not repaired or replaced soon, will lead to poor thickener overflow quality which can, in turn, cause FeSi rheology problems and diamond losses in the DMS unit processes.
- The overall standard of housekeeping in Plant 2 was also considered to be lower than expected and should be improved.

It was difficult to assess the operations in the Recovery Plant during the site visit due to security constraints; however, there were no reasons to consider that the overall process efficiencies were not up to the standard required and possible given the inherent design and equipment installed.

Environmental and Permitting Meetings, Kilian and Maharaj (2019, 2024)

Status of Permitting and Financial Provision

Based on document review and meetings with group and operation personnel, it was found that the status of permitting and financial provision was:

- The mine has all the necessary permits required to operate.

The mine has prepared a Basis of Estimate Closure Liability Update FY2023, which has been approved and submitted to the Lesotho government. The update includes closure liability estimates for Premature (Year 1 2023) and LOM (Y2038) closure scenarios as well as years 2 to 5 (2024-2027) closure liability forecast.

Management Systems and Structures

The operation has the following management systems and structures in place to ensure that permit conditions and commitments are adhered to, and mine-induced impacts are mitigated and managed:

- Approved Health, Safety and Environment Policy dated 2022-2023.
- Approved Corporate Social Responsibility and Investment Policy dated 2020.
- An integrated HSE management system comprising relevant polices, plans and procedures. The HSE Management System is compliant with ISO Standards 14001 (2015) and 45001 (2018). The latest certification audit was conducted in 2023.
- A SEMP, which is a legally binding document under the RoD issued by the Department of Environment in the Ministry of Tourism, Environment and Culture. The most recent SEMP is dated 2022 (Letšeng Diamonds, 2022b) and is supported by an environmental and social action plan (ESAP).
- Annual external audits of the SEMP and the mine's safety, health, and environmental legal compliance.
- An annual performance report that provides an update of the Environmental Management Programme of Letšeng for the period January to December. The 2022 report was finalised in July 2023 (Letšeng Diamonds, 2023).
- The mine has a HSE Department with dedicated staff that oversee day-to-day environmental management and monitoring.
- A dedicated Corporate Social Responsibility and Investment (CSRI) and Communications Department reporting to the Chief Executive Officer based in Maseru.
- A risk (aspect/impact) register that highlights the key environmental and social risks as well as a legal register of environmental permits.

Environmental Issues Recognised

A number of environmental issues requiring management were highlighted from the review of recent audits and reports and from discussions with mine personnel:

Water management:

- The main challenge relates nitrate concentrations. The long-term trends in the Qaqa and Patising systems show that average concentrations are on a downward trend although the lower Khubelu system shows a fluctuating trend with sporadic increase in nitrate concentrations especially during the winter dry season. There is a NMP in place to guide activities aimed at managing sources of nitrates and mitigating the impact from discharged effluent. Water quality monitoring protocols will be updated by mid-2024.

- Management of surface water resources requires a holistic and dedicated approach to effectively address water quality issues, of which nitrates are regarded as a parameter of concern. This should include interventions to deal with issues not only at source, but also within the receiving environments through enhancement of ecological infrastructure.

Waste management:

- Waste management issues were identified at the mine during a recent SEMP audit. Mine personnel reported that Letšeng Mine is implementing corrective actions to address identified issues. It was also confirmed that a dedicated contractor has been appointed to manage general waste on site.
- Currently medical waste is disposed of using an incinerator. The mine has applied for authorisation/ exemption from the Department of Environment in March 2021 for the new incinerator (Model 250LA) and awaiting a response.

Public safety, health and well-being:

Residue storage facilities are being managed in a manner that protects the employees' health and safety, community and the environment. Letšeng has developed and implemented Emergency Response and Evacuation Plans in order to adequately respond to emergencies that can occur on the mine (Letšeng Diamonds, 2023).

<u>Social and Community Meetings</u>

The current status of social and community aspects were ascertained from the review of recent audits and reports and discussions with mine personnel:

- The mine implements CSI programmes, informed by regular community needs analysis. CRI projects and interventions are aligned to government development priorities.
- There has been no recent community protest action since the 2013 occurrence, which was addressed and reportedly resolved in the established community forums.
- The mine has developed a stakeholder management plan and grievance management mechanism to manage stakeholder relations.
- The mine conducts regular meetings with project affected communities and other stakeholders to provide feedback on environmental issues.
- The mine has reportedly received no recent complaints from the communities. There is ongoing consultation with government and community leaders to give assurance that the mine is proactively monitoring and managing water quality.

The documents and associated data provided for the review were deemed adequate to ascertain the current status of environmental and social performance at Letšeng Mine.

12.2.2 Geological Model

The QPs for the Main Pipe and Satellite Pipe geological models conducted the following verifications and no significant issues or discrepancies were noted:

- Audit of drill hole database provided by Letšeng.
- Spot checks on drill hole collar and orientation survey certificates against the drill hole database.
- Spot checks on hard copy drill core log transcription against the drill hole database.
- Review of adherence to core logging and sampling and pit mapping and sampling SOPs.
- Logging of drill holes to verify geology and examination of pit exposures on multiple occasions.
- Checking of all logged kimberlite/basalt contacts and internal domain contacts.
- Review of internal dilution and other quantitative measurement data procedures and data.

After review of the drill hole database, geological logs, drill cores, pit exposures, core photos, and internal dilution estimates, the QPs are of the opinion that the data are sufficiently reliable for use in generation of a geological model of appropriate confidence to support the estimation of mineral resources.

12.2.3 Mineral Resource Estimate

Bulk density

The bulk density data used for estimation at Letšeng Mine derives from regular-spaced sampling of historical and recent delineation drill cores. The QP considers the methods used to be in line with industry standard practice. The QP reviewed the bulk density database, the scale calibration measurements for recent sampling, and verified that samples were correctly coded according to the updated geological model domains. No significant issues or discrepancies were found.

Microdiamond / Macrodiamond

No microdiamond or macrodiamond (bulk sampling) data were used to derive the mineral resource estimate reported herein; only discrete production parcels from 2016 to 2023 were used.

Production and Sales Data

Production and sales data from 2016 to 2023 were provided to SRK as part of the current mineral resource update. Although a detailed audit of this information was not conducted by the QP, the information was reviewed in the context of reconciling past production and diamond revenues with data used for the 2024 mineral resource estimate. No significant issues or discrepancies were noted by the QP during this review.

After review of the production and sales data for Letšeng Mine, the QP is of the opinion that the data are sufficiently reliable to use for mineral resource estimation.

12.2.4 Independent Verification Sampling

There was no SRK independent diamond verification sampling done by SRK.

13 Mineral Processing and Metallurgical Testing

13.1 Historical Process Plant Operations

The purpose of this section is to use the metallurgical qualities of the run of mine (ROM) ore and diamonds as a basis for recommending the suitability of the existing process plants to meet the requirements of the updated mineral resource at the required tonnages. The historical Ore Dressing Studies (ODS) conducted on Letšeng kimberlites (ADP, 2011), as well as the immense experience gained from Process Plant operations over the years are very useful reference points.

Letšeng Mine processes ore from two kimberlite pipes, Main Pipe and Satellite Pipe, as well as from existing stockpiles. The pipes both bear low-grade ore that averages around 2 carats per hundred tonnes (cpht). The ROM ore from these resources is processed through two Process Plants; No. 1 Plant and No. 2 Plant, which have a combined capacity of 5.7 million tonnes per annum (Mtpa). Production commenced in March 2004 at No. 1 Plant and in March 2008 at No. 2 Plant. Annual production has grown from 55,000 carats in 2006 to 109,656 carats in 2023.

Mineral resource estimates and detailed geological mapping and have been conducted in the open pits throughout the mine’s operational life. Despite differences between the previous and current mineral resource estimates (Section 14), the geological continuity of the main kimberlite domains that has been observed over the mine life and that is projected to depth in the current estimate, strengthens the relevance of past site experience to this current assessment.

Through knowledge gained from all the historical sampling for supporting mineral resource estimation work, metallurgical testwork, plant operations and historical ODS, the mine has acquired extensive experience regarding the metallurgical qualities and behaviour of the ROM ore in the Process Plants. It is therefore not anticipated that the updated mineral resource will behave significantly differently and cause complications in the various plant unit processes. The historical operating data and diamond recovery results give the best indication of the effectiveness of the existing plant design, supported by the prevailing site operational practices and production plans. The current drive to minimise diamond damage to large stones is imperative and will go a long way to maximising value, thus potentially improving the revenue for the mine.

It is noted in Section 17.9 of this report that there was some difficulty in understanding the lower than expected production rates for both Plants from the metallurgical accounting data provided. The engineering availabilities achieved over the period under review were in line with budget estimates and therefore the operational efficiencies needed a more detailed assessment. On detailed analysis, the metallurgical accounting data did not generate the required information on which to make an informed decision as to the root causes of this discrepancy. In the light of these issues, the QP held further discussions with Gem Diamonds and Letšeng Mine. It has long been established that the different domains within the kimberlite pipes behave differently in the Process Plants due to ore composition, hardness, fragmentation, and DMS and X-ray yields. Previously the planned feed rates took this into account and thus the planned rate per annum was lower than the stated nameplate capacities for the Plants. To improve the overall runtime, operational stability and consistency, as well as to reduce costs, a management decision was made to further reduce the planned feed rates and shift the focus to continuous runs over a longer period, rather than short periods with high production rates. This strategy has paid dividends as evidenced by the recent steady increase in runtimes and overall utilisations. This ties in with the proposed production, managerial, and financial changes that are currently planned.

13.2 Recovery Factor

The derivation of a mineral resource for a diamond mine is very different to that usually undertaken for all other commodities. Due to the fact that it is not possible to assay the feed to and the tailings from a diamond treatment plant, a different approach is required. The grade, diamond size distribution, and diamond values are gathered by means of treating large bulk samples at the very early stage of the development of a new diamond mine. In the case of the Letšeng Mine, there is also the historical production information gathered over 20 years. The current Letšeng mineral resource is based on diamonds that have been recovered by the two Process Plants and sold over the production period from 2016 to 2023.

Due to the current status at Letšeng where it is not expected that there will be significant changes to the flowsheets of the two Process Plants, the future recoveries are very likely to be the same as those obtained historically. Since the Plants themselves are the “sampling tool”, along with the fact that the mineral resource was derived from production data obtained between 2016 and 2023, the use of a 100% recovery factor for this study is valid as it already accounts for actual diamond recoveries within the Letšeng Mine Process Plants.

14 Mineral Resource Estimates

14.1 Introduction

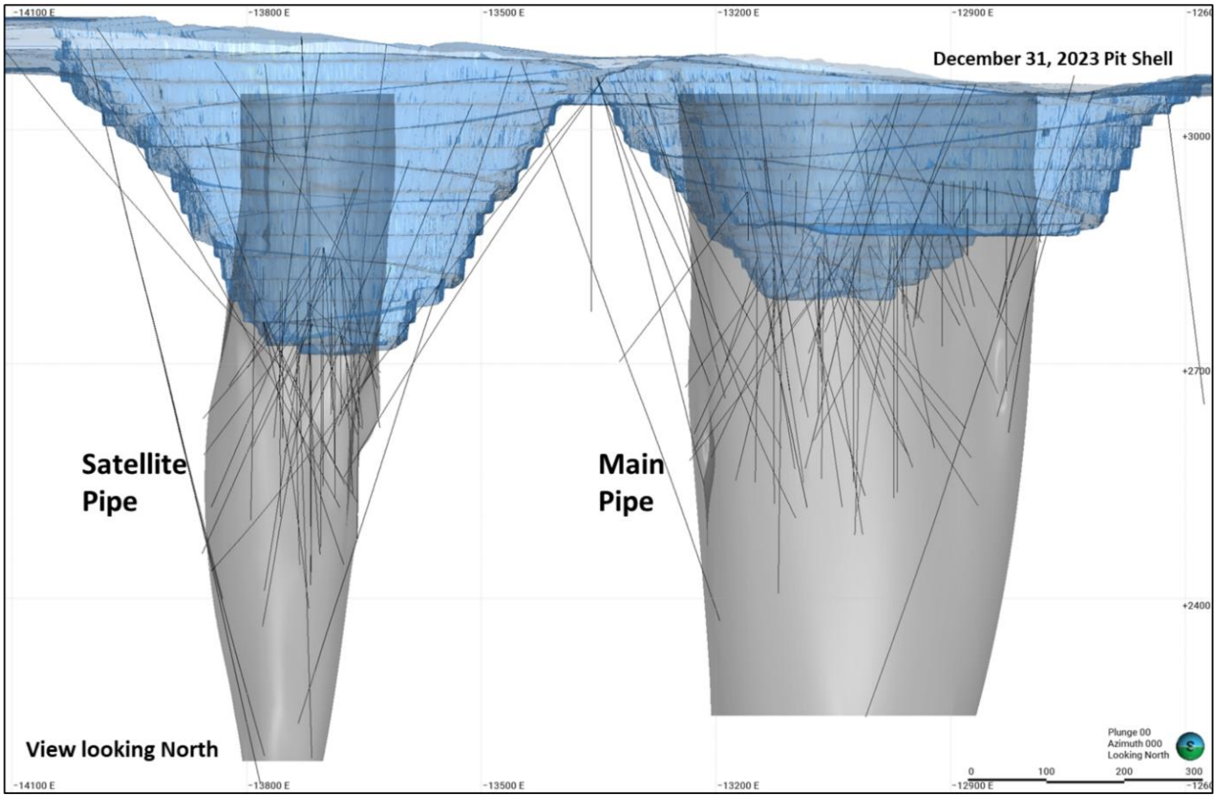
The Mineral Resource Statement presented herein represents an updated mineral resource estimate prepared for the Letšeng Mine in accordance with the Canadian Securities Administrators' NI 43-101. The mineral resource estimation work was completed by Cliff Revering, P.Eng., an employee of SRK Consulting (Canada) Inc. and an "independent qualified person" as this term is defined in NI 43-101. The effective date of the Mineral Resource Statement is 31 December 2023.

This section describes the resource estimation methodology and summarises the key assumptions. In the opinion of Mr. Revering, the mineral resource estimates reported herein are reasonable representations of the global diamond mineral resources found in the Letšeng Mine at the current level of geological understanding, mine production and diamond sales. The mineral resources have been estimated in conformity with generally accepted Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines" dated 29 November 2019, and "Definition Standards for Mineral Resources and Mineral Reserves" published 10 May 2014, and are reported in accordance with the Canadian Securities Administrators' NI 43-101 Standards of Disclosure for Mineral Projects. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into a mineral reserve.

Letšeng Mine has been in operation since 2004, and as of the end of December 2023, the mined open pits extend to depths of approximately 290 m and 380 m below surface for Main Pipe and Satellite Pipe, respectively. The 2024 mineral resource update for Letšeng Mine is based on the following information obtained since the previous mineral resource estimate was completed in January 2015 (Venmyn Deloitte, 2015):

- Three phases of additional diamond core drilling: 2017-2020 (31 drillholes, 8 386 m), 2021-2022 (24 drillholes, 8 640 m), and 2022-2023 (8 drillholes, 2 235 m); (Section 10).
- Petrographic analysis conducted between 2015 and 2023 in both the Satellite and Main pipes (Section 11).
- Microdiamond analysis: initial studies in late 2015 and more detailed studies in 2019-2020 (Section 11).
- Updated geological models for Satellite Pipe and Main Pipe (Section 7).
- Discrete sampling data, discrete production data and sales information for diamonds recovered from the dominant kimberlite domains within the Satellite and Main pipes.
- In-pit mapping data of internal and external kimberlite contacts.
- Updated Size Frequency Distributions (SFD) and revised diamond pricing information based on sales data to the end of 2023.
- As-built survey of the open-pit topography as of 31 December 2023.

Figure 14-1 shows the geological models (external kimberlite contacts) of the Satellite and Main Pipes, the mined open-pits as of 31 December 2023, and all drill hole traces used to support the 2024 mineral resource estimate for the Letšeng Diamond Mine.



Source: SRK (2024)

Figure 14-1: Geological models (pipe shells) of the Letšeng kimberlite pipes (grey), the 31 December 2023 mined open-pit topography, and all drill hole traces

The 2023 geological model update and 2024 mineral resource estimate were conducted in Seequent's Leapfrog Geo modeling software. The block model is comprised of a sub-block format using the following configuration parameters;

- block model X,Y,Z origin of -14280, -3210300, 3200, respectively, with no rotation;
- parent block size of 5 x 5 x 14m, and a sub-block size of 0.625 x 0.625 x 0.875m, and;
- model extents (by # of parent blocks) of 1810, 1290 and 1064 along the X,Y,Z axes.

The block model contains global estimates of volume, density, diamond grade and average diamond price for all kimberlite domains within the pipe shells. Further details of the estimation methodology and data are provided in the following sections.

14.2 Kimberlite Domains and Volumes

Details of the geological models for the Satellite and Main pipes are described in Section 7 of this report.

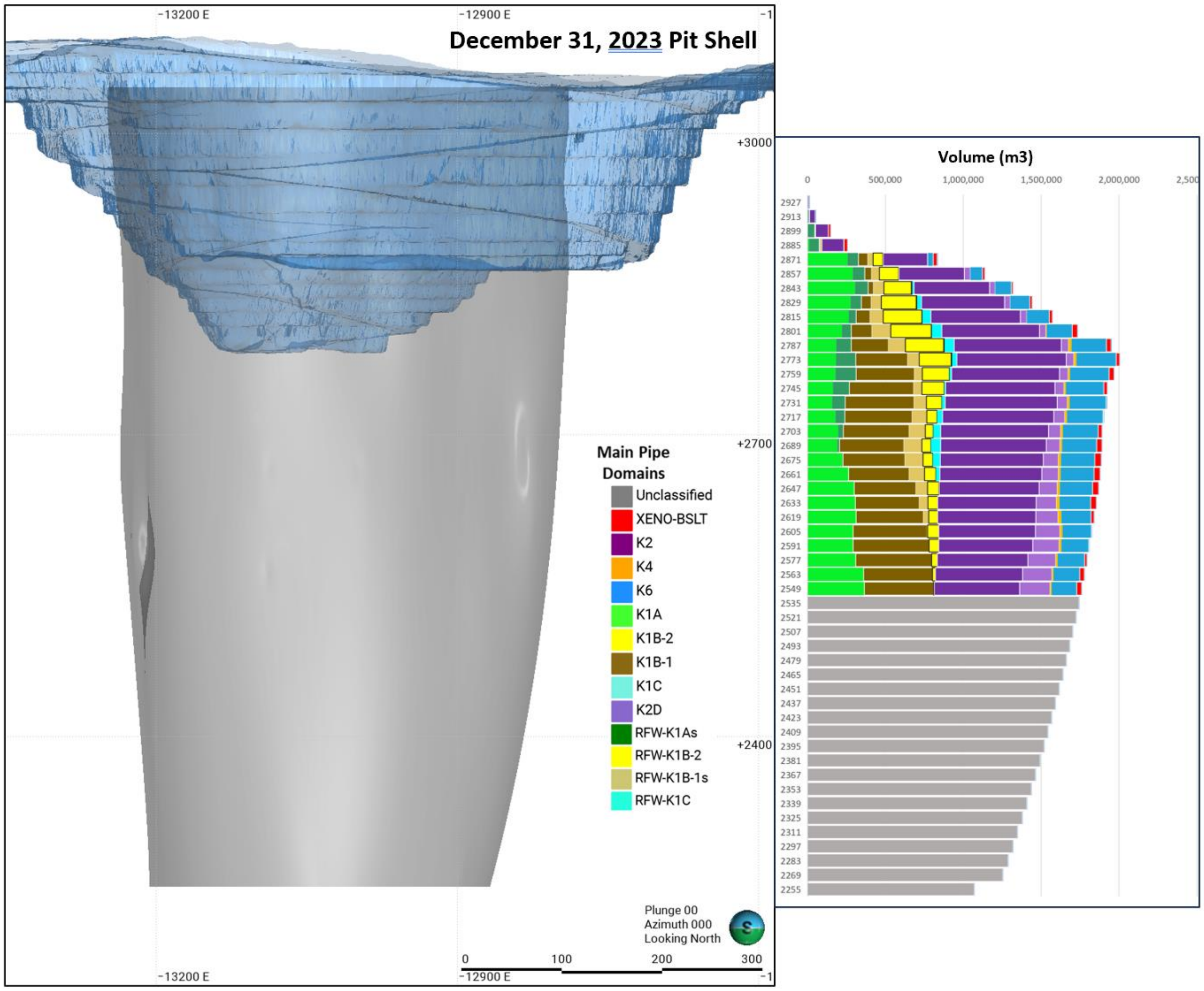
The total in-situ kimberlite volume within the pipe shell model for Main Pipe is 73.31 million cubic metres and for Satellite Pipe is 15.65 million cubic metres, as at 31 December 2023 (shown in Figure 14-1). These inventory volumes include kimberlite that is not classified as mineral resource in Main Pipe. The 31.43 million cubic metres of undefined kimberlite inventory below 2 542m masl is excluded from the mineral resource due to insufficient drilling to define the internal geology.

Volume estimates of the unmined in-situ kimberlite inventory per domain are listed in Table 14-1 and shown graphically in Figure 14-2 and Figure 14-3.

Table 14-1: In-situ volumes of kimberlite inventory as of 31 December 2023

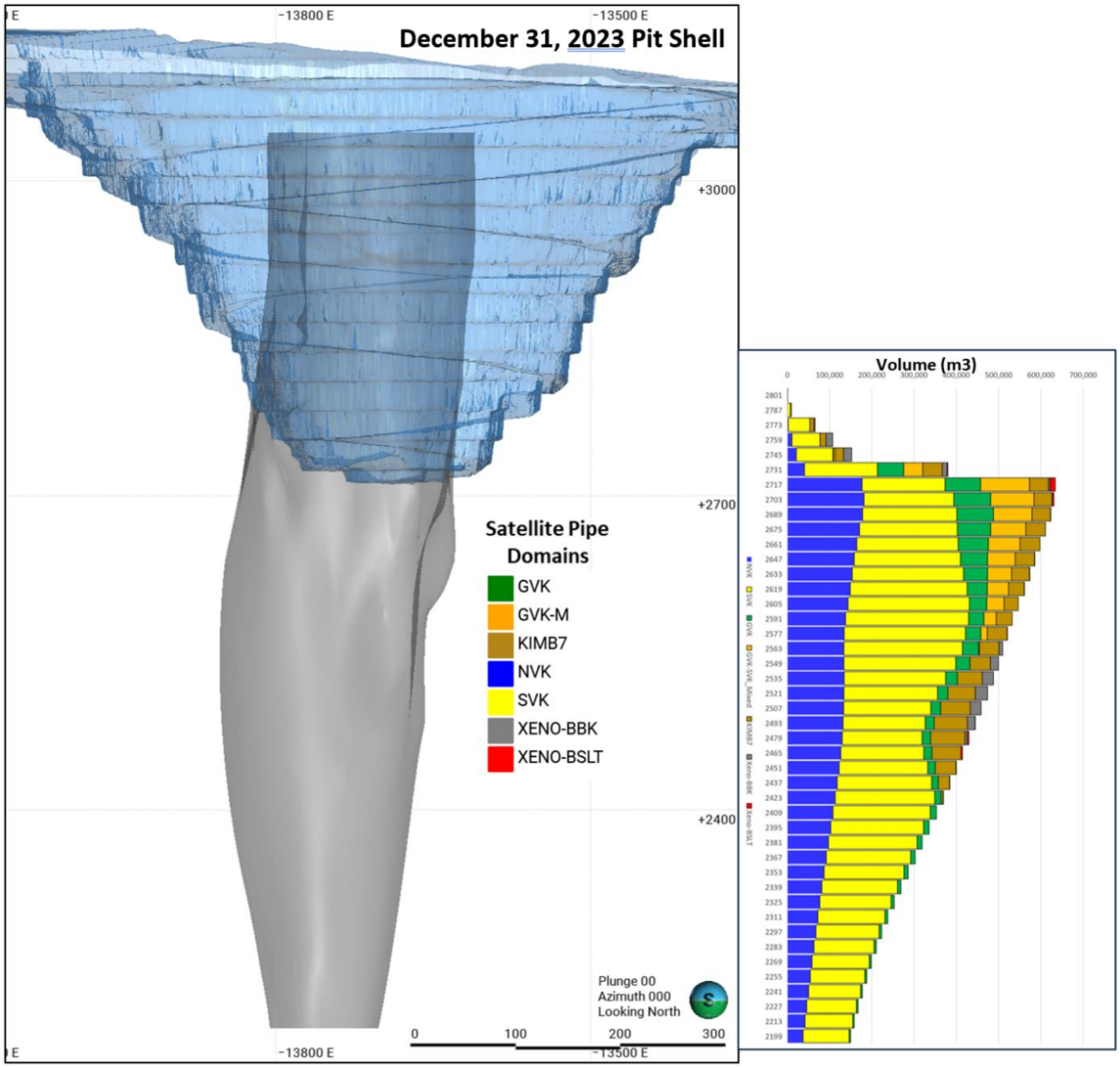
Pipe	Domain	Volume (million m³)	% of Total Volume
Main	K1A	6.04	8.20%
	RFW-K1S-K1As	1.16	1.60%
	RFW-K1S-XENO-BSLT	0	0.00%
	K1B-1	7.81	10.70%
	RFW-K1S-K1B-1s	1.49	2.00%
	K1B-2	2.65	3.60%
	RFW-K1S-K1B-2	0.03	0.00%
	K1C	0.52	0.70%
	K2	14.73	20.10%
	K2D	2.19	3.00%
	XENO-BSLT	0.57	0.80%
	K4	0.28	0.40%
	K6	4.41	6.00%
	Undefined	31.43	42.90%
	TOTAL MAIN PIPE	**73.31**	100.00%
Satellite	NVK	4.3	27.50%
	SVK	8.21	52.50%
	GVK	1.07	6.80%
	GVK-SVK Mixed	0.7	4.50%
	KIMB7	1.17	7.50%
	XENO-BBK	0.18	1.20%
	XENO-BSLT	0.02	0.10%
	TOTAL SATELLITE PIPE	**15.65**	100.00%

Source:



Source: SRK (2024)

Figure 14-2: Main Pipe in situ kimberlite domain volumes by elevation



Source: SRK (2024)

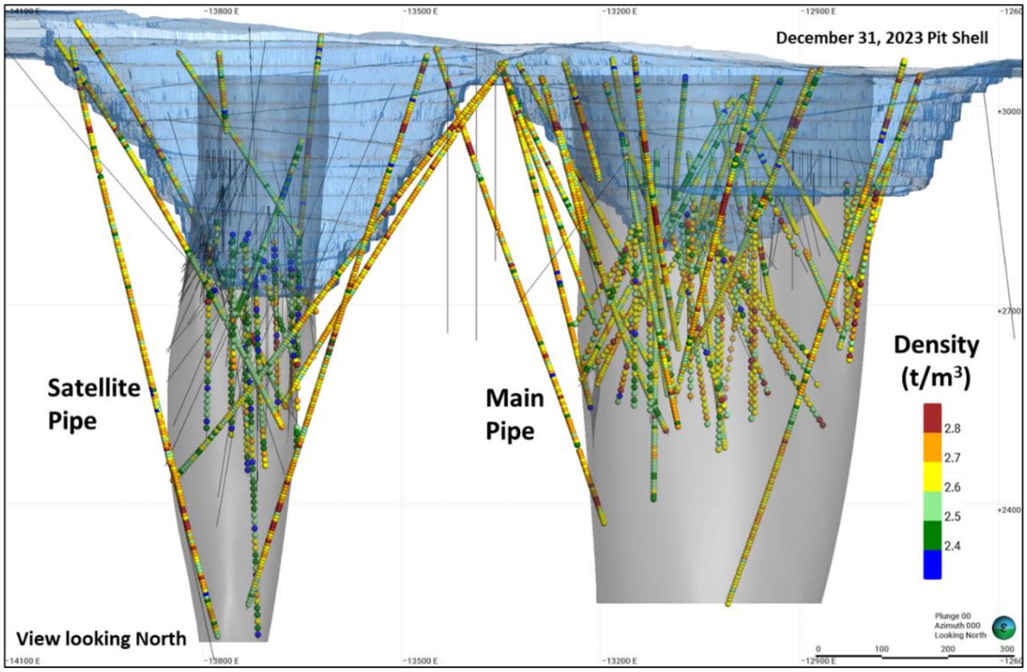
Figure 14-3: Satellite Pipe in situ kimberlite domain volumes by elevation

14.3 Bulk Density

Global average dry bulk density values have been estimated for each internal kimberlite domain within Satellite and Main Pipes. A total of 2,885 wet bulk density measurements have been collected from drill core within the kimberlite pipes, along with an additional 1197 wet bulk density measurements within the Basalt host country rock unit. Average in situ moisture content values derived from production data were used to convert average wet density values into dry bulk density values for each internal kimberlite domain, with details summarised in Table 14-2.

Figure 14-4 provides a colour-coded wet density (units of t/m^3) sample location map, depicting the outer kimberlite pipe contacts for the Satellite and Main pipes and base of the 31 December 2023 surveyed pit shell.

In 2017, additional dry bulk density analysis was conducted on drill core samples to corroborate estimated dry densities from the larger wet density data set and in-situ moisture content estimates.



Source: SRK (2024)

Figure 14-4: Average wet density sample location map

Table 14-2: Average wet and dry bulk density values for the Satellite and Main pipe internal kimberlite domains

Pipe	Domain	Wet Density (t/m^3)					Average In situ Moisture Content (%)	Average Estimated Dry Density (t/m^3)
		# of Samples	Mean	StdDev	Min	Max		
Main	K1A	251	2.62	0.07	2.13	2.77	4	2.52
	K1B-1	259	2.61	0.08	2.34	2.89	4	2.51
	K1B-2	114	2.63	0.08	2.33	2.81	4	2.51
	K1C	82	2.61	0.1	2.27	2.91	4	2.51
	K2	310	2.65	0.07	2.22	2.9	4	2.54
	K4	98	2.62	0.08	2.47	2.91	4	2.52
	K6	353	2.58	0.08	2.19	2.97	4	2.48
Satellite	NVK	533	2.6	0.13	2.01	2.92	4	2.5
	SVK	281	2.55	0.06	2.38	2.78	4	2.45
	GVK	361	2.54	0.08	2.19	2.78	4	2.45
	KIMB7	91	2.57	0.08	2.38	2.82	4	2.47
	Xeno-BBK	43	2.58	0.16	2.11	2.88	3	2.5
	Xeno-BSLT	109	2.68	0.11	2.24	2.91	4	2.58

Source: SRK (2024)

14.4 Grade Estimation

Global estimates of diamond grade for kimberlite domains within the Satellite and Main pipes have been developed based on compilation of discrete production parcels from within each domain from 2016 to 2023, inclusive. Discrete production parcels were compiled using surveyed loading points of mine production located within the kimberlite domains as defined by the geological model for each pipe. Production data comprised of multiple kimberlite domains (i.e. mixed populations) were excluded from the final discrete production parcels.

14.4.1 Discrete Production Summary

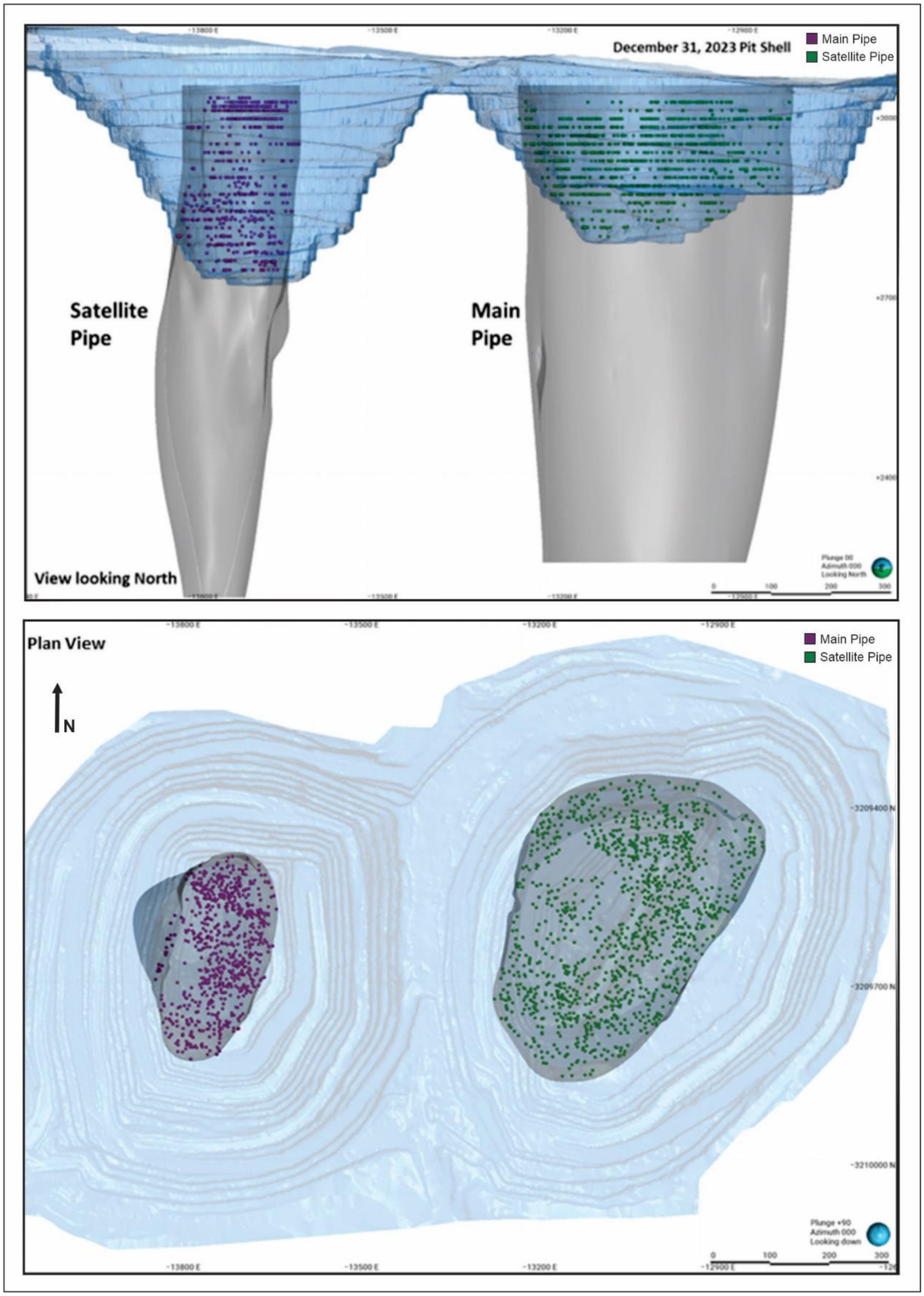
A location map of discrete production loading points within the Satellite and Main pipes is provided in Figure 14-5. A summary of the total carats, stones and tonnes for production years 2016 to 2023 is provided in Table 14-3, and has been used for global grade estimates for the various kimberlite domains within the Satellite and Main pipes.

As shown in Table 14-3, the various domains for each of K1A, K1B and K2 (listed in italics) have been consolidated into larger domain groupings and have been used to estimate a global average grade for each domain grouping. Table 14-4 and Table 14-5 provide further details of the discrete production diamond parcels segregated by size class for both recovered carats and stones, at a bottom cut-off of +2.0 mm.

Table 14-3: Discrete production parcel summary for years 2016 – 2023

Main Pipe Domains	Total Carats	Total Stones	Total Tonnes	Average Grade (cpht)	Average Stone Size (ct/stn)
Total K1A Grouping	**10,268**	**15,400**	**686,406**	**1.50**	0.67
K1A	*7,288*	*11,625*	*452,428*	1.61	0.63
RFW-K1S:K1As	*2,726*	*3,382*	*206,623*	1.32	0.81
RFW-K1S:XENO-BSLT	*255*	*393*	*27,355*	0.93	0.65
Total K1B Grouping	**10,538**	**17,080**	**679,826**	**1.55**	0.62
K1B-1	*6,025*	*9,880*	*382,546*	1.58	0.61
RFW-K1S:K1B-1s	*1,587*	*2,720*	*86,743*	1.83	0.58
K1B-2	*1,936*	*2,953*	*134,522*	1.44	0.66
RFW-K1S:K1B-2	*989*	*1,526*	*76,015*	1.30	0.65
K1C	**1,992**	**2,962**	**108,641**	**1.83**	0.67
K2	**32,145**	**51,679**	**2,002,679**	**1.61**	0.62
K2D	*423*	*673*	*21,426*	1.97	0.63
XENO-BSLT	*1,778*	*3,051*	*126,079*	1.41	0.58
K6	**13,523**	**24,411**	**547,048**	**2.47**	0.55
K4	**557**	**1,037**	**50,559**	**1.10**	0.54
Satellite Pipe Domains	**Total Carats**	**Total Stones**	**Total Tonnes**	**Average Grade (cpht)**	**Average Stone Size (ct/stn)**
NVK	38,141	50,301	1,738,522	2.19	0.76
SVK	19,394	26,213	856,869	2.26	0.74
GVK	14,179	21,410	409,728	3.46	0.66
GVK-SVK Mixed	24,798	36,413	797,216	3.11	0.68
Kimb 7	3,805	4,292	166,991	2.28	0.89

Source: SRK (2024)



Source: SRK (2024)

Figure 14-5: Discrete production loading points

Table 14-4: Discrete production diamond parcels carat per size class (+2.0mm bottom cut-off)

Main Pipe Domains	>10.8 ct	6-10.8 ct	3-5 ct	8-10 gr	3-6 gr	+11 sieve	+9 sieve	+7 sieve	+5 sieve	Total Carats
Total K1A Grouping	**1,684**	**796**	**1,194**	**966**	**2,406**	**1,761**	**907**	**396**	**159**	**10,268**
K1A	*1,051*	*550*	*748*	*700*	*1,796*	*1,323*	*696*	*299*	*125*	*7,288*
RFW-K1S:K1As	*564*	*227*	*415*	*256*	*570*	*393*	*188*	*85*	*28*	*2,726*
RFW-K1S:XENO-BSLT	*68*	*19*	*31*	*11*	*40*	*45*	*24*	*11*	*5*	*255*
Total K1B Grouping	**788**	**884**	**1,503**	**1,033**	**2,724**	**1,978**	**1,028**	**438**	**161**	**10,538**
K1B-1	*405*	*482*	*907*	*599*	*1,576*	*1,110*	*587*	*262*	*99*	*6,025*
RFW-K1S:K1B-1s	*156*	*121*	*171*	*142*	*413*	*317*	*168*	*73*	*26*	*1,587*
K1B-2	*141*	*204*	*295*	*192*	*469*	*359*	*183*	*70*	*23*	*1,936*
RFW-K1S:K1B-2	*85*	*78*	*129*	*101*	*266*	*192*	*91*	*34*	*13*	*989*
K1C	**143**	**149**	**298**	**217**	**557**	**363**	**181**	**66**	**19**	**1,992**
K2	**3,338**	**2,556**	**4,201**	**2,970**	**8,099**	**6,070**	**3,123**	**1,289**	**500**	**32,145**
K2D	*13*	*30*	*65*	*52*	*123*	*75*	*46*	*16*	*4*	*423*
XENO-BSLT	*157*	*66*	*192*	*189*	*528*	*357*	*185*	*78*	*27*	*1,778*
K6	**1,366**	**990**	**1,639**	**1,160**	**3,335**	**2,512**	**1,483**	**724**	**314**	**13,523**
K4	**28**	**17**	**59**	**55**	**186**	**106**	**68**	**27**	**10**	**557**
Satellite Pipe Domains	**>10.8 ct**	**6-10.8 ct**	**3-5 ct**	**8-10 gr**	**3-6 gr**	**+11 sieve**	**+9 sieve**	**+7 sieve**	**+5 sieve**	**Total Carats**
NVK	5,930	3,113	5,266	3,718	9,441	6,436	2,819	1,063	355	**38,141**
SVK	2,946	1,411	2,626	1,887	4,902	3,420	1,467	551	185	**19,394**
GVK	1,074	942	1,790	1,522	4,230	2,856	1,194	432	139	**14,179**
GVK-SVK Mixed	3,022	1,904	3,283	2,346	6,386	4,698	2,063	783	312	**24,798**
Kimb 7	812	380	501	340	888	540	233	81	29	**3,805**

Table 14-5: Discrete production diamond parcels stones per size class (+2.0mm bottom cut-off)

Main Pipe Domains	>10.8 ct	6-10.8 ct	3-5 ct	8-10 gr	3-6 gr	+11 sieve	+9 sieve	+7 sieve	+5 sieve	Total Stones
Total K1A Grouping	**71**	**103**	**312**	**440**	**2,328**	**4,137**	**3,815**	**2,585**	**1,609**	**15,400**
K1A	*44*	*71*	*194*	*319*	*1,742*	*3,108*	*2,925*	*1,953*	*1,269*	*11,625*
RFW-K1S:K1As	*24*	*29*	*111*	*116*	*546*	*923*	*788*	*558*	*288*	*3,382*
RFW-K1S:XENO-BSLT	*3*	*3*	*8*	*5*	*40*	*106*	*102*	*73*	*53*	*393*
Total K1B Grouping	**43**	**121**	**382**	**472**	**2,601**	**4,649**	**4,323**	**2,858**	**1,632**	**17,080**
K1B-1	*21*	*67*	*229*	*273*	*1,505*	*2,608*	*2,467*	*1,709*	*1,000*	*9,880*
RFW-K1S:K1B-1s	*8*	*16*	*43*	*65*	*401*	*746*	*706*	*474*	*262*	*2,720*
K1B-2	*9*	*28*	*76*	*89*	*447*	*845*	*767*	*455*	*238*	*2,953*
RFW-K1S:K1B-2	*5*	*10*	*35*	*45*	*247*	*450*	*382*	*220*	*132*	*1,526*
K1C	**8**	**18**	**78**	**96**	**528**	**852**	**761**	**431**	**192**	**2,962**
K2	**167**	**334**	**1,080**	**1,339**	**7,898**	**14,262**	**13,129**	**8,413**	**5,058**	**51,679**
K2D	*1*	*4*	*16*	*23*	*111*	*176*	*192*	*104*	*45*	*673*
XENO-BSLT	*10*	*9*	*51*	*85*	*502*	*838*	*776*	*510*	*270*	*3,051*
K6	**70**	**130**	**415**	**526**	**3,232**	**5,903**	**6,235**	**4,724**	**3,176**	**24,411**
K4	**1**	**2**	**16**	**24**	**178**	**250**	**284**	**179**	**103**	**1,037**
Satellite Pipe Domains	**>10.8 ct**	**6-10.8 ct**	**3-5 ct**	**8-10 gr**	**3-6 gr**	**+11 sieve**	**+9 sieve**	**+7 sieve**	**+5 sieve**	**Total Stones**
NVK	240	407	1,364	1,677	9,106	15,122	11,852	6,939	3,594	**50,301**
SVK	116	182	670	852	4,723	8,035	6,166	3,597	1,872	**26,213**
GVK	61	121	462	692	4,115	6,711	5,021	2,819	1,408	**21,410**
GVK-SVK Mixed	139	249	840	1,064	6,138	11,040	8,671	5,111	3,161	**36,413**
Kimb 7	34	45	126	154	853	1,269	980	532	298	**4,292**

Note: Size class abbreviations are “gr” = grainer, and “ct” = carats. Sieve categories follow the standard Diamond Trading Company (DTC) sieve sizes

14.5 Diamond Value Estimate

Diamond value estimates presented in this section have been provided by Gem Diamonds and are based on production and sales information to the end of December 2023. The diamond value estimates incorporate current trends observed through diamond tenders within the 2016 to 2023 time period and are representative of the current status of the diamond market for producers of large, high-quality diamonds such as Letšeng Mine. The QP has reviewed the information and analysis provided by Gem Diamonds and considers them to be reliable and consistent with average US$ per carat prices disclosed in Gem Diamond's half-year and annual reports.

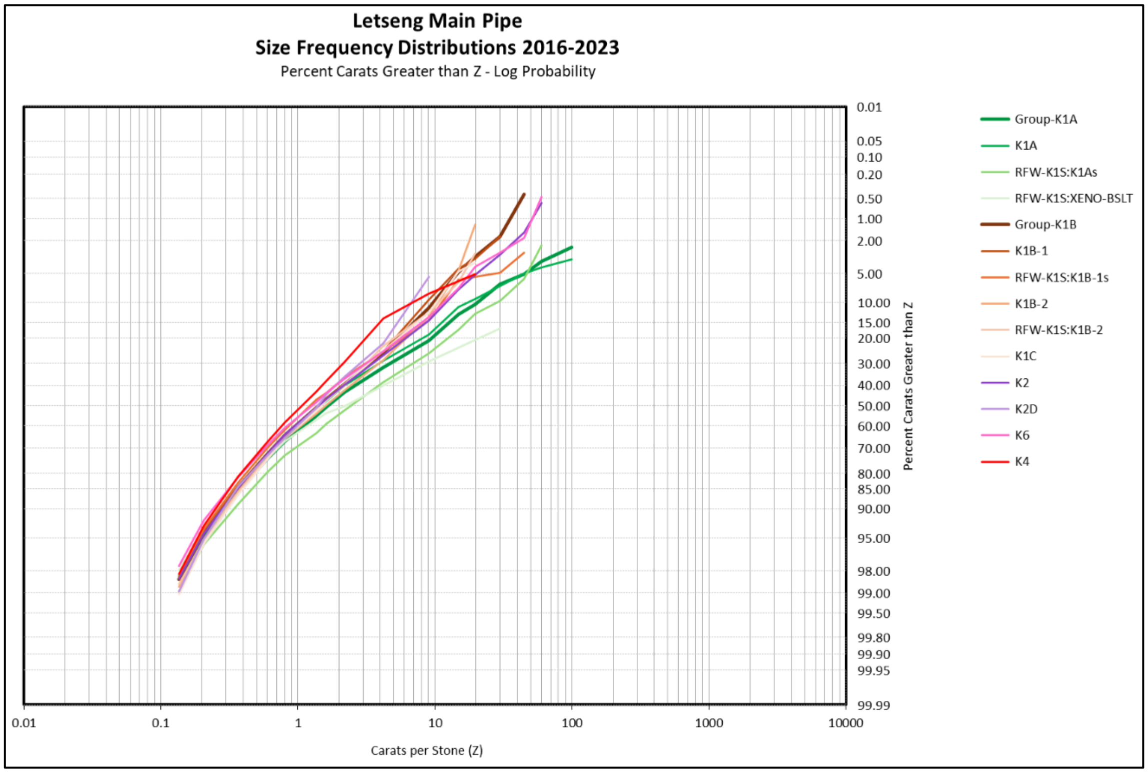
Diamond value estimates are the product of the SFD of a given diamond population and the diamond quality characteristics of that population and are typically unique for each kimberlite domain within a deposit. The 2024 mineral resource estimate for Letšeng incorporates unique diamond value estimates for the internal kimberlite domains within the Satellite and Main pipes based on discrete production and diamond sales data obtained from these domains.

14.5.1 Size Frequency Distribution Model

Details of the discrete production parcel SFDs for the kimberlite domains within the Satellite and Main pipes are summarised in Table 14-6 and expressed as percent of total carats per size category, and presented graphically in Figure 14 6 and Figure 14 7.

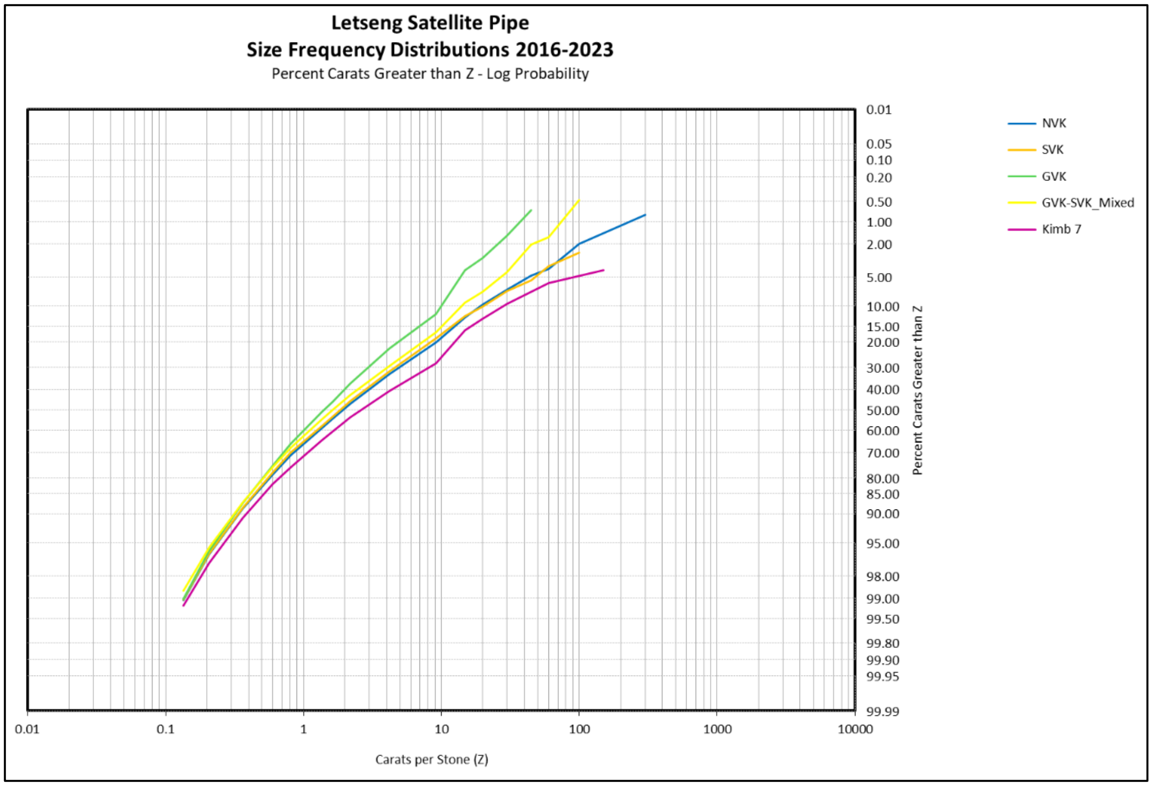
Table 14-6: Discrete production diamond parcels expressed as wt% total carats per size category

Main Pipe Domains	**>10.8 ct**	**6-10.8 ct**	**3-5 ct**	**8-10 gr**	**3-6 gr**	**+11 sieve**	**+9 sieve**	**+7 sieve**	**+5 sieve**	**Total Wt%**
Total K1A Grouping	16.4	7.7	11.6	9.4	23.4	17.1	8.8	3.9	1.5	100
K1A	*14.4*	*7.5*	*10.3*	*9.6*	*24.6*	*18.2*	*9.5*	*4.1*	*1.7*	*100*
RFW-K1S:K1As	*20.7*	*8.3*	*15.2*	*9.4*	*20.9*	*14.4*	*6.9*	*3.1*	*1.0*	*100*
RFW-K1S:XENO-BSLT	*26.9*	*7.4*	*12.1*	*4.2*	*15.8*	*17.6*	*9.5*	*4.4*	*2.1*	*100*
Total K1B Grouping	7.5	8.4	14.3	9.8	25.9	18.8	9.8	4.2	1.5	100
K1B-1	*6.7*	*8*	*15.1*	*9.9*	*26.2*	*18.4*	*9.7*	*4.3*	*1.6*	*100*
RFW-K1S:K1B-1s	*9.9*	*7.6*	*10.8*	*8.9*	*26*	*20*	*10.6*	*4.6*	*1.6*	*100*
K1B-2	*7.3*	*10.5*	*15.2*	*9.9*	*24.2*	*18.6*	*9.4*	*3.6*	*1.2*	*100*
RFW-K1S:K1B-2	*8.6*	*7.9*	*13.1*	*10.2*	*26.9*	*19.4*	*9.2*	*3.4*	*1.3*	*100*
K1C	7.2	7.5	15	10.9	28	18.2	9.1	3.3	1.0	100
K2	10.4	8	13.1	9.2	25.2	18.9	9.7	4.0	1.6	100
K2D	*3.2*	*7*	*15.3*	*12.2*	*29*	*17.7*	*10.8*	*3.8*	*1.0*	*100*
XENO-BSLT	*8.8*	*3.7*	*10.8*	*10.7*	*29.7*	*20.1*	*10.4*	*4.4*	*1.5*	*100*
K6	10.1	7.3	12.1	8.6	24.7	18.6	11	5.4	2.3	100
K4	5.1	3	10.7	9.8	33.4	19.1	12.2	4.9	1.8	100
Satellite Pipe Domains	**>10.8 ct**	**6-10.8 ct**	**3-5 ct**	**8-10 gr**	**3-6 gr**	**+11 sieve**	**+9 sieve**	**+7 sieve**	**+5 sieve**	**Total Wt%**
NVK	15.5	8.2	13.8	9.7	24.8	16.9	7.4	2.8	0.9	100
SVK	15.2	7.3	13.5	9.7	25.3	17.6	7.6	2.8	1.0	100
GVK	7.6	6.6	12.6	10.7	29.8	20.1	8.4	3.0	1.0	100
GVK-SVK Mixed	12.2	7.7	13.2	9.5	25.8	18.9	8.3	3.2	1.3	100
Kimb 7	21.3	10	13.2	8.9	23.3	14.2	6.1	2.1	0.8	100



Source: SRK (2024)

Figure 14-6: Main Pipe SFD models



Source : This study (2024)

Figure 14-7: Satellite Pipe SFD models

As can been seen from Table 14-6, the proportion of total carats in the +10.8 ct size fraction ranges between approximately 7.5% to +16% of total carats recovered for discrete production parcels comprised of over 10,000 total recovered carats (i.e. K1A, K1B, K2 and K6 domains within Main Pipe, and NVK, SVK and GVK domains within Satellite Pipe). The +10.8 ct size fraction is associated with the most significant revenue component of the Letšeng Mine production as discussed in Section 14.5.2.

14.5.2 Value Distribution Models

The 2024 value distribution models are provided in Table 14-7, and are based on discrete production data for each kimberlite domain compiled from 2016 to 2023. The values in this table represent a weighted average of the total carat wt% and realised diamond prices per sieve class contributing to the average diamond price for each kimberlite domain. For kimberlite domains that possess total carat proportions of the +10.8 ct size fraction in excess of 15% (K1A in Main Pipe, and NVK and SVK in Satellite Pipe), average diamond prices range between approximately $2,200 and $2,500 US$/ct reflecting the diamond quality characteristics of each discrete production parcel. For the remaining kimberlite domains that possess total carat proportions of the +10.8 ct size fraction between approximately 7 to 10%, average diamond prices range between approximately $800 to $1,100 US$/ct, reflecting the diamond quality characteristics of each discrete production parcel.

Table 14-7: 2024 value distribution models for Letšeng (US$/ct)

Main Pipe	>10.8 ct	6-10.8 ct	3-5 ct	8-10 gr	3-6 gr	+11 sieve	+9 sieve	+7 sieve	+5 sieve	Average Price (US$/ct)
K1A Grouping	$1,806	$149	$96	$43	$47	$14	$6	$2	$1	$2,170
K1B Grouping	$323	$235	$280	$49	$60	$21	$8	$3	$1	$980
K1C	$321	$235	$280	$49	$60	$21	$8	$3	$1	$980
K2	$712	$171	$132	$42	$48	$17	$7	$2	$1	$1,130
K6	$442	$130	$150	$37	$44	$13	$6	$2	$1	$825
K4	$63	$51	$74	$71	$74	$16	$9	$2	$1	$360
Satellite Pipe	**>10.8 ct**	**6-10.8 ct**	**3-5 ct**	**8-10 gr**	**3-6 gr**	**+11 sieve**	**+9 sieve**	**+7 sieve**	**+5 sieve**	**Average Price (US$/ct)**
NVK	$1,742	$183	$142	$47	$48	$16	$5	$2	$0	$2,185
SVK	$2,006	$301	$124	$40	$43	$15	$5	$1	$0	$2,535
GVK	$537	$193	$113	$39	$56	$22	$7	$2	$1	$970
GVK-SVK Mixed	$880	$273	$147	$42	$48	$20	$7	$2	$1	$1,420
Kimb 7	$1,890	$356	$117	$53	$42	$12	$4	$1	$0	$2,475

For discrete production parcels that contain less than a total of 3,500 recovered carats (i.e. K4 domain in Main Pipe), both the SFD and value distribution models are considered to be low confidence which has been taken into consideration for mineral resource classification. The Main Pipe kimberlite domain K1C is represented by a parcel of 1,993 ct (Table 14-4), though is located immediately adjacent to the K1B domain (represented by 10,537 ct, Table 14-4) with shared similarities in diamond assortment characteristics; the K1C domain has accordingly been assigned a SFD and value distribution model similar to that of the K1B domain.

14.6 Mineral Resource Statement and Classification

A mineral resource is defined by the CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014) as;

> *"a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling."*

CIM further defines "reasonable prospect of eventual economic extraction" as;

> *"a judgment in respect of the technical and economic factors likely to influence the prospect of economic extraction. Assumptions should include estimates of cut-off grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs."*

The 2024 mineral resources for Letšeng Mine have been classified as either Indicated or Inferred mineral resources. No Measured mineral resource has been defined. CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014) define Indicated and Inferred mineral resources as follows;

<u>*Indicated Mineral Resource*</u>

> *An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.*

<u>*Inferred Mineral Resource*</u>

> *An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*

The classification of Indicated resources for the kimberlite domains within the Satellite and Main pipes is based on sufficient drill hole coverage and petrographic analysis to define confident geological contact positions between the kimberlite domains, and the compilation of discrete production data to amass a diamond parcel of over 3,500 cts to estimate SFD and revenue characteristics for each kimberlite domain. Inferred resources are supported by drill hole coverage and petrographic analysis to define the presence of the kimberlite domains without sufficient coverage to confidently define geological contact positions. Internal kimberlite domains not supported by adequate drill coverage and/or a minimum 3,500 ct diamond parcel were not included within the Mineral Resource Statement.

Block model tonnes, grades and revenue estimates were also reviewed to determine the portion of the mineral resource estimate having “reasonable prospects for eventual economic extraction” (RPEEE) from an open pit mine, based on parameters summarised in Table 14-8.

Table 14-8: Assumptions considered for conceptual open pit optimisation

Parameter	Value	Unit
Diamond Price	1.3	Revenue Factor
Waste Mining Cost	2.87	US$ per tonne mined
Ore Mining Cost	4.03	US$ per tonne mined
Processing	4.65	US$ per tonne of feed
General and Administrative	4.01	US$ per tonne of feed
Mining Dilution	2%	Percent
Mining Recovery	98%	Percent
Overall Pit Slope - Ore	49	Degrees
Overall Pit Slope - Waste	59	Degrees
Process Rate	4.8Mt	Tonne feed per year

Mr. Revering considers that the blocks located within the conceptual pit envelopes show RPEEE and can be reported as a mineral resource.

The updated 2024 Mineral Resource Statement for Letšeng Mine is provided in Table 14-9 and is inclusive of mineral reserves.

Table 14-9: Letšeng Diamond Mine Mineral Resource Statement (effective date of 31 December 2023)

Classification	Pipe	Domain	Density g/cm³	Mass (kt)	*Average Value*		*Contained Carats* (kct)
					Diamond Grade (cpht)	**Diamond Price** (US$/ct)	
Indicated	**Main**	K1A	2.52	7,109.60	1.56	$2,170	110.9
		RFW-K1S-K1AS	2.52	2,781.30	1.56	$2,170	43.4
		K1B-1	2.51	7,635.60	1.59	$980	121.4
		RFW-K1S-K1B-1s	2.51	2,417.20	1.59	$980	38.4
		K1B-2	2.51	5,177.20	1.59	$980	82.3
		RFW-K1S-K1B-2	2.51	74.4	1.59	$980	1.2
		K1C	2.51	959.2	1.59	$980	15.3
		K2	2.54	25,793.50	1.61	$1,130	415.3
		K6	2.48	5,682.10	2.47	$825	140.3
		Total Main	***2.52***	***57,630.10***	***1.68***	***$1,211***	***968.5***
	Satellite	NVK	2.5	5,175.60	2.19	$2,185	113.3
		SVK	2.45	7,967.70	2.26	$2,535	180.1
		GVK	2.45	1,746.30	3.46	$970	60.4
		GVK-SVK_Mixed	2.45	1,715.70	3.11	$1,420	53.4
		KIMB7	2.47	1,310.80	2.28	$2,475	29.9
		Total Satellite	***2.47***	***17,916.10***	***2.44***	***$2,088***	***437.1***
TOTAL INDICATED			**2.51**	**75,546.30**	**1.86**	**$1,484**	**1,405.60**
Inferred	**Main**	K1A	2.52	5,929.90	1.56	$2,170	92.5
		RFW-K1S-K1AS	2.52	122	1.56	$2,170	1.9
		K1B-1	2.51	7,152.90	1.59	$980	113.7
		RFW-K1S-K1B-1s	2.51	396.7	1.59	$980	6.3
		K1B-2	2.51	1,371.00	1.59	$980	21.8
		K1C	2.51	348.7	1.59	$980	5.5
		XENO-BSLT	2.66	1,154.90	0.4	$1,130	4.6
		K4	2.52	697.5	1.1	$360	7.7
		K6	2.48	4,952.60	2.47	$825	122.3
		Total Main	***2.51***	***22,126.20***	***1.7***	***$1,217***	***376.3***
	Satellite	SVK	2.45	1,539.30	2.26	$2,535	34.8
		GVK	2.45	309.7	3.46	$970	10.7
		KIMB7	2.47	597.1	2.28	$2,475	13.6
		Total Satellite	***2.45***	***2,446.10***	***2.42***	***$2,238***	***59.1***
TOTAL INFERRED			**2.51**	**24,572.10**	**1.77**	**$1,356**	**435.5**

Notes:

1. The effective date of the Mineral Resource Statement is 31 December 2023. The QP for the estimate is Cliff Revering, P.Eng., an employee of SRK Consulting (Canada) Inc.

2. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. All numbers have been rounded to reflect accuracy of the estimate.

3. Mineral Resources are inclusive of in-situ Mineral Reserves and are exclusive of all mine stockpile material.

4. Mineral Resources are quoted above a +2.00 mm square-mesh bottom cut-off and have been factored to account for diamond losses within the smaller sieve classes.

5. Inferred Mineral Resources are estimated on the basis of limited geological evidence and sampling, sufficient to imply but not verify geological grade and continuity. They have a lower level of confidence than that applied to an Indicated Mineral Resource and cannot be directly converted into a Mineral Reserve.

6. Average diamond value estimates are based on diamond sales data to the end of 2023 provided by Gem Diamond Ltd.

7. Mineral Resources have been estimated with no allowance for mining dilution and mining recovery.

Mr. Revering is not aware of any environmental, permitting, legal, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the mineral resource estimate other than those discussed in the report.

14.7 Previous Mineral Resource Statement

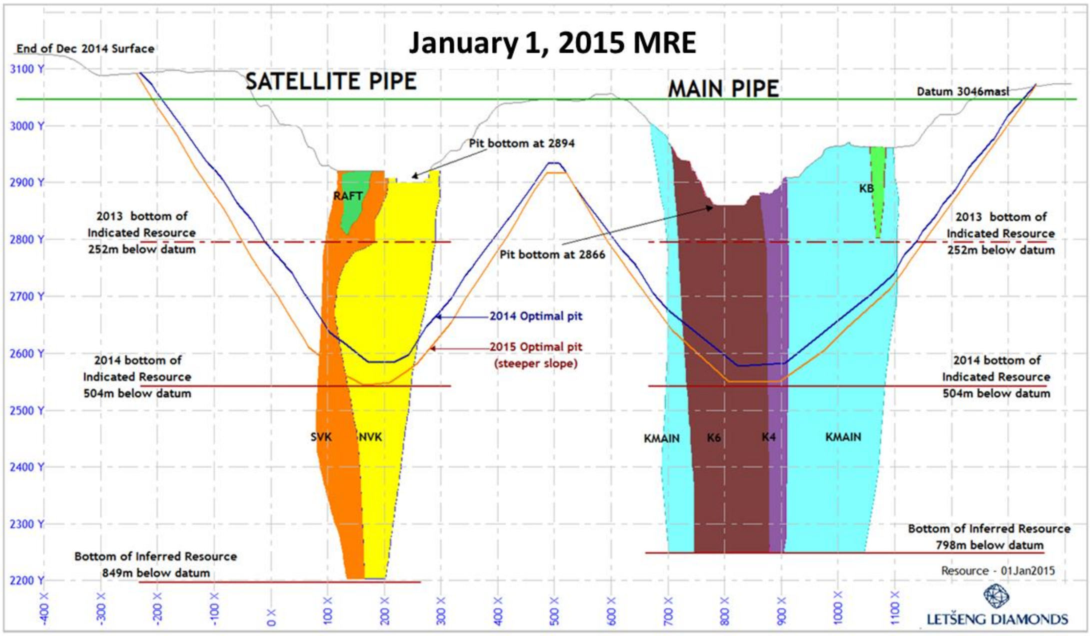
The previous mineral resource estimate for the Letšeng Diamond Mine was reported by Venmyn Deloitte (Pty) Ltd with an effective date of 1 January 2015. A comparison of the current and previous mineral resource estimates is provided in Table 14-10. Both mineral resource estimates are quoted using a bottom cut-off of 2.0 mm.

Table 14-10: Summary comparison of the current and previous mineral resource estimates (MRE)

Indicated Mineral Resource	*1 January 2015, MRE	*1 January 2015 MRE (depleted to 31 December 2023)	31 December 2023 MRE
Tonnes (Mt)	179.2	125.2	75.5
Contained Carats (Mct)	3.14	2.14	1.41
Average Diamond Price (US$/ct)	$2,094	$1,990	$1,458
Inferred Mineral Resource	**1 January 2015, MRE**	***1 January 2015 MRE (depleted to 31 December 2023)**	**31 December 2023 MRE**
Tonnes (Mt)	105.9	104.5	24.6
Contained Carats (Mct)	1.81	1.81	0.44
Average Diamond Price (US$/ct)	$2,063	$2,062	$1,365

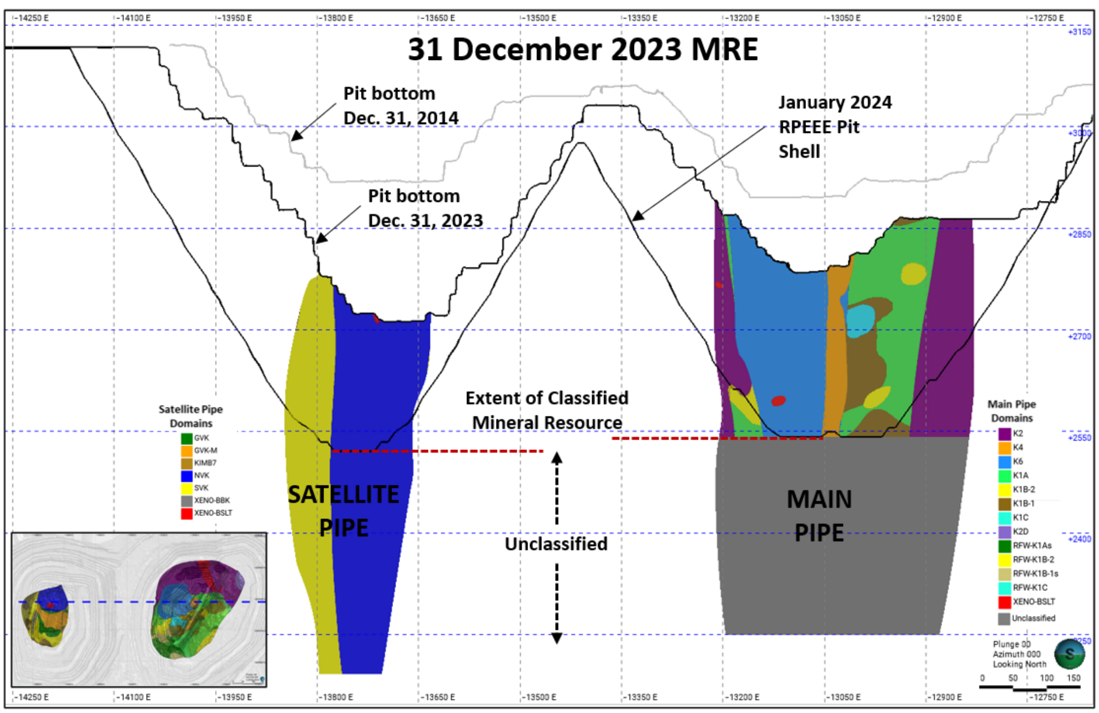
*The 1 January 2015 MRE was quoted at a bottom cut-off of +2.0mm and was not constrained by an RPEEE conceptual pit shell

Variances in estimated tonnes, contained carats and average diamond prices between the mineral resource estimates are due to significant additional drilling and geological interpretation completed since 2015, along with 9 years of mine production, discrete sampling and diamond sales used to inform the current mineral resource estimate to the end of 2023. Cross sections of the 1 January 2015 and 31 December 2023 mineral resource models are provided in Figure 14-8 and Figure 14-9, respectively, depicting the geological models of Satellite Pipe and Main Pipe, depletion surfaces at the time of the Mineral Resource Statements, and extents of the classified mineral resources for each pipe. It should be noted that the 2015 mineral resource estimate was not constrained by a conceptual RPEEE pit shell.



Source: Venmyn Deloitte (2015)

Figure 14-8: Cross section depicting 1 January 2015 Mineral Resource



Source: SRK (2024)

Figure 14-9: Cross section depicting 31 December 2023 Mineral Resource

15 Mineral Reserve Estimates

15.1 Introduction

This section explains the fundamental steps taken for the mine design that includes optimisation, strategic mine planning and final pit design, and it contains the Mineral Reserve Estimate (MRE).

This section must be read along with Section 16 (mining methods).

15.2 Input Parameters

The mine design inputs include the 3D geological model, resource classifications, average diamond prices per ore domain, diamond price escalations, geotechnical parameters, operating costs, mining dilution, mining recovery and mineral processing recovery factors. The geological models were developed by SRK and the other input parameters were provided by Gem Diamonds, which were reviewed by SRK's QPs in each of their respective technical fields.

15.2.1 Average Diamond Prices and Price Escalations

Diamond price estimates used in the pit optimisation were provided by Gem Diamonds and are based on discrete production and sales information from 2016 to the end of December 2023 (see Section 14.5). The SRK QP has reviewed the resource domain pricing information and analysis provided by Gem Diamonds and considers them to be reliable. Table 15-1 shows the average prices per resource domain as of December 31, 2023, reflected in the Mineral Resource Statement (see Section 14.6). These are the base 2023 prices applied in the economic analysis. Real diamond price escalations are applied to the 2023 base prices from 2024 to 2028.

Annual price escalations are determined by Gem Diamonds annually during the business planning process and are based on observed trends in Letšeng's sales data and general diamond market projections. Letšeng's diamond prices are heavily weighted by the high proportion of large special diamonds (>10.8 carats) and the regular recovery of +100 carat "mega" diamonds, as well as high percentages of top-quality Type II diamonds and fancy coloured stones. These characteristics of the Letšeng production distinguish it from the general diamond market. Prices for Letšeng's smaller size fractions do move in line with the general diamond market, however, the large, high-quality assortments follow a different diamond market trend, which has over the past five years remained relatively resilient to general diamond market pressures. For this reason, Gem Diamonds applies conservative and variable diamond price escalations for the first five years of the economic model, and thereafter no price escalation is applied. This forms the base case price escalation scenario. Three alternative price escalation scenarios are also considered in the sensitivity analysis in Section 22.5.

Table 15-1: Average diamond prices per resource domain and annual diamond price escalations

Year		2023	2024	2025	2026	2027	2028	2029+
Real Price Escalations		0.00%	*0.50%*	*0.50%*	*1.00%*	*1.50%*	*2.00%*	*0.00%*
Pipe	Domain	**Average Price ($/ct)**						
Satellite	NVK	2 185	*2 196*	*2 207*	*2 229*	*2 262*	*2 308*	*2 308*
Pipe	SVK	2 535	*2 548*	*2 560*	*2 586*	*2 625*	*2 677*	*2 677*
	GVK	970	*975*	*980*	*990*	*1 004*	*1 024*	*1 024*
	GVK_SVK Mixed (GVK-M)	1 420	*1 427*	*1 434*	*1 449*	*1 470*	*1 500*	*1 500*
	KIMB7	2 475	*2 487*	*2 500*	*2 525*	*2 563*	*2 614*	*2 614*
Main Pipe	K1A	2 170	*2 181*	*2 192*	*2 214*	*2 247*	*2 292*	*2 292*
	RFW-K1S-K1AS	2 170	*2 181*	*2 192*	*2 214*	*2 247*	*2 292*	*2 292*
	RFW-K1S-XENO-BSLT	2 170	*2 181*	*2 192*	*2 214*	*2 247*	*2 292*	*2 292*
	K1B-1	980	*985*	*990*	*1 000*	*1 015*	*1 035*	*1 035*
	RFW-K1S-K1B-1S	980	*985*	*990*	*1 000*	*1 015*	*1 035*	*1 035*
	K1B-2	980	*985*	*990*	*1 000*	*1 015*	*1 035*	*1 035*
	RFW-K1S-K1B-2	980	*985*	*990*	*1 000*	*1 015*	*1 035*	*1 035*
	K1C	980	*985*	*990*	*1 000*	*1 015*	*1 035*	*1 035*
	K2	1 130	*1 136*	*1 141*	*1 153*	*1 170*	*1 193*	*1 193*
	K4	360	*362*	*364*	*367*	*373*	*380*	*380*
	K6	825	*829*	*833*	*842*	*854*	*871*	*871*
	XENO-BSLT	1 130	*1 136*	*1 141*	*1 153*	*1 170*	*1 193*	*1 193*

Source: Gem Diamonds (2023)

Average diamond prices for stockpiles are shown in Table 15.2 and are based on the proportions of various ore domains on each stockpile as at December 31, 2023. Stockpiles are reported as separate line items in the reserve statement (Table 15.9).

Table 15-2: Average diamond prices for stockpiles

Source	Stockpile	Average Price ($/ct)
Satellite Pipe	Satellite Stockpiles	2 287
Main Pipe	Main Pipe Stockpiles	1 574
Satellite and Main Pipe	Live Cone Stockpile	1 190

Source: Gem Diamonds (2023)

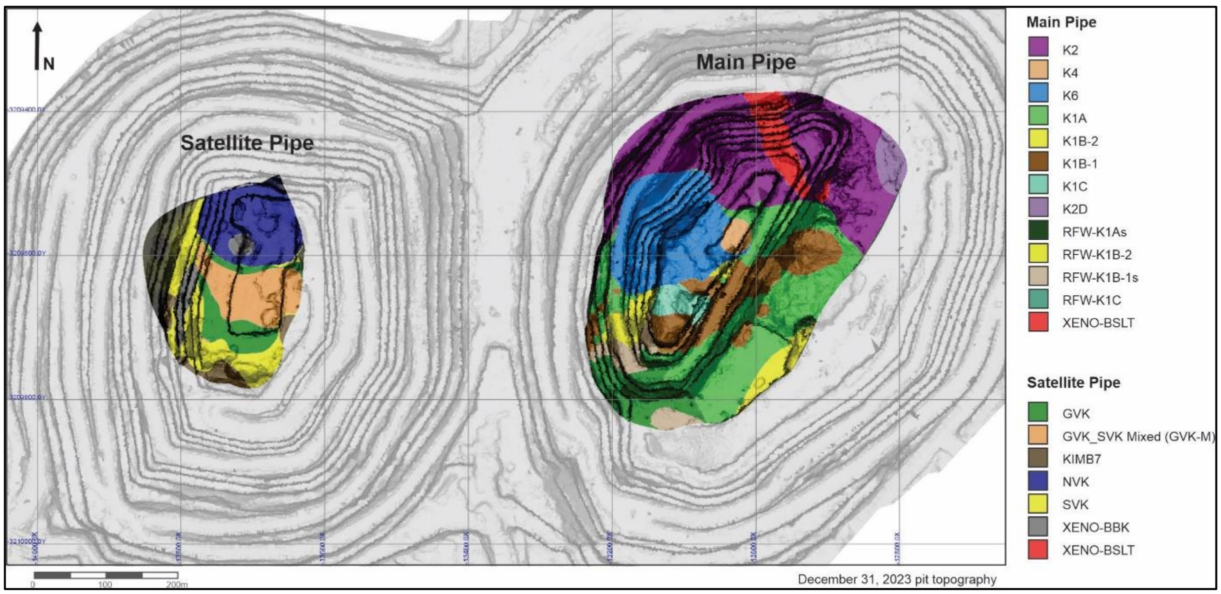
15.2.2 Geological Models

SRK was commissioned to update the geological models and complete the mineral resource estimate for the Main and Satellite Pipes (refer to Sections 7 and 14).

Main Pipe comprises 13 different domains, including 11 kimberlite domains and two basalt xenolith/ breccia domains. Some of the domains have been grouped for reserve estimation, resulting in five domains for Main Pipe in the reserve estimate.

Satellite Pipe comprises five kimberlite domains and an additional two basalt xenolith/breccia domains.

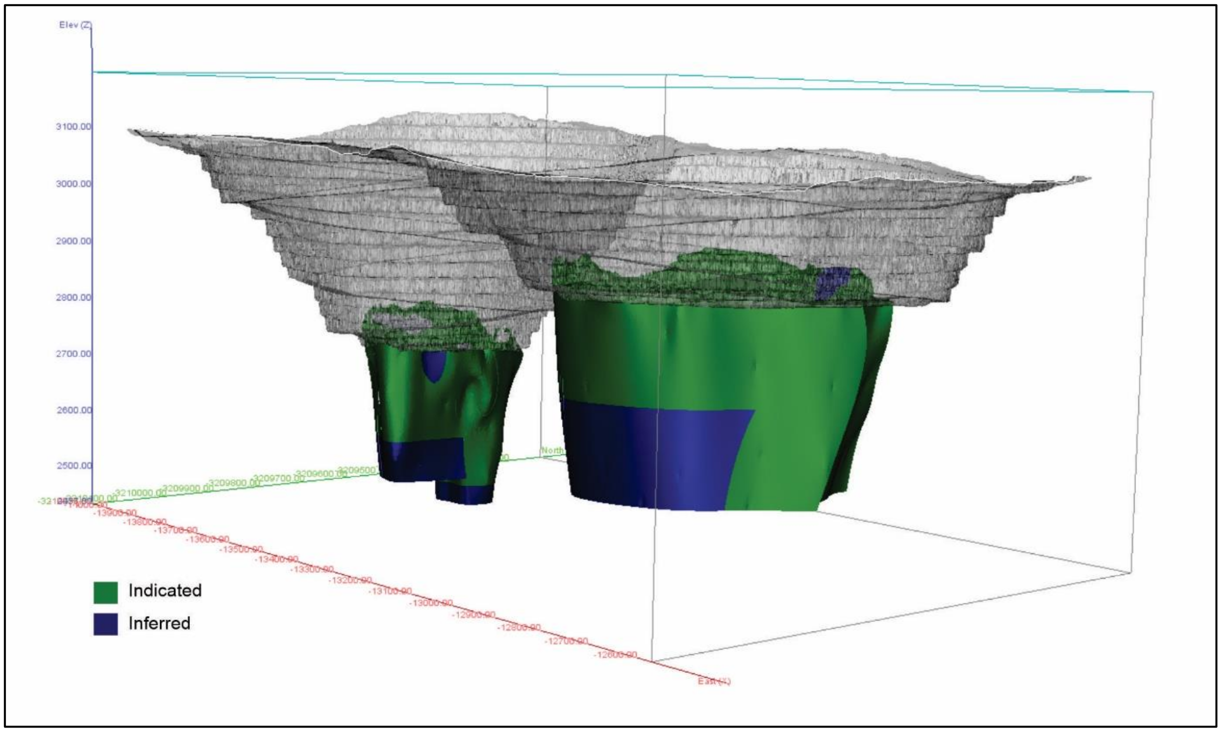
A plan view of the geological models clipped against the 31 December 2023 pit topography is shown in Figure 15-1.



Source: Gem Diamonds (2023)

Figure 15-1: Plan view of Main Pipe and Satellite Pipe geological models as at 31 December 2023

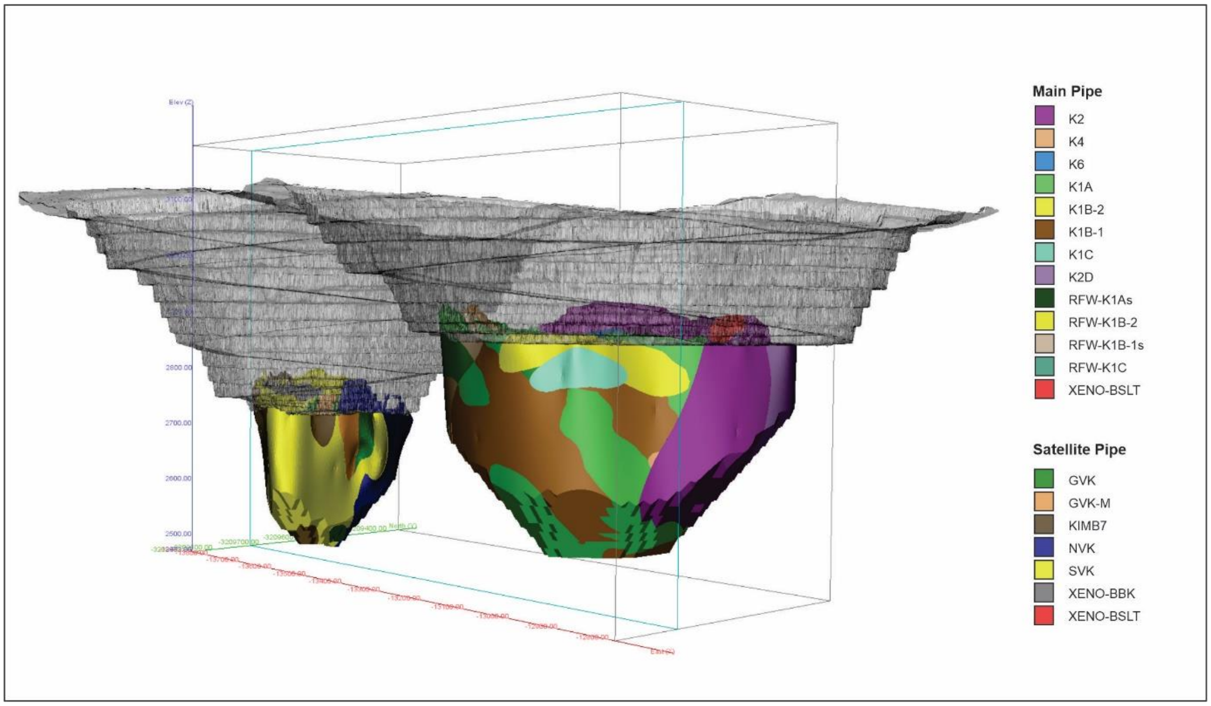
SRK classified the inventory within the geological models as Indicated, Inferred or unclassified, depending on the levels of confidence in the geological contacts and internal continuity, densities, grades and prices. The extents of the Indicated and Inferred resources are shown in Figure 15-2. The domains with insufficient information on any of the resource parameters were unclassified and omitted from the Resource Statement. Further work is required to upgrade the unclassified inventory to Resource levels.



Source: Gem Diamonds (2023)

Figure 15-2: Isometric view of Indicated and Inferred Resource classifications

Figure 15-3 shows the geological models clipped to the resource conceptual pit shell. Ore that is not within the resource pit shell and does not currently demonstrate economic viability, does not qualify as resource, even though parts may have been classified as Indicated or Inferred based on the QPs' confidence in the information supporting assumptions regarding geological continuity.



Source: Gem Diamonds (2023)

Figure 15-3: Isometric view of Main Pipe (right) and Satellite Pipe (left) Resources within the RPEEE shell at 31 December 2023

The block model information is shown in Table 15-3.

Table 15-3: Letšeng block model origin coordinates and extents

	Minimum	Maximum	Block size (m)	Number of blocks
X	-14,280	-12,470	10	181
Y	-3,210,300	-3,209,010	10	129
Z	3,186	4,194	14	72

Source: SRK (2023)

The model contains 75.5 Mt of Indicated resource at an average grade of 1.86 cpht. This includes 57.6 Mt at 1.68 cpht from Main Pipe and 17.9 Mt at 2.44 cpht from Satellite Pipe. It is estimated that there are 1.4 Mcts of diamonds in the combined resource. Table 15-4 presents a summary of the resource estimate for the Main and Satellite Pipes.

It is estimated that there are 24.6 Mt of Inferred resources at a grade of 1.77 cpht in the combined Main and Satellite pipes. Inferred resources are not used in the mineral reserve estimation.

Table 15-4: Summary of the Mineral Resource Estimate

Classification	Pipe	Density (t/m^3)	Ore Quantity (kt)	Grade (cpht)	Carats Quantity (kcts)	Average (US$/ct)
Indicated	Main Pipe	2.52	57,630.10	1.68	968.5	$1,211
	Satellite Pipe	2.47	17,916.10	2.44	437.1	$2,088
TOTAL INDICATED		**2.51**	**75,546.30**	**1.86**	**1,405.60**	**$1,458**
Inferred	Main Pipe	2.51	22,126.20	1.7	376.3	$1,217
	Satellite Pipe	2.45	2,446.10	2.42	59.1	$2,238
TOTAL INFERRED		**2.51**	**24,572.10**	**1.77**	**435.5**	**$1,365**

Source: SRK (2024)

Additional details on the mineral resource estimate are presented in Section 14 of this report. In a separate optimisation, the Inferred resources were included to evaluate future potential expansion and resource development opportunities.

15.2.3 Operating Costs

Until recently Letšeng Mine employed an outsourced model for most of its key functions including mining and treatment; however, in late 2023 the mine started the process of converting to a fully owner-miner operation. The existing mining cost budgeting models that have been used between Letšeng and the contractor have been adapted to inform the owner-miner costing model. The immediate benefits of the owner-miner model have been included in the 2024 costs. The broad programme to manage operating costs across all functions going forward has been presented to SRK. Letšeng expects to have a reduction in operating cost due to this transformation which is reflected in the operating costs used in this report and listed in Table 15-5.

Table 15-5: Operating unit costs

Operating Costs Used in Pit Optimisation	Unit	Cost/Dry tonne
Waste mining cost - Reference bench 2878 (Bench 52)	US$/t mined	2.87
Ore mining cost	US$/t mined	2.87
Additional ore mining cost	US$/t mined	1.15
Treatment cost	US$/t treated	4.65
Overhead cost	US$/t treated	4.01
Processing Cost$_{whittle}$	US$/t Processed	9.81

Source: Gem Diamonds (2023)

The reference mining cost (at reference elevation of 2878 masl) is US$2.87 per tonne mined. The mining operating cost increases by US$0.05/tonne per 14 m drop for lower benches, which will cover the additional haulage cost for each bench below the reference elevation.

The processing costs are based on the 2024 budget costs supplied by Letšeng Mine and rolls up all the non-mining (ore and waste) costs. The cost of processing applied in the pit optimisations is US$9.81 per tonne processed. The processing costs include:

- Additional ore mining costs (US$1.15 per tonne to allow for ore additional hauling, blast pattern differences, grade control, etc.)
- Treatment costs
- General and administrative (G&A) costs

15.2.4 Processing Recoveries

The Letšeng Mine mineral resource grades used for pit optimisation are based on the actual Letšeng plant diamond recoveries, which already incorporated all plant screening, recovery (planned and incidental) and liberation efficiency factors. Therefore, for the pit optimisation, no additional plant modifying factors were applied. The plant bottom cut-off is 2 mm with the diamond cut-off at 7# (diamond sieve), with all diamonds below 7# being recorded as incidentals.

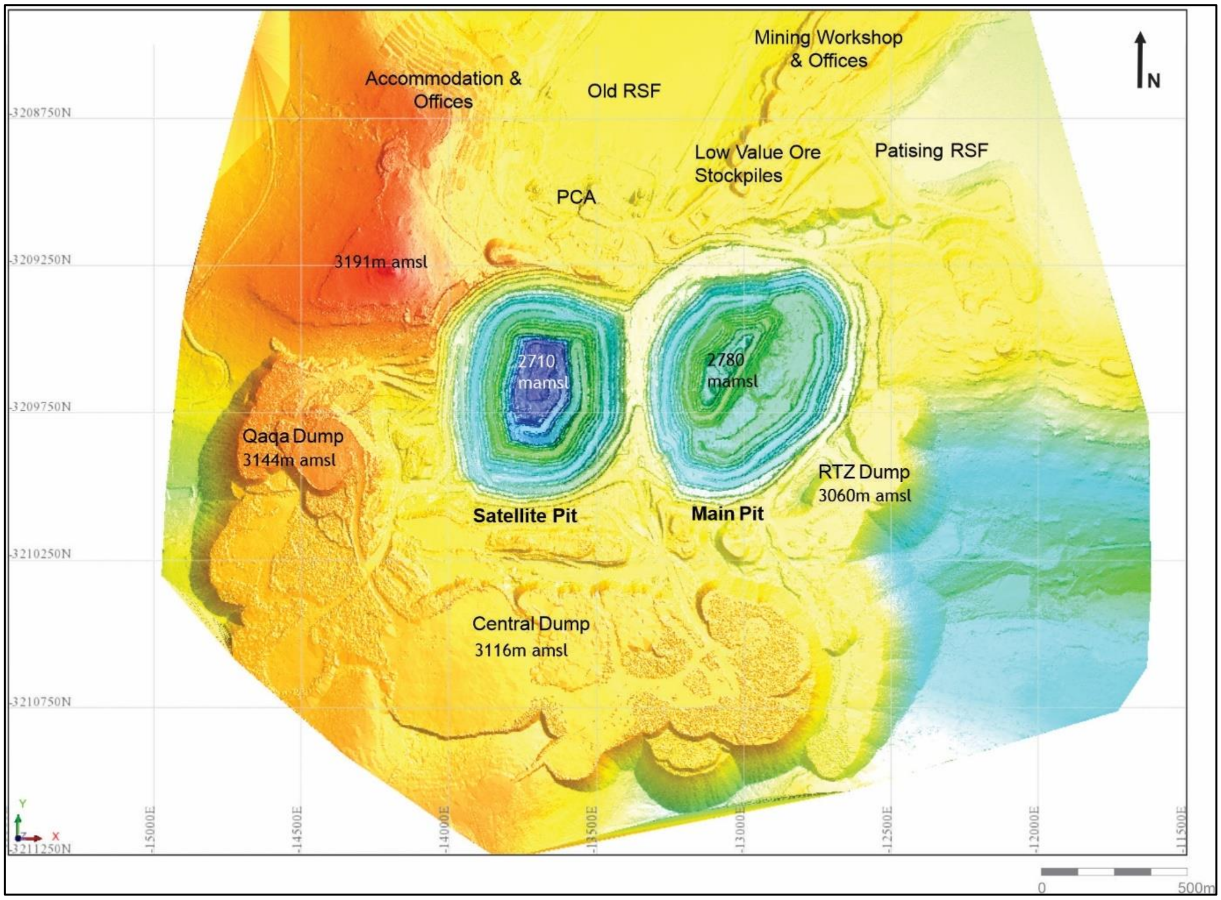
For additional information about processing recovery, refer to Sections 13 and 17.

15.2.5 Constraints

There are no constraining elements for mining the pits. Therefore, no boundary or relocation constraints were applied to the pit optimisation.

15.2.6 Topography

The end of November 2023 survey face position was the latest topography available at the time of pit optimisation and the initial pit designs. The final pit designs, reserve statement and the production schedules have been adjusted using the end of December 2023 pit topography when it became available (Figure 15-4).

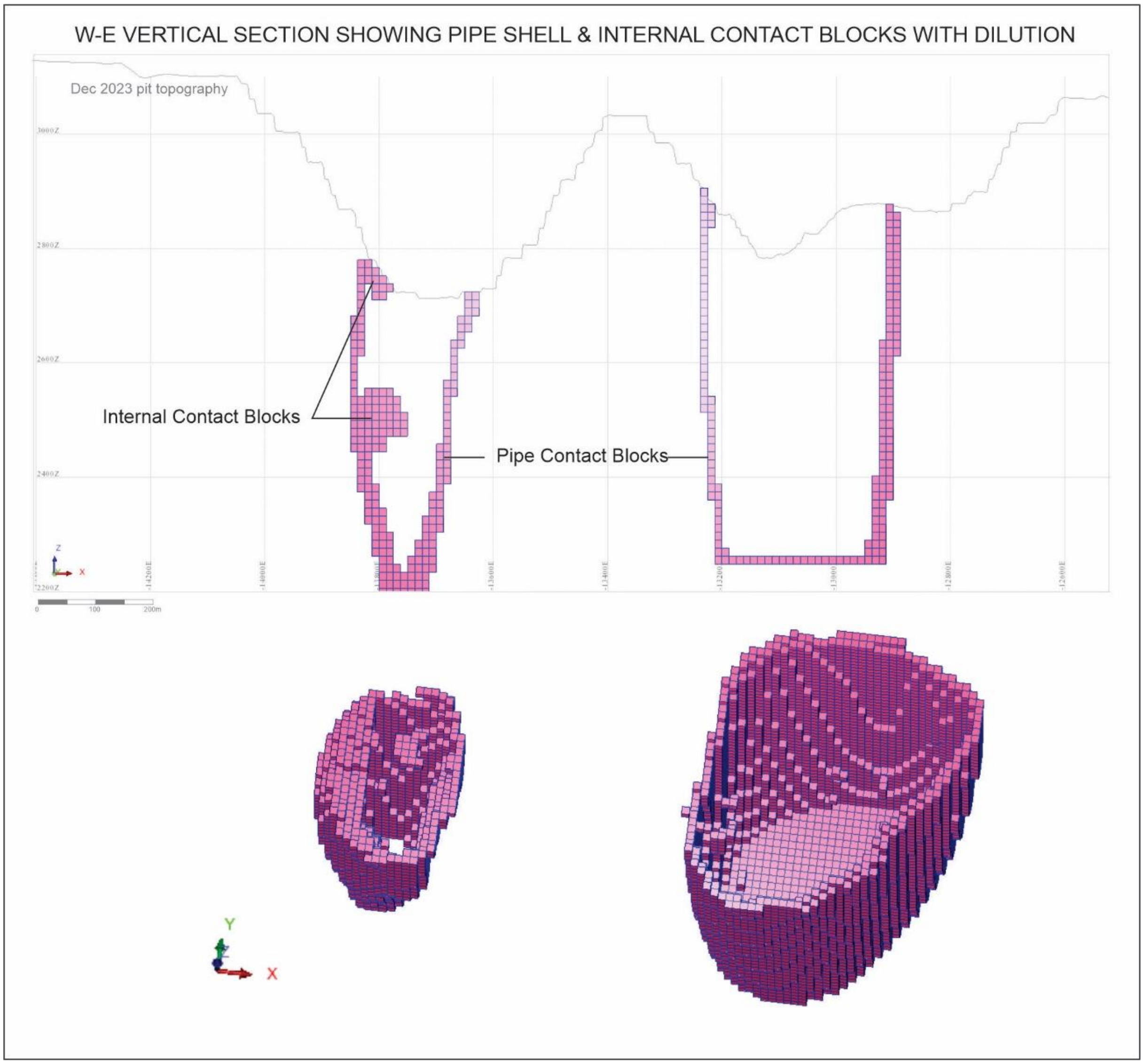


Source: Gem Diamonds (2023)

Figure 15-4: December 2023 mine site topography

15.2.7 Dilution and Ore Loss

Mining dilution refers to the incorporation of waste into the plant feed whilst mining recovery refers to the loss of ore to the WRD. Dilution and ore loss occur for the resources at the contact areas of ore and waste and low-grade resources, as well as spillage from mining pushbacks being blasted onto the ore benches. Mining dilution and mining recovery were determined based on a combined 12% skin dilution and 88% mining recovery on individual marginal blocks. In this study, 12% of the volume of ore in marginal blocks is assumed to be lost to the WRD whilst a similar volume of waste is added to the ore and sent to the plant for the same marginal blocks. This dilution philosophy also applied to blocks in contact with basalt rafts as shown in Figure 15-5. In the past, the average dilution has been observed to be at about 2%, whilst resource recovery is about 98%. Kimberlite will continue to be blasted separately as long as it is safe and practical in the interest of minimising or eliminating dilution.



Source: Gem Diamonds (2023)

Figure 15-5: Kimberlite pipe and basalt raft contact blocks with 12% dilution and 88% mining recovery in the scheduling block model

15.2.8 Slope Design Parameters

The overall slope angles indicated in Table 15-6, which include provision (flattening) for ramps, were used in the Whittle slope analysis module, while the pit design used the inter-ramp angles. For detailed geotechnical information please refer to Section 16.

Table 15-6: Slope design parameters

Geotechnical Design Component	Angle (degrees)
FOR WHITTLE:	
Basalt Overall Slope	59
Kimberlite Overall Slope	49
FOR PIT DESIGN:	
Basalt inter-ramp angle – measured toe-to-toe over a 3x double-bench inter-ramp stack with 84 m height	70
Note: At ramp switch backs, the inter-ramp stack was allowed to increase to a 4 to 5x double-bench inter-ramp stack with maximum 10 m height (Lefu, 2018)	
Kimberlite inter-ramp angle – measured toe-to-toe over a 4x single bench inter-ramp stack with 56 m height	57

Source: Itasca (2022)

15.3 Pit Optimisation Results

This section describes the optimisation model and presents the optimisation results (Table 15-7) obtained from the Whittle software program. The optimisation was carried out for revenue factors from 0.3 to 1.2 with 0.02 increments. Revenue factor 1 refers to the base case prices introduced in Table 15-1.

By plotting the pit number, revenue factor, ore and waste tonnes in a table and graph, the step changes in pit size linked to the revenue factor are identified. The selected pits for pushback and final pits are highlighted in Table 15-7. Pit 16 can guide the design for first phase, pit 30 is the pit with highest NPV under parameters discussed in this report, while pit 35 has been selected for the final pit design. Pit 36 is the base case pit at revenue factor 1 and is therefore the pit that matches the base case input parameters.

Table 15-7: Pit optimisation results

Pit	Shell Revenue Factor	Ore (Tonnes)	Carats	CPHT	Waste (Tonnes)	Total (Tonnes)	Strip Ratio
1	0.3	125 182	2 774	2.22	47 276	172 458	0.4
2	0.32	359 627	7 984	2.22	202 733	562 360	0.6
3	0.34	1 065 155	25 423	2.39	211 934	1 277 089	0.2
4	0.36	2 339 724	59 136	2.53	461 368	2 801 092	0.2
5	0.38	3 291 186	85 234	2.59	824 838	4 116 024	0.3
6	0.4	4 007 645	103 216	2.58	1 389 251	5 396 896	0.3
7	0.42	4 721 367	121 069	2.56	2 103 800	6 825 167	0.4
8	0.44	7 116 045	168 462	2.37	3 595 672	10 711 717	0.5
9	0.46	10 261 855	231 960	2.26	6 337 601	16 599 456	0.6
10	0.48	11 354 579	257 650	2.27	8 318 852	19 673 431	0.7
11	0.5	13 695 456	310 010	2.26	12 562 581	26 258 037	0.9
12	0.52	14 096 368	317 518	2.25	13 368 451	27 464 819	0.9
13	0.54	15 873 210	358 926	2.26	19 009 712	34 882 922	1.2

Pit	Shell Revenue Factor	Ore (Tonnes)	Carats	CPHT	Waste (Tonnes)	Total (Tonnes)	Strip Ratio
14	0.56	16 981 240	382 564	2.25	22 027 455	39 008 695	1.3
15	0.58	17 770 778	399 531	2.25	25 253 812	43 024 590	1.4
16	0.6	18 667 143	419 940	2.25	28 519 430	47 186 573	1.5
17	0.62	21 157 215	461 613	2.18	28 583 304	49 740 519	1.4
18	0.64	21 331 565	464 921	2.18	28 921 270	50 252 835	1.4
19	0.66	22 970 150	495 695	2.16	32 084 054	55 054 204	1.4
20	0.68	23 908 570	515 215	2.15	35 822 388	59 730 958	1.5
21	0.7	24 433 772	525 514	2.15	38 215 648	62 649 420	1.6
22	0.72	25 424 415	543 057	2.14	39 636 459	65 060 874	1.6
23	0.74	30 214 167	628 631	2.08	47 153 723	77 367 890	1.6
24	0.76	31 560 379	650 548	2.06	47 850 972	79 411 351	1.5
25	0.78	34 060 708	698 378	2.05	57 056 203	91 116 911	1.7
26	0.8	36 718 977	740 085	2.02	58 102 970	94 821 947	1.6
27	0.82	40 695 781	804 068	1.98	62 700 780	103 396 561	1.5
28	0.84	43 524 673	852 074	1.96	68 541 041	112 065 714	1.6
29	0.86	44 522 042	869 702	1.95	71 709 788	116 231 830	1.6
30	0.88	45 470 197	885 931	1.95	73 733 523	119 203 720	1.6
31	0.9	46 626 458	904 927	1.94	75 529 560	122 156 018	1.6
32	0.92	48 372 382	937 254	1.94	83 971 823	132 344 205	1.7
33	0.94	49 387 666	953 749	1.93	84 968 907	134 356 573	1.7
34	0.96	54 258 432	1 030 241	1.9	88 054 056	142 312 488	1.6
35	**0.98**	**56 044 424**	**1 058 255**	**1.89**	**88 498 385**	**144 542 809**	**1.6**
36	1	58 101 441	1 094 462	1.88	97 236 117	155 337 558	1.7
37	1.02	58 663 372	1 103 272	1.88	97 950 491	156 613 863	1.7
38	1.04	59 097 211	1 110 525	1.88	99 084 159	158 181 370	1.7
39	1.06	60 378 122	1 130 857	1.87	101 267 183	161 645 305	1.7
40	1.08	61 367 897	1 149 687	1.87	108 328 057	169 695 954	1.8
41	1.1	62 700 224	1 170 833	1.87	110 484 532	173 184 756	1.8
42	1.12	63 102 281	1 177 155	1.87	111 039 449	174 141 730	1.8
43	1.14	63 340 723	1 181 054	1.86	111 727 146	175 067 869	1.8
44	1.16	63 580 869	1 186 363	1.87	115 311 071	178 891 940	1.8
45	1.18	64 487 601	1 200 738	1.86	117 068 491	181 556 092	1.8
46	1.2	64 869 655	1 207 150	1.86	118 726 485	183 596 140	1.8

Source: Mark Gallager (2023)

15.4 Pit Size Selection and Preliminary Economic Analysis

The final pit size selection is a corporate strategic decision when weighing up the benefits, risks and returns against the investment criteria and strategic plan of the Group. Pit optimisation and the pit value analysis help decision makers to understand the sensitivity of the techno-economic outcomes of various pit sizes.

The various pit values are derived from the respective technical and economic parameters and appropriate production rates for each of the selected revenue factors. Additional inputs used for the Net Present Value (NPV) analysis are listed in Table 15-8.

Note that these input parameters are for strategic mine planning and pit value analysis. Some of the inputs for the financial model may slightly be different.

Table 15-8: Input for discounted pit value analysis

Royalties and Financials	**Unit**	**Value**
Lesotho Government Royalties and Marketing	%	10.00%
Discount Rate	%	10.00%
Sales and Marketing	%	1.50%
Annual time costs	US$m/year	3.04
Exchange rate	Rand:US$	18.9
Production rates Base tpa-dry	**Unit**	**Value**
Processing - 2024	tpa	4 585 352
Processing - 2025	tpa	4 776 408
Processing – 2026+	tpa	4 842 747
Mining Rate, maximum per year, as a guide.	tpa	As required
Capital costs amount - $m	**Unit**	**Value**
Year 1 (2024)	US$m	5.99
Year 2 (2025)	US$m	1.06
Year 3 (2026)	US$m	2.63
Year 4 (2027)	US$m	2.83
Year 5 (2028)+	US$m	2.4

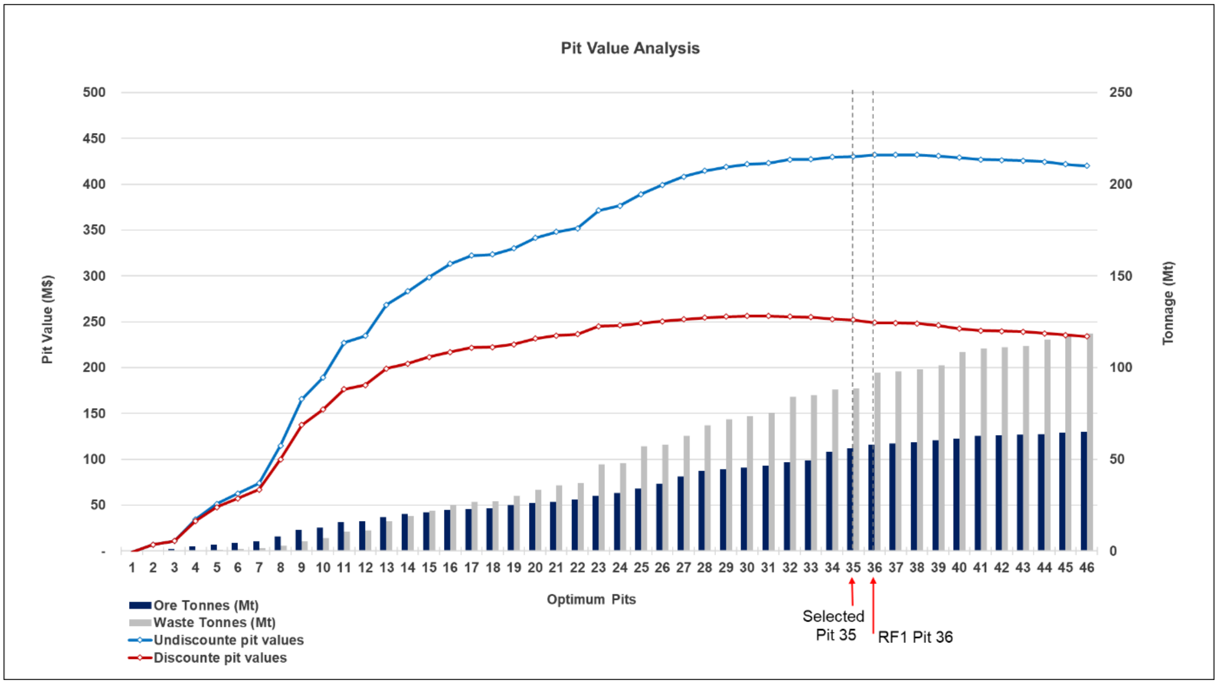
Source: March Gallager (2023)

The outputs of the various optimisation runs are collated and presented in a table and graph format, from which the optimal or appropriate pit shell can be selected. Usually, the pit with the highest NPV or close to it is selected for the final pit design; however, as mentioned before, there may be other corporate strategic drivers that result in an alternative pit shell being selected.

In this process, Whittle produces three NPV curves, Best, Specified and Worst. The best case mines each preceding pit from inside out to final limit – the highest value method but impractical. The worst case mines the pits from top down – the more practical compared to the best case but achieves lower value. The specified case incorporates pushbacks and operational considerations specified in the model. This specified case is the most practical as it attempts to simulate mining constraints producing a value between the best- and worst-case scenarios. It is normal to select final pits based on the specified method of optimisation.

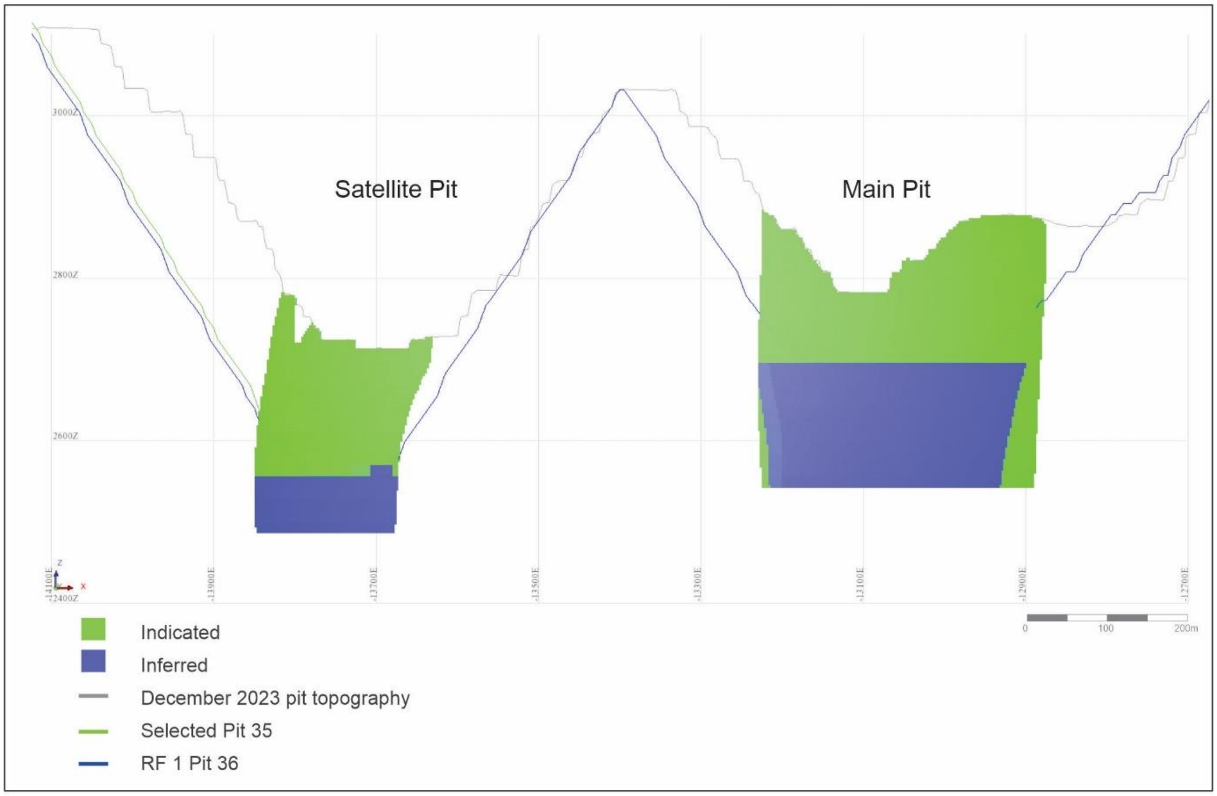
In this model, discounted pit values do not change significantly for a wide range of pit sizes. This is due to the shape of topography, orebody and the overall changes in the in-situ weighted revenue per tonne with depth. Pit 30 has the highest discounted value; however, it leaves behind a significant amount of ore in the main pit where the expansion would be difficult or impossible if selected as the final pit. Pit 35 has almost the same discounted value but provides a better opportunity for potential pit expansion and allows for more practical pushbacks; therefore, pit 35 was selected as the final shell to guide the final pit design used for reserve estimation.

Figure 15-6 shows the undiscounted and discounted pit values for the specified case. Figure 15-7 shows a section of the optimal pit and ore classification, confirming that the pit is based on Indicated resources.



Source: Mark Gallager (2023)

Figure 15-6: Pit value analysis



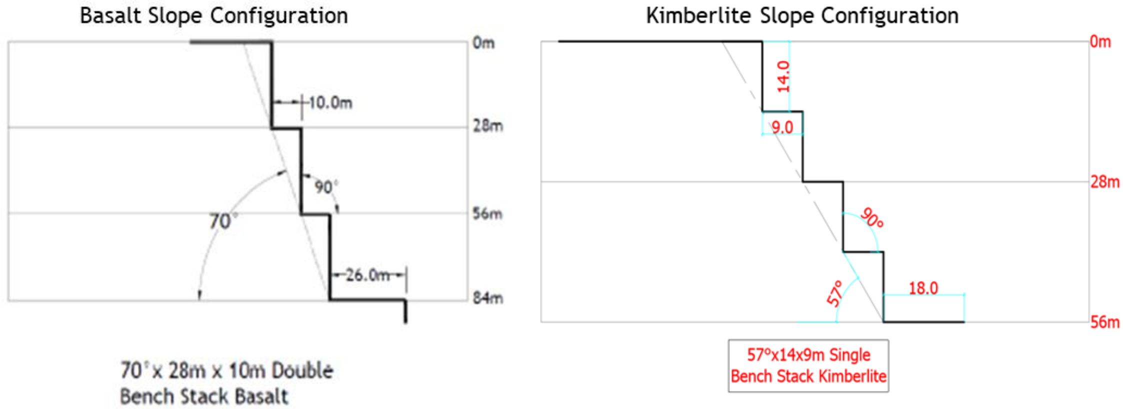
Source: Gems Diamonds (2023)

Figure 15-7: W-E Section showing topography, optimal pits and ore classification

15.5 Final Pit Design

The final pit design adopted for the Letšeng 2024 LOM plan update was completed using Geovia Surpac software. Whittle shell 35 was used as a guide for developing the final pit design as much as was practical and safe to target the Indicated resource in both Satellite and Main pipes.

The stack configurations used in developing the final pit designs are shown in Figure 15-8. Additional details on the slope configuration are presented in Section 16 of this report.



Source: Gem Diamonds (2023)

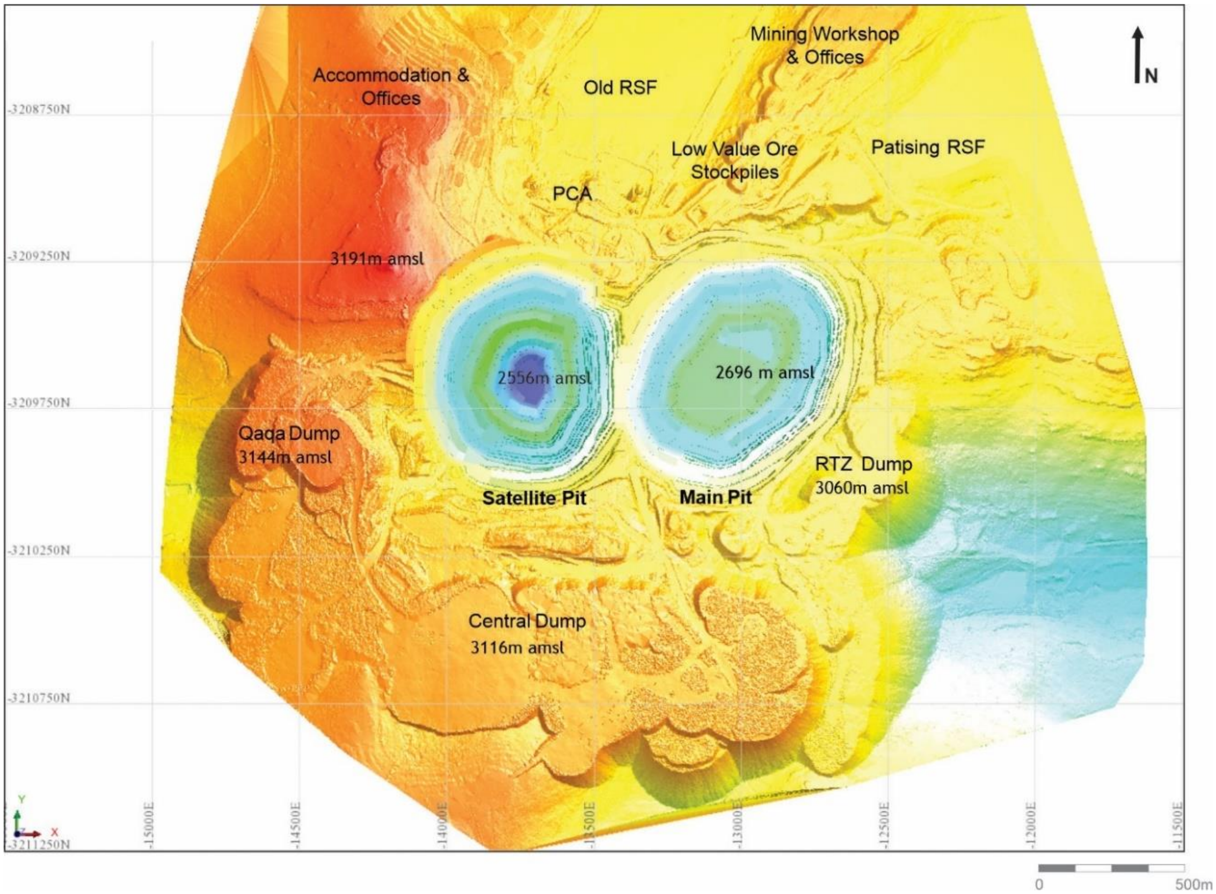
Figure 15-8: Basalt and kimberlite bench stack configuration

The detailed designs are based on the recommended geotechnical parameters for basalt and kimberlite. Detailed pit designs for the two kimberlite pipes were generated with the following considerations:

- Double lane haul ramps designed to allow for a minimum of three (3) truck widths as the running surface along straight sections of the ramp and four (4) truck widths on bends and a berm;
- Catchment benches (9 m in kimberlite and 10 m in basalt);
- Minimum mining widths (46.8 m excluding a 25 m trim block);
- 14.0 m benches in kimberlite; and
- 28 m double benching in basalt.

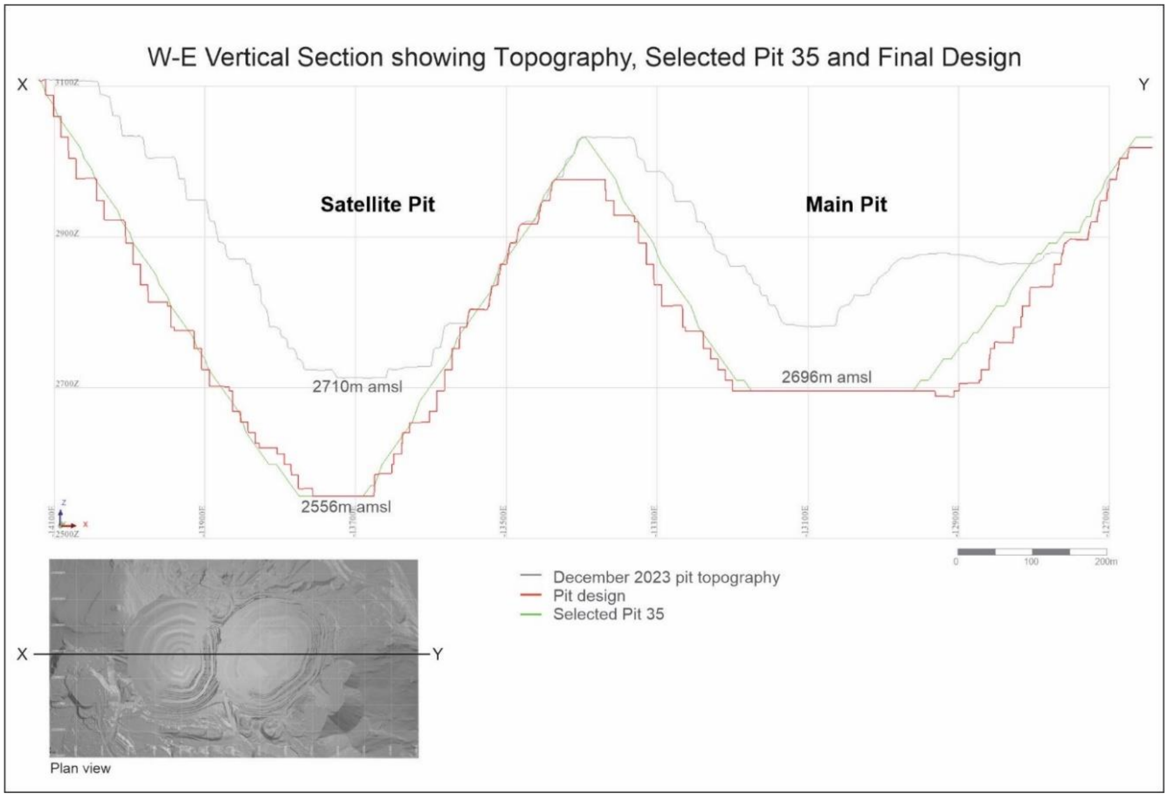
Ramp orientations have been established to optimise exit distances relative to the waste rock dumps and the primary crushing area tip bins. Ramps are made up of concentric (mostly in kimberlite) and switchback designs (mostly in basalt). All stated reserves for the Letšeng Mine exist within the detailed pit designs except for ore on the surface stockpiles.

Figure 15.9 shows the final pit design clipped to topography. Figure 15.10 shows a cross-section with topography, the final pit design, and the selected Whittle shell.



Source: Gem Diamonds (2023)

Figure 15-9: Letšeng final pit design clipped to topography



Source: Gem Diamonds (2023)

Figure 15-10: W-E Section showing final pit design, topography, and the selected pit 35

15.6 Mineral Reserves Summary

The mineral reserve estimate for the Letšeng Mine has been prepared as part of the 2024 Mineral Resource and Reserve Statement and is in accordance with the CIM Definition Standards adopted in May 2014 (CIM, 2014). The mineral reserves were derived from the mineral resource block models and stockpiled mineral resources that are presented in Section 14. The mineral reserves of each of the two open pits are based on Indicated mineral resources that have been identified as being economically extractable and which incorporate mining losses and mining waste dilution. The mineral reserves include 62 Mt of mineable ore from the two open pits and 1.10 Mt of existing stockpile material at an average grade of 1.85 cpht and 1.28 cpht, respectively.

A summary of the surface mineable mineral reserves for each pipe is shown in Table 15-9. There are no known legal, political, environmental, permitting, socio-economic or other risks that could materially affect the probable mineral reserves.

15.7 Mineral Reserve Statement

The mineral reserves for the Letšeng Diamond Mine (Table 15-9) were converted from the Indicated mineral resources using the modifying factors discussed in this report. The mineral reserve is classified as Probable after converting the Indicated resources reported in Section 14.

Table 15-9: Open pit Mineral Reserve Estimate for the Letšeng Diamond Mine (effective date 31 December 2023)

Classification	Pipe	Domain	Mass (kt)	Average Value		Contained Carats (kct)
				Diamond Grade (cpht)	Diamond Price (US/ct)	
Probable	Main	K1A Grouping	9 450.1	1.55	2 170	146.5
		K1B Grouping	14 790.2	1.58	980	233.6
		K1C	935	1.57	980	14.7
		K2	17 512.4	1.6	1 130	279.6
		K6	5 250.8	2.48	825	130.2
		Total Main	**47 938.5**	**1.68**	**1 252**	**804.6**
	Satellite	NVK	3 442.5	2.16	2 185	74.4
		SVK	6 164.0	2.22	2 535	136.6
		GVK	1 673.5	3.45	970	57.8
		GVK-SVK Mixed	1 674.4	3.09	1 420	51.7
		KIMB7	1 200.9	2.2	2 475	26.4
		Total Satellite	**14 155.5**	**2.45**	**2 128**	**346.9**
	Stockpile	Live S/P	11.2	1.95	1 754	0.2
		Main Pipe S/P	900.7	1.25	1 190	11.2
		Satellite Pipe S/P	176.6	1.41	2 287	2.5
		Total Stockpiles	**1 088.5**	**1.28**	**1 374**	**13.9**
TOTAL PROBABLE			**63 182.3**	**1.85**	**1 450**	**1 165.5**

Notes:

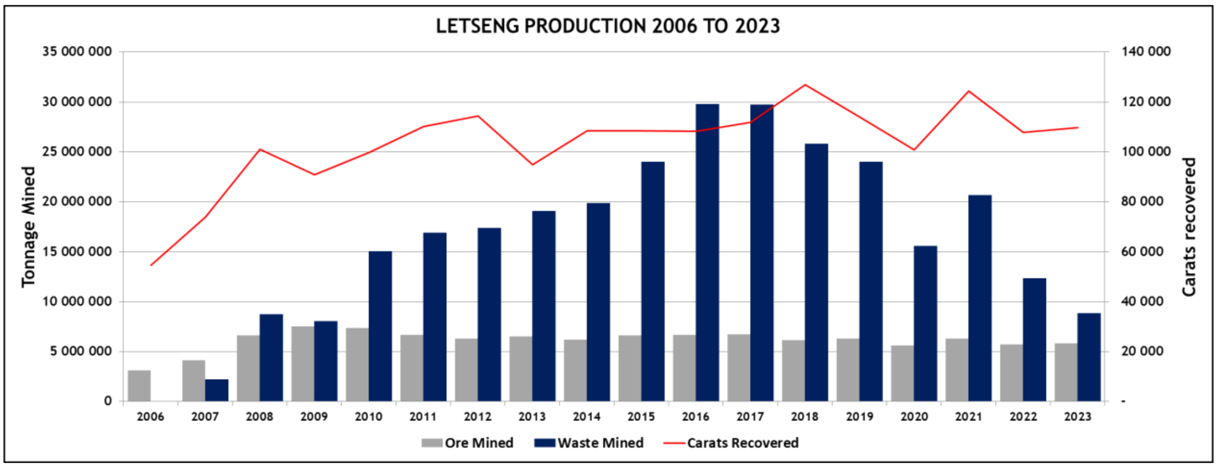
1. The effective date of the Mineral Reserve Statement is 31 December 2023. The QP for the estimate is Dr Anoush Ebrahimi P. Eng., an employee of SRK Consulting (Canada) Inc.
2. Figures have been rounded to the appropriate level of precision for reporting.
3. Due to rounding, some columns or rows may not compute exactly as shown.
4. Grades quoted as recovered and dry, pre-acid wash.
5. The Mineral Reserves are stated as in-situ dry metric tonnes.
6. K1A Grouping includes K1A, RFW-K1S: K1As and RFW-K1S: XENO-BSLT.
7. K1B Grouping includes K1B-1, RFW-K1S: K1B-1s, K1B-2 and RFW-K1S: K1B-2.
8. The Mineral Reserves were prepared under the guidelines of the CIM, for reporting under NI 43-101.

9. Average diamond value estimates are based on diamond sales data to the end of 2023 provided by Gem Diamonds Ltd.
10. Modifying factors for mining recovery of 88% and waste dilution of 12% applied on pipe contact blocks.
11. Probable Mineral Reserves were derived from Indicated Mineral Resources.
12. Mineral Reserves are inclusive of Mineral Resources.
13. There are no known legal, political, environmental, or other risks that could materially affect the Probable Mineral Reserves.
14. Stockpiles comprise surface loose stocks of material including high-value, low-value and highly diluted kimberlite contact ore. Stockpiles of low-value and highly diluted kimberlite contact ore will be processed at the end of life of open pit mining.
15. The Mineral Reserves reported in this table are attributable solely to the ore to be mined (and processed or stockpiled for later processing) from the open pit mining operations at Letšeng Mine.

16 Mining Methods

16.1 Introduction

Both kimberlite pipes at Letšeng are currently being mined using conventional drill, blast, load, and haul open-pit techniques. From 2005 to the end of 2023, load and haul operations were contracted to Matekane Mining Investment Company (MMIC). From December 2023, Letšeng has insourced drilling, loading and hauling activities. The move is expected to lead to further operational efficiencies and cost reductions at Letšeng going forward. Figure 16-1 shows the historical annual production results by material type since Gem Diamonds' acquisition of Letšeng in 2006.



Source: Letšeng Diamonds (2024)

Figure 16-1: Letšeng historical production from 2006 to 2023

Ore and waste material is drilled and blasted as required in 14 m benches, loaded using backhoe excavators or front-end loaders, and hauled using a mix of articulated and rigid body Caterpillar trucks. Material hauling operations are carried out using either 45 t CAT 745 ADTs, 55 t CAT 773 and/or 91 t CAT 777 rigid trucks. CAT 745 ADTs are dedicated to ore mining, CAT 777 rigid trucks are dedicated to waste mining, whilst CAT 773 rigid trucks are used to mine both waste and ore depending on pit size and equipment availability.

Waste is hauled to waste rock dumps (WRDs) located close to the two pits whilst high value ore is hauled either directly to the primary crushing area tipping bins or to the buffer stockpile. The low value ore is mined directly to low value ore stockpiles.

This section of the report reviews pit slope design, design implementation and mining method used at Letšeng Mine.

16.2 Pit Slope Design and Implementation

16.2.1 Introduction

The main geotechnical domains at Letšeng are based on lithology, namely basalt and kimberlite. That said, different geotechnical areas (or zones) are identified within these primary geotechnical domains based on structural geology, geohydrology, rock mass conditions, geotechnical considerations, and pit slope geometry. These are discussed in more detail in the following subsections.

16.2.2 Litho-Structural Model Update

The 3D structural model of Letšeng was updated by TECT Geological Consulting during 2023 as an update to the baseline structural model completed in June 2022 (TECT, 2022). The TECT 2022-2023 structural model limit was established by taking into consideration historically modelled structures, structural mapping data and the spatial extent of the drill hole database.

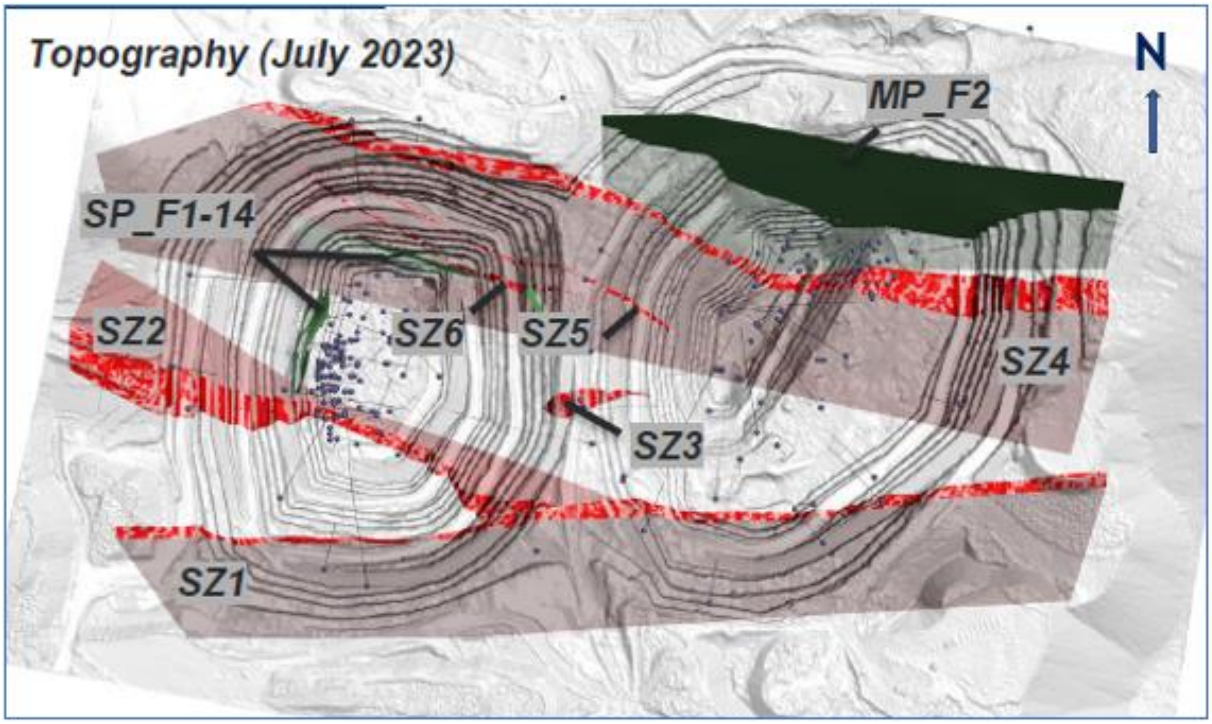
The 3D structural model update methodology included:

1. Drillhole database validation (Exploration and Geotechnical)
2. 3D delineation of major fault zones and single faults using:
   - Structural mapping database
   - Point cloud surveys
   - Drillhole Data (structural logs, core loss, low Rock Quality Designation (RQD), low Rock Mass Rating (RMR)and/or low Geological Strength Index (GSI))
3. 3D structural form interpolation of joint sets
   - Best-fit 3D geometrical representations/extrapolations of J1, J2, J3, J4, and J6 joint sets across the Volume of Interest (VOI)
   - Structural form interpolants are informed by the structural database and joint sets elections. Vertical exposure/resolution, particularly at depth, is enhanced by geometrical approximations between major fault zones, and using major fault zones as guides.
   - J4 and J6 form interpolants are spatially constrained due to exposure localities and significance.

Several faults and shear zones were distinguished from closely spaced, subordinate, single fault planes, with or without kimberlite dyke intrusion (Figure 16-2) as follows:

- **SZ1** is relatively mature, having a well-developed damage zone, strongly-slickensided fault planes and strong calcite alteration.
- **SZ2** is less mature, and was arguably less kinematically active, but still comprises a notable damage zone, albeit less intense compared to **SZ1**. **SZ2** intersects the southwestern margin of the Satellite Pit and terminates against the northern margin of **SZ1**.

- **SZ4** comprises a wide, immature shear zone that seemingly narrows to the WNW across the Main Pit and shows even poorer connectivity across the Satellite Pit's northern highwall, where it largely manifests as highly persistent and closely spaced J1a joint planes.
- **SZ3**, **SZ5** and **SZ6** are laterally limited/constrained and do not exhibit the same persistence or continuity as **SZ1**, **SZ2** and **SZ4**. **SZ5** and **SZ6** have, however, been modelled/extrapolated to extend to the base of the final pit design.
- Discrete fault planes with continuous surface expressions (**MP_F2**; **SP_F1-14**) are interpreted with limited structural data.
- Kimberlite dykes are variably mechanically milled or tectonised, suggesting intrusion before or contemporaneous with fault activation.

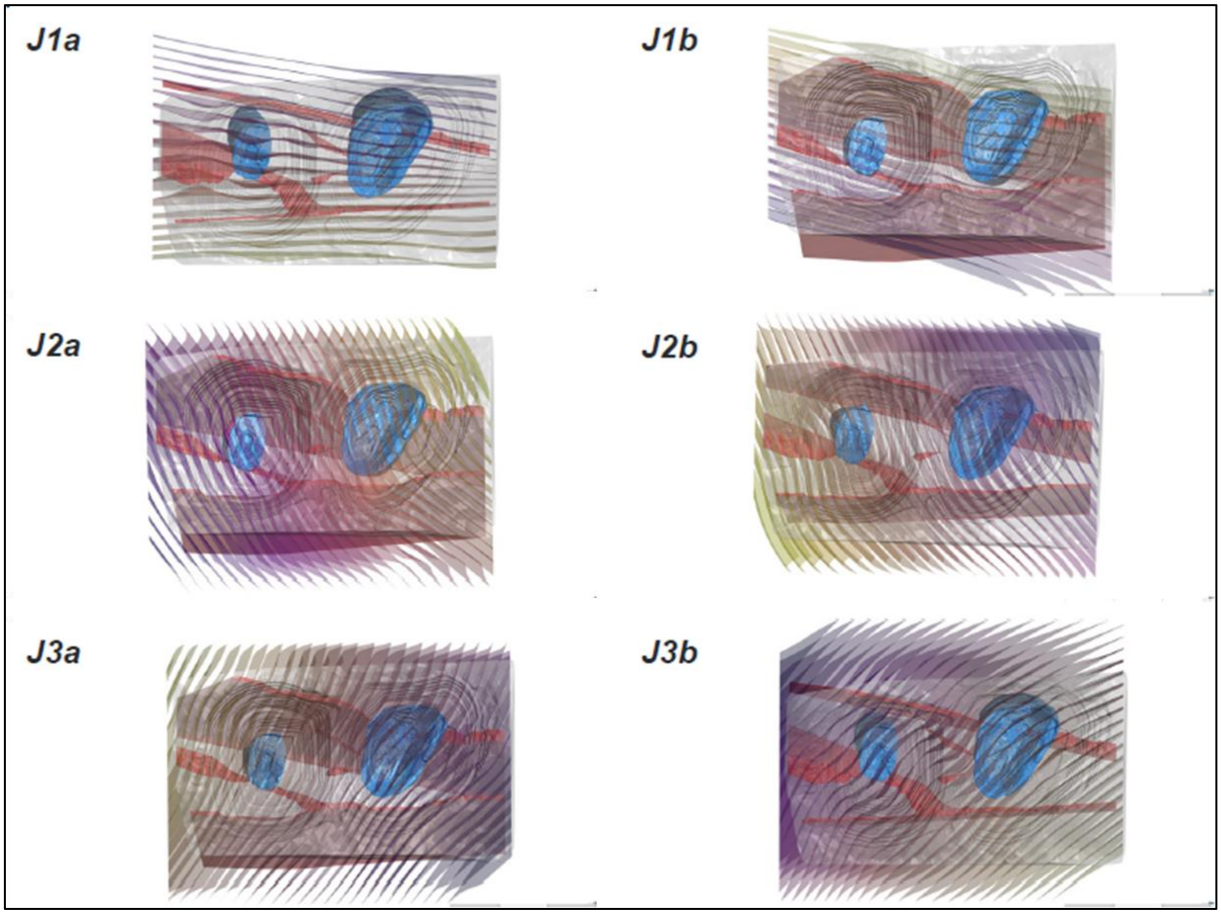


Source: TECT (2023)

Figure 16-2: Modelled single faults and fault zones

Surface structural orientation data (from in pit mapping) and limited oriented drillhole data acquired from 2022 to 2023 for the Letšeng VOI was sufficient for the construction of a robust structural model, for the current and LOM level of open pit operations. The acquisition of further structural data from Lidar and UAV - photogrammetric surveys allowed for the refinement and discretization modelling of joint form interpolants in the Satellite Pit. Moreover, a further 14 discrete fault planes were modelled in Satellite Pit, with a particular focus on the lower most western, northern and northeastern segments of the planned mining volume.

Form interpolants were modelled for J1, J2 and J3 with a and b abbreviations indicating opposite polarities (Figure 16-3) to complement in pit joint mapping and oriented core logging data. Whereas actual joint orientation data is used to evaluate the kinematic stability of actual benches and multi bench stacks in the Letšeng pits, these form interpolants are useful in providing a lookahead on kinematically controlled geotechnical hazards and stability conditions beyond current face positions.



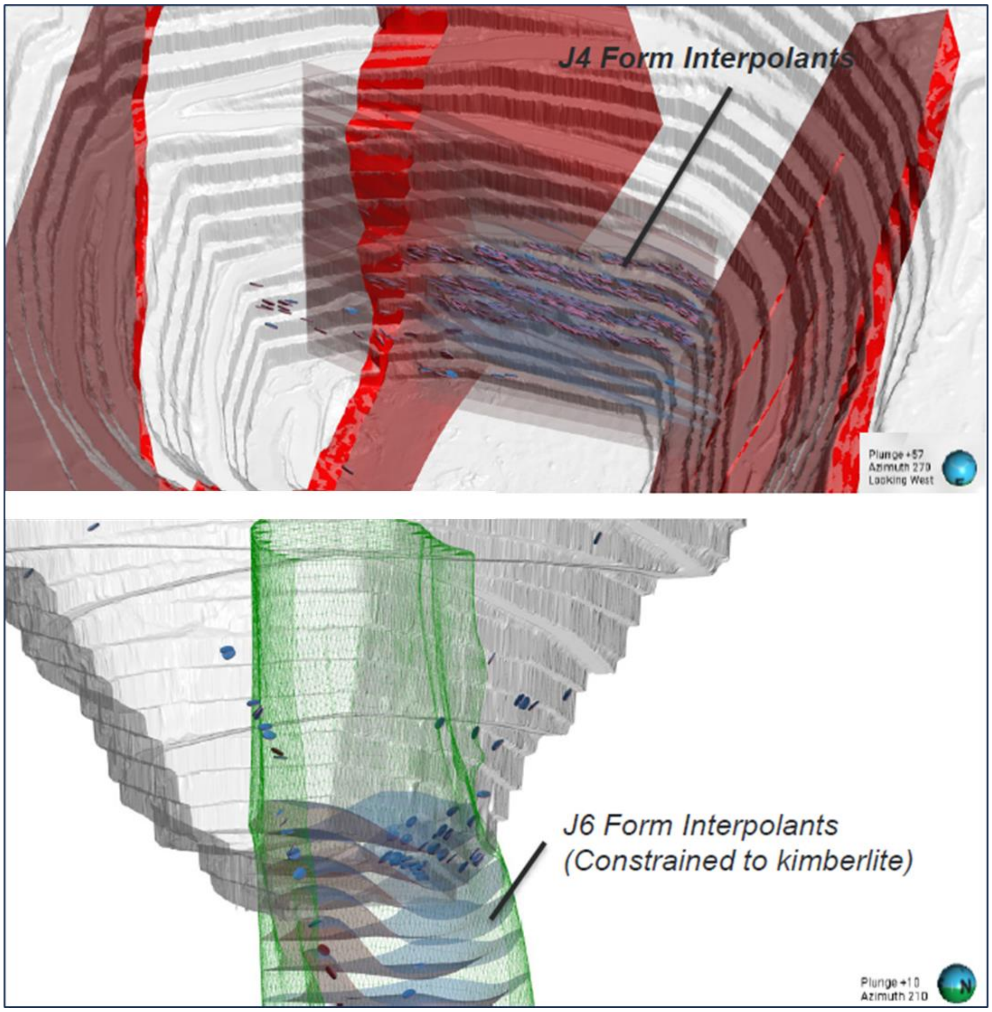
Source: TECT (2023)

Figure 16-3: Structural form interpolants of joint sets

These form interpolants (except for J4 and J6), regardless of major faults and single fault planes, were found to be largely consistent across the VOI, suggesting a homogeneous or consistent structural fabric. Hence, strictly allocating structural domains based on the structural inventory of the country rock (basalt) is not practical, apart from isolating major fault zones for monitoring. J4 and J6 form interpolants (Figure 16-4) differ as follows:

- Locally, J4 joint sets approximate the kimberlite contact on the western highwall of Satellite Pit. The spatial association between J4 and the kimberlite contact is inferred to be the result of a chill margin (differential cooling) or partial implosion of the kimberlite (pressure release) causing tensional fractures sub parallel to the kimberlite contact.

- Locally, J6 joint form interpolants have been constrained to the kimberlite volume, within reason, such that they approximate volcaniclastic layering. Their spatial accuracy is limited to the extents of the input data (viz.in the western portion of the kimberlite volume).



Source: TECT (2023)

Figure 16-4: J4 and J6 form interpolants in Satellite Pit

It is hypothesized that the break-off of a large clast/raft of basalt found within the kimberlite in Satellite Pit, in the vicinity of the west wall contact area, may have been due to a collapse of the diatreme during reaming and repeated intrusion.

The current 2023 structural model is considered ‘organic’ and should be reviewed when additional structural data are collected, for example, during new mapping surveys (I-Site, ScanLine) and/or based on new structural-geotechnical data obtained from drill core.

16.2.3 Rock Mass Model

Geotechnical core logging, laboratory tests, and field mapping and observations formed the basis for geomechanical rock mass property estimates that were used to develop Letšeng's rock mass model. The Generalised Hoek-Brown failure criterion (Hoek et al., 2002) was used to determine rock mass strength parameters (mb, s, a) (Table 16-1). Geological Strength Index (GSI) values were derived for the basalt and kimberlite based on rock mass classification work carried out during field mapping of bench faces, and from geotechnical logging of exploration drill cores. Uniaxial compressive strengths (UCS) for the intact rock were determined by way of UCS laboratory tests, Schmidt hammer field tests, and field strength estimates from core logging to define representative values of. The Hoek Brown intact rock material parameter (mi) value was determined by fitting Hoek Brown failure envelopes to laboratory test results of UCS, triaxial compressive strengths (TCS) and Brazilian tensile strengths (UTB). The Disturbance Factor (D) represents the degree of near-surface blast disturbance to which the rock mass behind the final excavated perimeter has been subjected, and ranges from D = 0 for undisturbed rock to D = 1 for very disturbed rock masses. A disturbance factor of 0.7 was adopted because of the generally excellent pre splitting and buffer blasting practices implemented and consistently achieved along final pit excavation perimeters at Letšeng.

Table 16-1: Rock mass strength parameters

Geotechnical Domain		(No)	UCS (MPa)	GSI	m_i	υ	m_b	s	a
Basalt	mean	26	132	70	14.5	0.3	2.87	0.017	0.5
	std dev		40	5	3	0.03	1.04	0.013	0.001
Kimberlite	mean	25	48	50	5	0.2	0.27	0.0007	0.5
	std dev		12	5	1	0.04	0.12	0.0006	0.002

Source: Lefu et al. (2017/2018)

Note: std dev = standard deviation

Shear strength parameters for joints in the basalts were estimated using the Barton-Bandis criterion (Table 16-2) with the joint roughness coefficient (JRC) estimated during field mapping, and the basic friction angle (BFA) from direct shear tests on saw cut samples in the laboratory. The joint wall compressive strength (JCS) was assumed to be similar to that of the intact rock because most joints surfaces at Letšeng are fresh with only a few joints showing staining and/or calcite fill.

Table 16-2: Strength parameters for joints in the basalt

Parameter	Range	Average	Std Dev
Sub-vertical joints			
Joint spacing (m)	0.05 – 25	4	5
Joint roughness coefficient (JRC)	2 – 18	8	3
Joint-wall compressive strength (JCS)	60 – 190	132.2	34
Basic friction angle (BFA) (degrees)	31 -41	37	3.6
Horizontal joints (e.g. flow contacts between respective basalt flows)			
Joint spacing (m)		20	
Joint roughness coefficient (JRC)	2 – 18	7	4
Joint-wall compressive strength (JCS)	0 – 190	132.2	34
Basic friction angle (BFA) (degrees)	31 – 41	37	3.6

Source: Lefu et al., 2017/2018

Additional work is required to improve joint strength estimates and it is therefore recommended that shear tests be conducted on a representative number of joints sampled from exploration drill cores (Lefu, 2017/2018).

16.2.4 Hydrogeological Model

Hydrogeological Data and Modelling

The conceptual hydrogeology of the site is well understood, comprising a shallow aquifer in the weathered basalt that is recharged seasonally by precipitation and from anthropogenic inputs such as the WRD, the Old Residue Storage Facility (RSF) and the Patising RSF. There is a deeper regional fractured rock aquifer in the basalts (basalts extend up to 1,500 m below ground level) that is likely to have higher permeability at the contact between the kimberlites, increasing as the mine pit sags and a zone of relaxation develops with depth.

The drainage holes that were drilled in 2023 on flitches on the northern slope of the Satellite Pit were sampled for hydrochemical analysis and the results confirmed that:

- Boreholes at shallower depths (BH01, BH02 and BH03) are distinctly different in signature, having higher sodium, nitrate and chloride compared with the deeper holes at BH07 and bottom of the pit which have higher sulphate and absence of nitrate.
- There is shallow ingress due to seepage from the RSF on the northern side of the Satellite Pit, resulting in more of a kimberlite signature with precipitation of gypsum in the tailings.
- The deeper groundwater is representative of structurally controlled groundwater.

The MINEDW numerical flow model was developed and updated to include the geological model with the shear zones and mine plans and was calibrated in steady state against the existing groundwater monitoring data.

The numerical flow model indicates cumulative inflows into the open pits (Satellite and Main Pits) at 900 to 1000 m3/day. The model is sensitive to the hydraulic conductivity of the shear zones. To improve the confidence level of the model, drilling and testing of the shear zones is planned.

The MINEDW model will be re-calibrated with additional data from future drilling and test pumping of the shear zones and other structures to:

- Predict groundwater ingress with more accuracy.
- Provide 3D pore pressure distribution along sections through the open pits as specified by the geotechnical team.

Groundwater Conditions

Based on the drilling records as well as observations in the open pits, it is apparent that the basalt reports as a relatively dry unit with minor flows observed along some random discontinuities. The risk of developing high pore-water pressures within the basalt is low. The kimberlite rock mass has a slightly lower transmissivity and water tends to pond in the pit bottom. In terms of the impact of groundwater condition on the stability of the pit slopes, it is low for most of the pit boundary but moderate within the shear zone. Groundwater is only a challenge in blasting but not for slope stability. Based on pit observations, it is believed that there is only transient flow, and the pits are above the water table; however, more work is underway to prove the statement.

In the depressurisation drilling program that was undertaken in 2023, targeting potentially water-bearing structures of the Satellite Pit, the results indicated very few zones that were groundwater-bearing. In fact, for the first two levels drilled in the western side of the pit, all eight holes indicated no groundwater at all, in the structures. It was only in the third flitch, where a couple of drain holes resulted in significant water intersections in the structures. These however drained quickly, as initial flow rates dropped to almost half the original values, within a week. This was a successful first attempt to depressurise these zones. Drilling continued targeting structures for water in all directions of the Satellite Pit, and the results indicated no additional water-bearing structures are present, at the current mining level.

SRK (South Africa) was consulted and updated on the drilling results, and following a mine visit, the QP made specific recommendations for continuous groundwater monitoring as well as continuation of slope depressurisation in the lower levels of the open pit as mining gets deeper. This program has been approved, and more depressurisation drilling will continue in 2024, targeting potential water bearing structures in the lower benches of the Satellite Pit. This should significantly reduce the influence of groundwater on the Satellite Pit stability.

That said, groundwater inflows along the north and northwestern boundaries of the Letšeng pits are more pronounced. This is due to water from the Process Plants and RSF reporting to these pit slopes through intersecting discontinuity sets. Two drill holes have so far been drilled in this area; however, more data are required to better understand the potential influence of the RSF on these groundwater flows, and the impact thereof on the stability of these pit slopes.

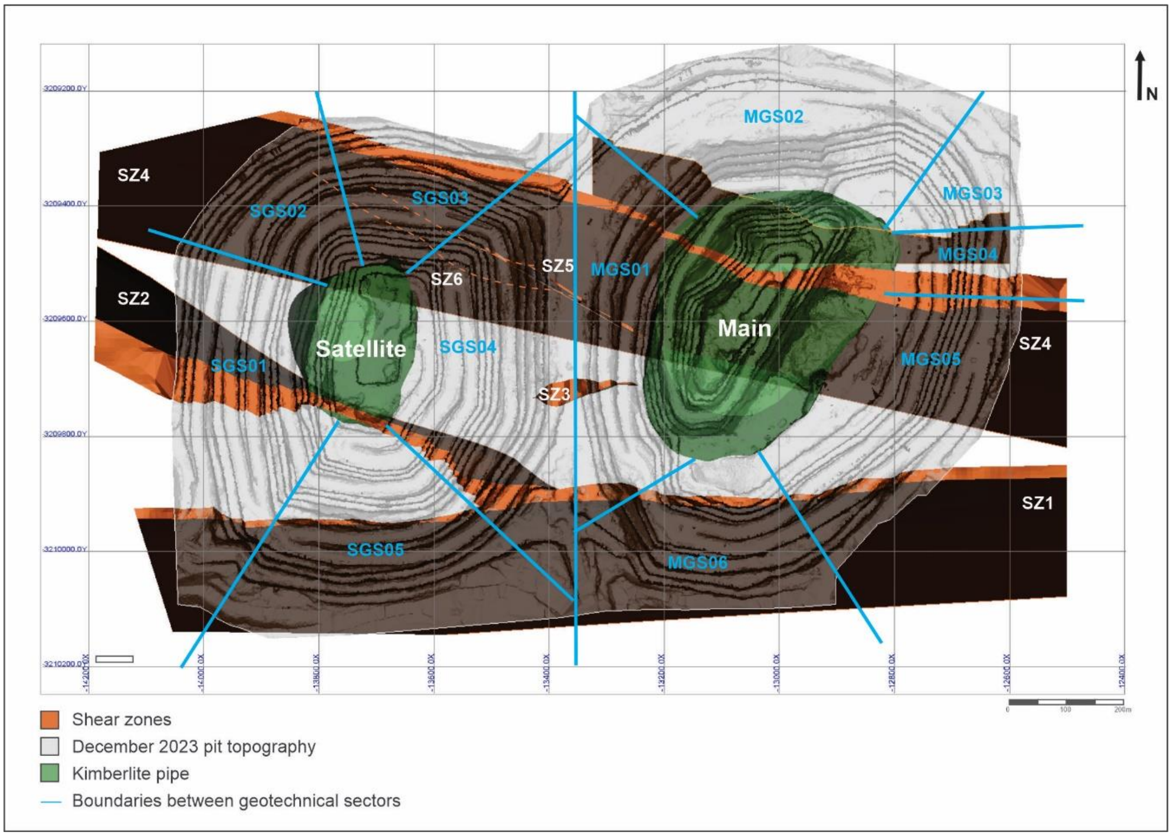
An additional two holes are also planned in the kimberlite in the Satellite Pit to try and establish groundwater pressures in the kimberlites at the pit bottom, and its potential impact on the stability of the slopes in kimberlite, and for the overall pit.

Freeze-Thaw

Given the altitude of the mine and prevailing conditions during winter, the impact of freeze-thaw is apparent along bench crests in both the basalts and kimberlites. It causes dislodgement of boulders which contributes to an extent to rockfall risks in the Letšeng pits.

16.2.5 Geotechnical Model

The basalt geotechnical domain has been subdivided into different geotechnical sectors (or pit design sectors) for kinematic analysis purposes based on pit slope orientations in the two pits (Figure 16-5), and with geotechnical zones associated with major geological structures (faults, fracture zones) identified in consideration of more adverse geotechnical conditions being encountered in these areas.



Source: Gem Diamonds (2024)

Figure 16-5: Letšeng geotechnical sectors in basalt

The kimberlite domain is generally treated as a uniform domain in geotechnical analyses and modelling; however, the kimberlite immediately around the basalt raft in the Satellite Pit, and especially in the relative narrow kimberlite zone between this raft and the kimberlite pipe/basalt contact, are known to be more fractured and jointed, resulting in poorer rock mass conditions and bench-scale instability being encountered in kimberlite benches in this part of the Satellite Pit.

Some geotechnical analyses and models also included a 15 m wide transition zone in the basalt, up against the basalt/kimberlite pipe contact, to study the influence of poorer rock mass conditions including adverse jointing being encountered in the basalts along the kimberlite pipe margins.

The QP recommends that the kimberlites be better characterised geotechnically to allow geotechnical sub-domaining of weaker zones – such as the red kimberlite, the kimberlite pipe contact with the basalt country rock, and the fractured and weaker kimberlite between the pipe contact and the basalt raft in Satellite Pit. These geotechnical sub-domains should have reduced inter ramp angles given adverse ground conditions typically experienced in these more friable, fractured, and weaker kimberlite rock mass zones.

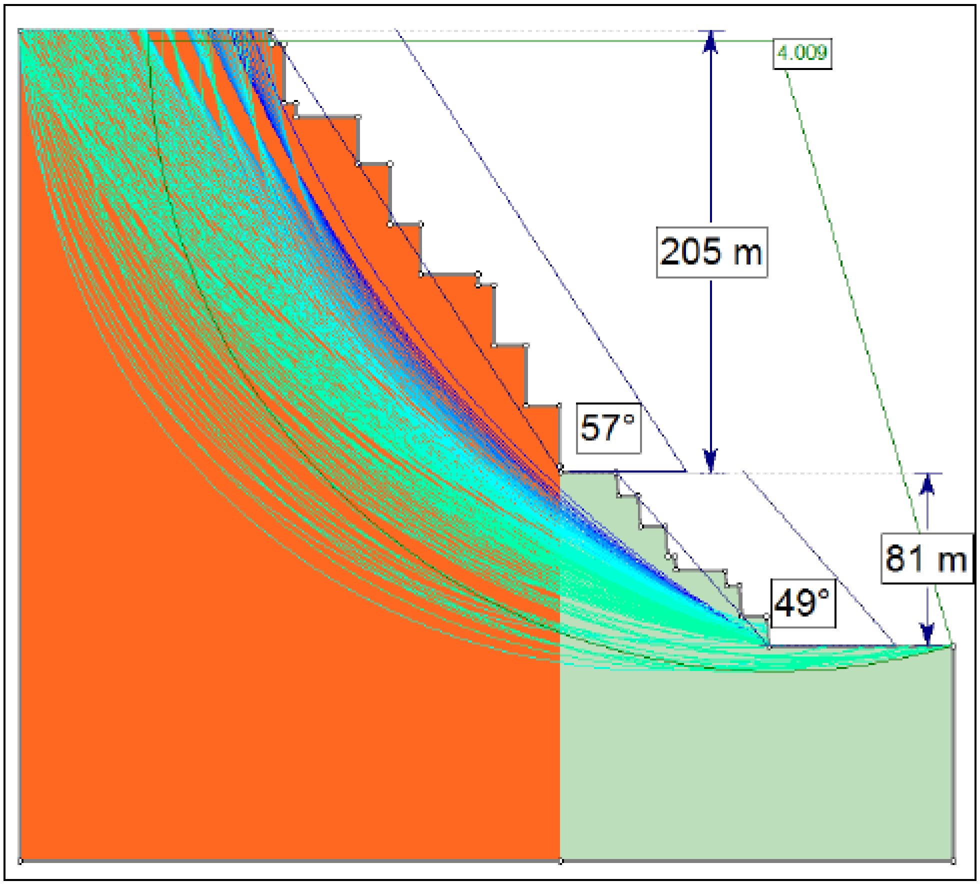
16.2.6 Pit Slope Design - Stability Analysis and Modelling Results

Various design studies and reviews of the stability of the proposed pit slopes at Letšeng have been carried out to date as follows:

- Pit slope optimisation studies were carried out by Lefu et al. (2017/2018), with a subsequent review thereof by Itasca (2018)
- A detailed review of the proposed pit slope steepening at Letšeng was carried out by SRK (2021) and included detailed rockfall analyses
- The SRK (2021) report included a detailed review of Letšeng's pit limit blasting practices comprising double-bench presplitting and a review of buffer blasting was furthermore carried out by Rorke (2020)
- Letšeng Diamonds reported on recently completed slope steepening trials, with a subsequent review thereof by Itasca (2022)
- SRK reviews (2021, 2023a) also included a detailed review of the required controls and appropriate risk mitigation measures considering the very steep inter ramp multi bench stack angles adopted in the Letšeng pit designs

The results of these design studies and reviews are summarised at a high level below.

Lefu et al. (2017; 2018) reported quite high Factors of Safety (FOS) for 2D limit equilibrium design analyses using Rocscience's Slide2 programme for a select few vertical design sections in the respective open pits (e.g., see Figure 16-6), with a FOS of 2.3 reported for an overall slope designed at the recommended maximum slope angle configuration – that is, for a 53° overall pit slope angle.



Source: Lefu et al., 2017/2018

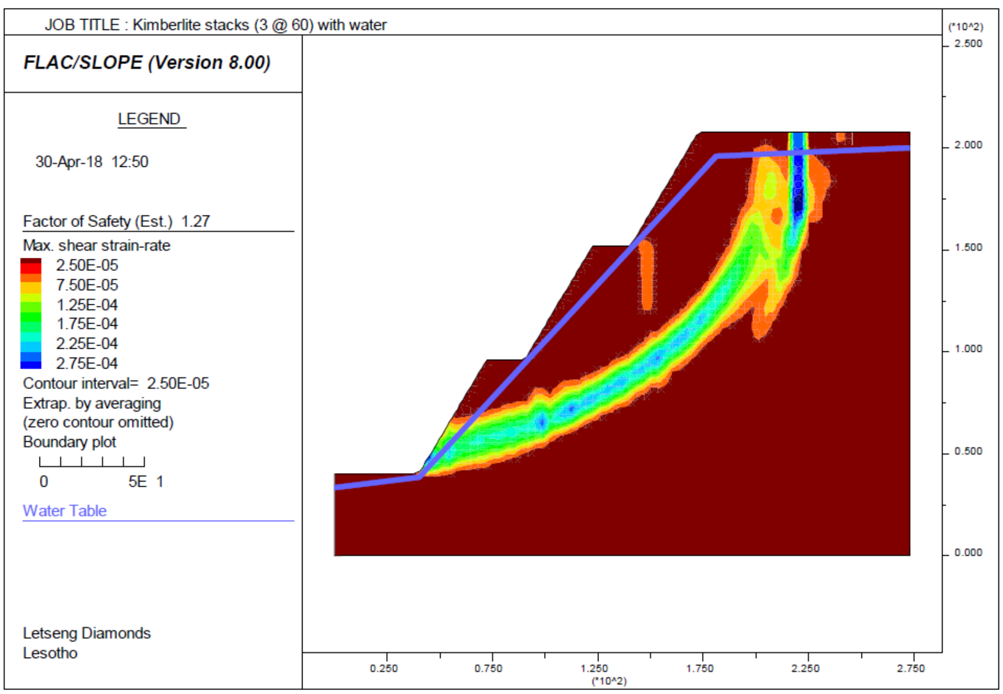
Figure 16-6: Typical Slide2 results

Lefu et al. (2017/2018) also evaluated the historical occurrence of rockfalls (i.e., location, controls) and identified the main trigger mechanisms that gave rise to rockfalls in the Letšeng pits.

Itasca (2018) reviewed the pit slope optimisation work carried out by Lefu et al. (2017/2018), and concluded as follows:

- The slope designs are aggressive in two respects:
  - The designs only allow very limited flexibility, especially in basalt slopes where single ramp access is planned.
  - The inter-ramp angles proposed are at the upper end of current experience and will require world class operational implementation to achieve the required rockfall retention to allow safe mining.
- Importantly, the design included wider geotechnical berms at regular vertical intervals – i.e., at 84 m intervals between 3x double-bench stacks in basalts and at 56 m vertical intervals between 4x single bench stacks in kimberlite, but with the proviso that stack heights could be increased to 4 or 5 double bench stacks above ramp switchbacks in the basalts as long as at least 80% berm retention is achieved.

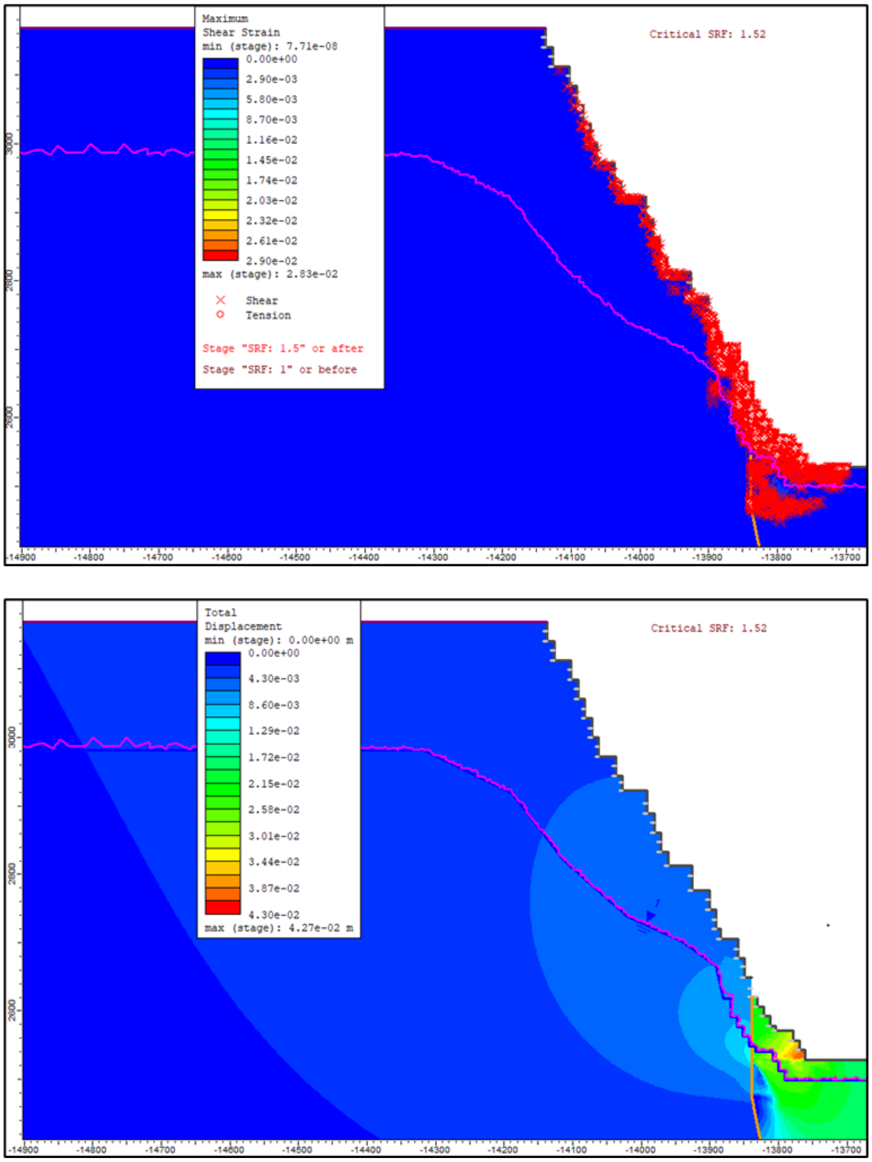
- Areas of potential instability identified included the Shear Zone (SZ) and kimberlite dykes present within the basalts.
- Trials for further slope steepening in both basalt and kimberlite were proposed.
- Special planning attention is required at the basalt/kimberlite contact, to limit potential instability at ramp intersections with the contact.
- Much emphasis was placed on operational implementation requirements to ensure adequate rockfall retention capacity on benches, and on adopting appropriate QA/QC monitoring and controls to ensure design adherence.
- Additional work is required for design validation, including installation of piezometers to confirm prevailing groundwater pressures in the basalts and kimberlites.
- Slope monitoring and management practices will have to be improved to mitigate the risk of rockfalls given the steep inter ramp slopes being implemented.
- 2D numerical stability analyses were carried out for pit slopes in kimberlite using Itasca's FLAC/SLOPE software (e.g., see Figure 16-7; Itasca, 2018), with FOS > 2.1 reported for dry/dewatered kimberlite slopes, and FOS > 1.3 to 1.6 (depending on slope height) for saturated/non dewatered kimberlite slopes.



Source: Itasca, 2018

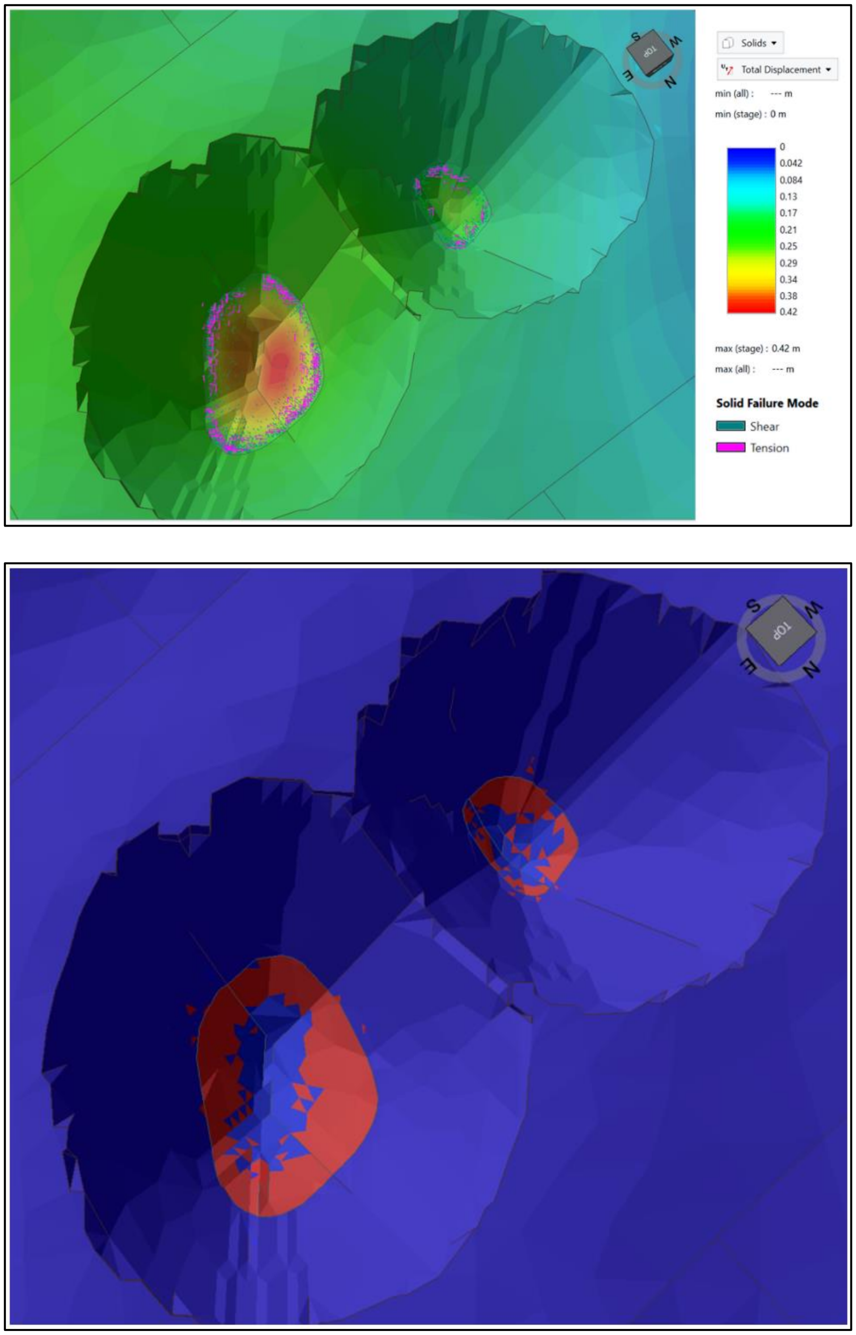
Figure 16-7: FLAC/SLOPE analysis of 168 m high kimberlite slope with assumed phreatic surface

In 2D and axisymmetric finite element models (FEM) set up in Rocscience's RS2 programme (e.g., Figure 16-8), and 3D FEM in Rocscience's RS3 programme (Figure 16-9), FOS values of the order of 1.5 to 1.7 were reported by SRK (2023a) for a dewatered pit slope scenario. These models included a 15 m wide weaker transition zone in the basalt at the basalt/kimberlite pipe contact, the basalt/kimberlite pipe contact as a weak shear zone, and a 10 m wide zone of blasting disturbance along final excavation perimeters.



Source: SRK (2021)

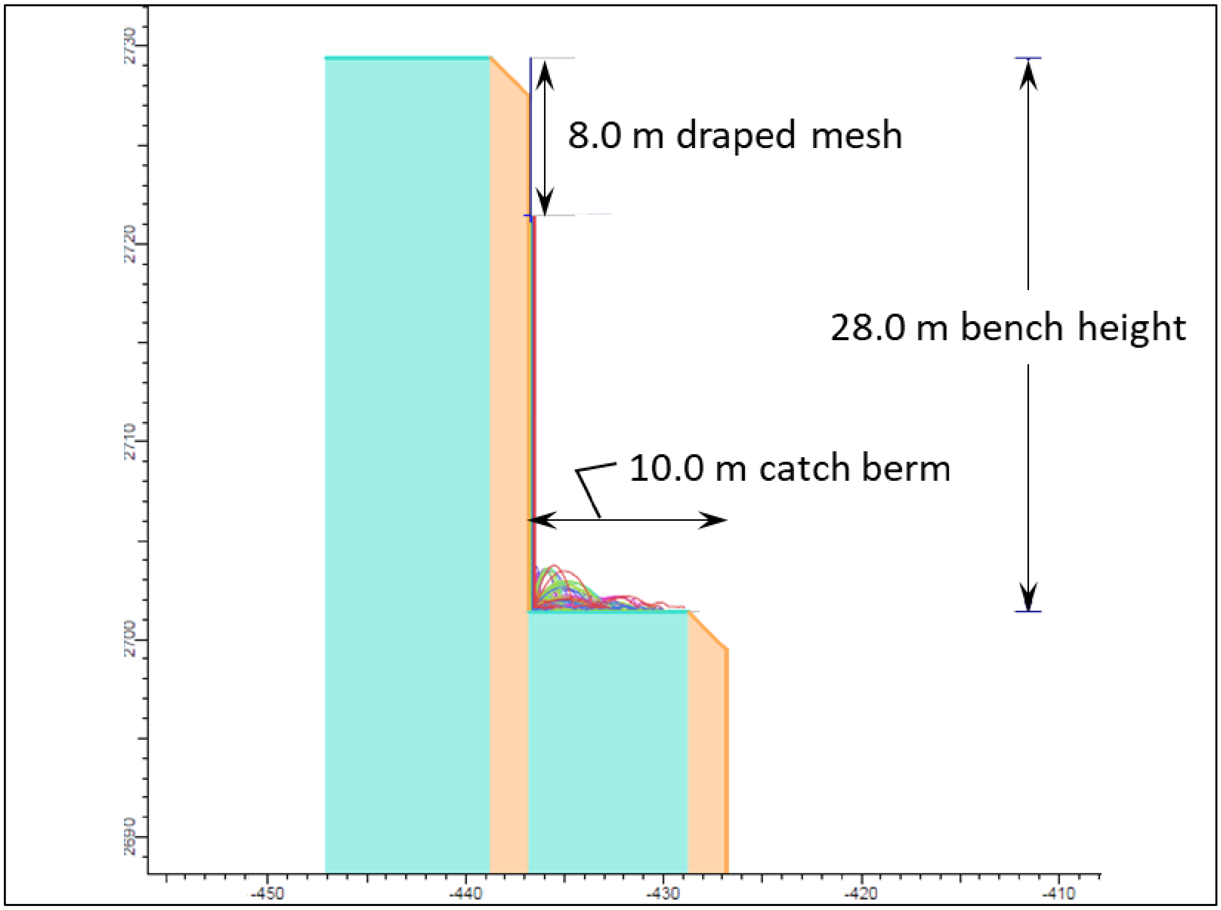
Figure 16-8: 2D FEM RS2 model of overall pit slope in basalt and kimberlite – (a) extent of rock mass yield in shear (x) and tension (o) at the end of mining; (b) total displacement contours at the end of mining



Source: SRK (2021)

Figure 16-9: 3D FEM RS3 model of Whittle shells of Letšeng pit slopes in basalt and kimberlite – (a) Extent of rock mass yield in tension (❐) and shear (x) and contours of total displacement on completion of mining; (b) Extent of yielded material in pit bottom (mainly in kimberlite) on completion of mining

SRK (2021) also evaluated rockfall risks in detail, taking into account typical edge breakback along bench crests in basalts and kimberlite (e.g., see Figure 16.10), on the basis of which it was concluded that every effort must be made to ensure good quality pit limit blasting, including removal of any hard/frozen bench toes, considering the narrow catch berm widths available to retain rockfalls.



Source: SRK (2021)

Figure 16-10: Typical Rockfall results for a 10 m wide berm in basalts, with draped mesh along bench crests to reduce rockfall risk

The SRK (2021) review concluded with detailed recommendations for the following:

- Pit slope dewatering and groundwater monitoring requirements.
- Design implementation, including QA/QC, sign-off at shift handovers, scaling of final bench faces, etc.
- Pit limit blasting requirements.
- Requirements for local lateral support, rockfall retention and mitigation.
- Slope risk management and mitigation, including the need for updated Ground Control/Hazard Management Plans, slope monitoring requirements, Trigger Action Response Plans (TARPs) and the need for emergency response and evacuation procedures.
- Records to be kept, communications, training requirements, and document control.

- The need for external geotechnical performance reviews.
- Adoption of Safe Highwall Practices (e.g., stand-off distances, approaching highwalls, inspection requirements, etc.).
- The required on mine geotechnical staff compliment and departmental organisation.

Rorke (2020) completed a detailed review of presplit and trim blasting practices employed at Letšeng, with recommendations included to reduce cratering in the back, improve confinement issues through modification of trim blast timing and trim patterns, and reducing damage to the berm from the trim blast above. Recommendations included:

- Aim to keep trim blasts to a maximum of four production rows deep.
- Use the flexibility of electronic detonators and progressively increase the delays towards the back of the blast.
- Reduce the burden of the second buffer line from 4.5 m to 3.5 m.
- Align the production pattern parallel to the buffer lines and presplit so that the saw tooth effect between the buffer lines and the production holes is eliminated.
- Currently sub-drill is not designed into the large diameter holes aligned above the berm crests. This is a good practice and should be continued.
- Avoid over-drilling of trim blast holes. Any over-drilling, regardless of back fill, will result in increased crest damage. For drill depth control to succeed, it will require accurate hole depth planning and measuring during drilling.
- Introduce hole-bottom air decks in the two lines of production holes above the crest area in dry conditions. In wet conditions, short-drill the holes by about 1 m.

Sekata et al. (2022) reported on slope steepening trials at Letšeng which were successfully completed recently. This work was subsequently reviewed and approved by Itasca (2022), on the basis of which steeper inter ramp slopes were adopted as follows:

- Reduce berm widths between double benches in basalts to 10 m, to give a 70 degree inter-ramp slope angle for a 3x double bench stack in basalt.
- Reduce berm widths between single benches in kimberlites to 9 m, to give a 57 degree inter ramp slope angle for a 4x single bench stack in kimberlite.

Itasca (2022) noted that adoption of these steeper inter ramp slope configurations is subject to the following:

- Continue the use of Splitex in pre-split holes. Splitex has provided good face quality in the north wall of the Main Pit.
- Steeper slopes (inter-ramp angles of 70° in basalt and 57° in kimberlite) can be used if all rockfalls are contained on the bench immediately below the rockfall source location. It is important to recall that the inter-ramp angles discussed above are for double benches in basalt and single benches in kimberlite. Double benches are not recommended for kimberlite.

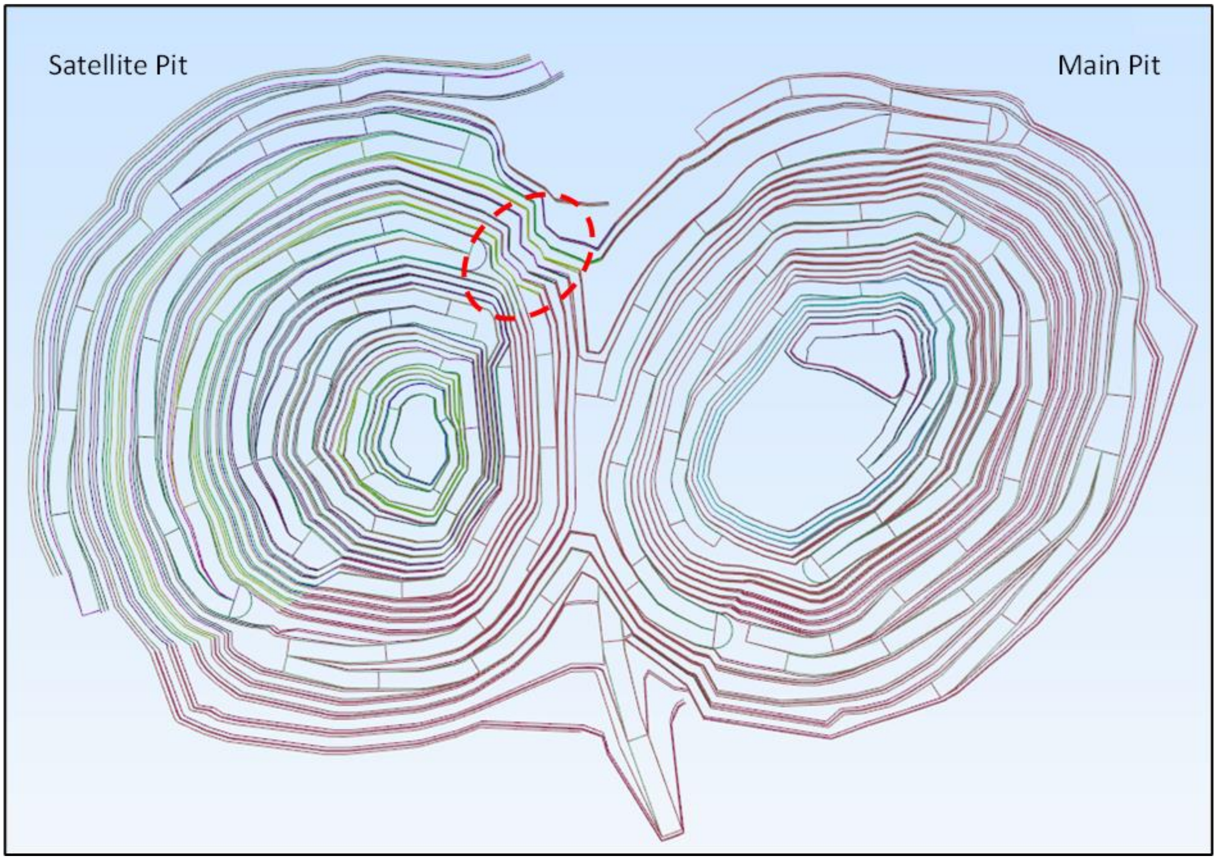
- Areas with red kimberlite and/or contact with the country rock should have reduced inter ramp angles since experience has shown these conditions to be problematic.
- Failure to achieve 90% retention area in basalt or 80% retention area in kimberlite can be tolerated on one bench, but the condition must be corrected on the bench immediately below. If the area retention criterion is not met on two consecutive benches, then the design inter-ramp angles must be reduced based on achieved berm widths.
- Continue diligent scaling of all benches to minimize rockfall sources.
- Continue all geotechnical inspection, monitoring, reporting, and management activities.

It is furthermore understood that the rockfall mitigation measures recommended by SRK (2021, 2023a) will be implemented during LOM design implementation and execution at Letšeng, to continuously ensure a safe working environment in the bottom of the Letšeng pits, and that adequate budgetary provisions have been included in this regard in the LOM financial model.

16.2.7 Letšeng Pit Geometries and Layouts

The LOM pit shell 35 design for Letšeng Mine (filename ni-sc6&5w_mc4w.dxf as provided to SRK by Gem Diamonds on 22 January 2024) is presented in plan layout in Figure 16-11. The QP has inspected this layout and makes the following recommendations and comments:

- The bullnose pit slope geometry circled in red dash outline in the northeastern side of Satellite Pit is bound to give rise to significant rockfall hazards which cannot be accommodated considering the aggressive, very steep inter-ramp slope angles in the basalts and the overall height of this bullnose slope. The QP therefore recommends that the pit geometry be amended locally to remove this bullnose, and to make provision for minimum 26.0 m wide geotechnical berms at the specified height intervals given the absence of ramps on this part of the slope. The QP discussed this finding and recommendation with Gem Diamonds in a virtual meeting on 26 February 2024 during which it was noted that this design modification will be made as part of short- and medium-term planning during execution of the Letšeng LOM.
- Letšeng Diamonds and Gem Diamonds management acknowledge and accept the significant risk associated with providing only single ramp access into Satellite Pit, notwithstanding the aggressive, very steep inter ramp angles adopted in pit slopes in both the basalts and kimberlites at Letšeng.



Source: SRK (2024)

Note: filename ni-sc6&5w_mc4w.dxf provided to SRK by Gem Diamonds on 22 January 2024

Figure 16-11: Plan layout of the pit shell 35 design for Letšeng

16.2.8 Slope Design Implementation

Final Wall Control

Before a final pit wall is signed off, the geotechnical department inspects the high wall and requests scaling, secondary blasting, or clean-up of the bench. No drilling of the presplit or the buffer block of next level is to be done before the pit wall is signed off. If the pit wall did not reach the design positions, a report to the reasons, the impact and the remedies must be filed and reported on in the rockfall Code of Practise (COP).

The successful operational implementation of the slope design demands diligence in the establishment of the final pit wall. Final pit wall control refers to presplit and buffer blasting management, as well as over and under mining of final pit walls. The improved pit wall control is necessary to reduce the risk of rock falls and improve the operational effort to follow the planned design.

Drilling and Blasting Practice

There is no substitute for accurate production drilling and blasting practice in order to adhere to the approved pit designs. Under-drilling, over-drilling and hole deviations from the planned inclination must be eliminated. The Drill and Blast Engineer must sign-off the drilling patterns prior to charging as a confirmation that drilling quality, clean holes, and conformity to plan have been achieved.

Slope Performance Monitoring

The geotechnical engineer ensures that any potential falls and ground instability are detected prior to them becoming hazardous and appropriate trigger-action plans are in place when ground instabilities are detected.

Surface Water and Groundwater Management

There is continuous assessment of the effectiveness of dewatering and highwall depressurisation measures where required. In 2023, the western and southwestern walls of the Satellite Pipe were drilled for depressurisation as part of groundwater management and slope stability improvement.

16.3 Mine Planning and Production Scheduling

The mine design input parameters, pit optimisation, final pit design and mineral reserve statement are reported in Section 15.

16.3.1 Introduction

Strategic mine planning for Letšeng Mine was conducted by Mark S Gallagher of MSG Consulting (MSG). MSG was provided with the SRK resource block model and the pit optimisation input parameters that were agreed between SRK and Letšeng Mine for the resource to reserve conversion process. The pit designs and production scheduling were completed by Tinodashe Nyikavaranda Pr. Eng, the mining engineer at Gem Diamonds Technical Services. The Mine Planning and Production Scheduling work was reviewed by the SRK QP, Dr Anoush Ebrahimi, P.Eng.

16.3.2 Assumptions and Input Parameters

The design input parameters have been listed and explained in other related sections including Section 15. Some of the input parameters related to the production schedule are explained in this section.

Mining Production Target and Processing Rate

The processing tonnage limit was guided by the design capacity and operational philosophy of the process plants in conjunction with planned and unplanned production interruptions as defined in the down-time roster and set at 4.8 Mtpa (dry).

The mining limit was unconstrained however as the split shell design technique that is employed at Letšeng is expected to lower the waste profiles in the detailed production scheduling.

Life of Mine Pit Schedule Assumptions

Waste stripping in 2024 requires the current fleet to maintain an instantaneous mining rate of 6.5 Mtpa. In 2025, the waste stripping requirements are expected to increase in line with the simultaneous stripping of the final pushbacks in the Satellite and Main Pits. The peak waste mining fleet requirement occurs when the final pushback in Satellite (SC6W) is at its maximum planned waste mining rate. Waste significantly reduces when this pushback gets into ore and to the end of the open pit life. This projected waste profile and related fleet is expected to deliver 4.8 Mtpa (dry) to the plants for the LOM.

Pushback Determination

Looking at the combined waste stripping and ore value trends in early years is often a good indicator of where to start mining. The nested pit shells produced in pit optimisation (see Section 15) are analysed to help with final pit size as well as the pushback selections. The pushbacks are determined by several factors such as equipment size, minimum mining width, production rate, ramp geometry.

There are several methods used to determine pushbacks:

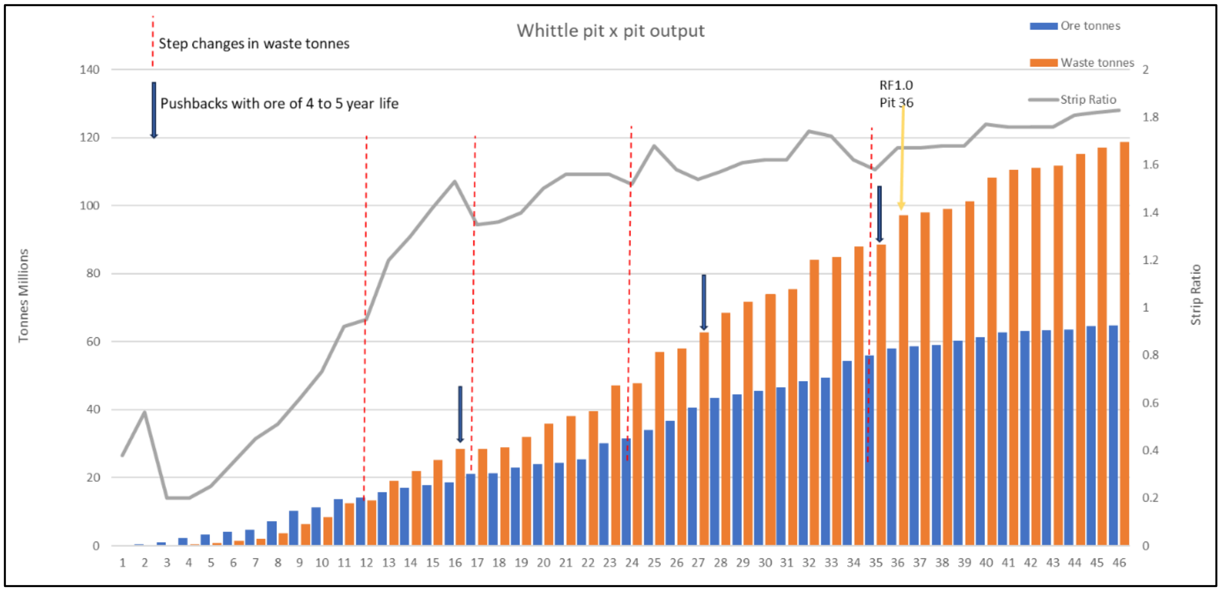
- Minimum bench operating width
- Business Risk Period of five-year ore windows
- Waste rock spikes in the revenue factor graph
- Using Whittle auto-pushback module

Minimum bench operating width plays a factor in all the methods mentioned above. Once a set of pushbacks has been determined, the shells for those pushbacks must be checked in the general mining package to ensure minimum mining width has been maintained, especially at the shell transition points where pinch points normally occur.

A Business Risk Period of 4-5-years means looking at the output from the Whittle revenue factor process and identifying which shells will provide an operating life of 4-5 years. In Letšeng, that translates to approximately 20-25 Mt of ore. For this study, the Business Risk Period method was used to determine the potential pushbacks.

The graph in Figure 16-12 shows the results of the pit optimisation for different revenue factors where pushbacks and 5-year life of pushback have been identified by red dotted lines showing steps in waste tonnes and blue arrows identifying pits with approximately 4-5-year life of pushback.

The graph of waste stripping identifies a few areas where there is a plateau in waste stripping, from pit 16 to pit 18 then again from pit 23 to pit 24.



Source: Mark Gallagher (2024)

Figure 16-12: Graph of revenue factor pits from Whittle

It became apparent from analysing the outputs on the graph that pushback 1 would be in the region of pit 16 to 18, which gives a life of pushback between four and five years, and the waste tonnes required plateaued at approximately 28 Mt. Pushback 2 would give an additional four-year life, which aligns to pit 26, which is also where waste tonnes level off at 58 Mt.

16.3.3 Final Pit and Waste Rock Dump Designs

Slope Design Configuration

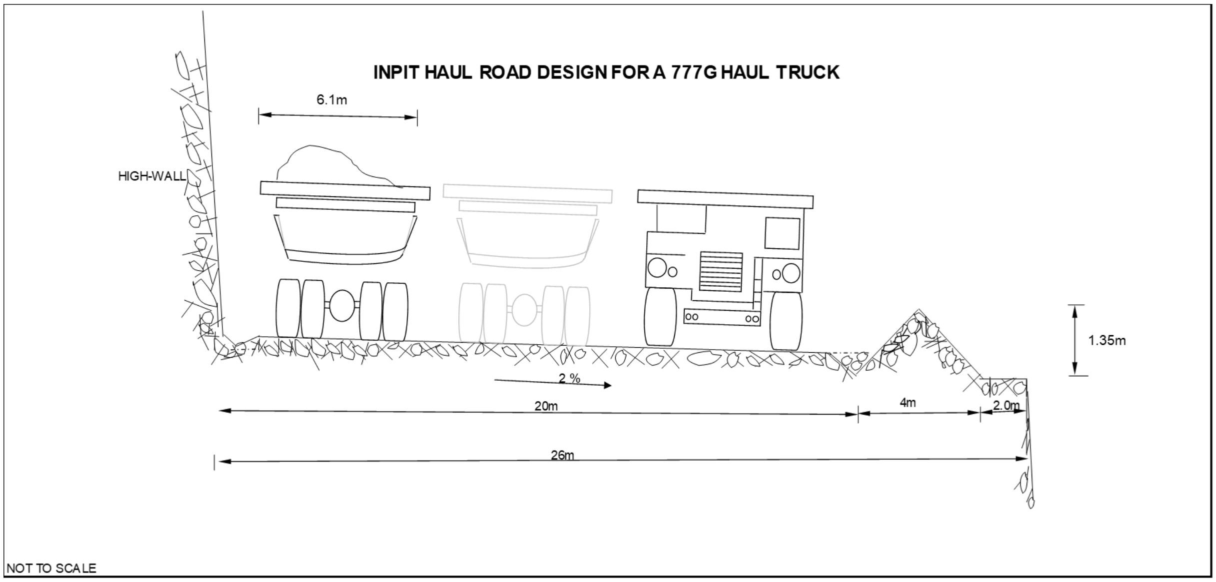
The pit designs were developed using Geovia Surpac with the slope configurations shown in Table 16-3.

Table 16-3: Slope design configurations

Recommended Slope Design Configurations							
Pit	**Rock Type**	**Rock Code**	**Geotechnical Design Sector**	**Berm Width (m)**	**Batter Height (m)**	**Stack Height (m)**	**Stack Angle (Degree)**
Main Pit	Basalt	Basalt	All	10	28	84	70
	Kimberlite	K2, K4, K6, MP-Raft, K1A and K1B	Kimberlite (ALL)	9	14	56	57
Satellite Pit	Basalt	Basalt	All except (SGS02 and SGS03)	10 (11)	28	84	70 (68.6)
	Kimberlite	NVK, SVK, GVK, SP-Raft, SP breccia, CVK	Kimberlite (ALL)	9	14	56	57

Haulage Road Widths and Gradients

The road design should allow for a minimum of three truck widths as the running surface along straight sections of the ramp and four truck widths on bends (CAT, 2014); Figure 16-13. Additionally, the design should cater for blast damage on the crest, a drain and a safety berm whose minimum height will be half of the largest truck tire size. Letšeng's largest truck is the CAT777; this truck has a tire diameter of 2.7 m (27.00R49).



Source: Gem Diamonds (2024)

Figure 16-13: Haulage road width design

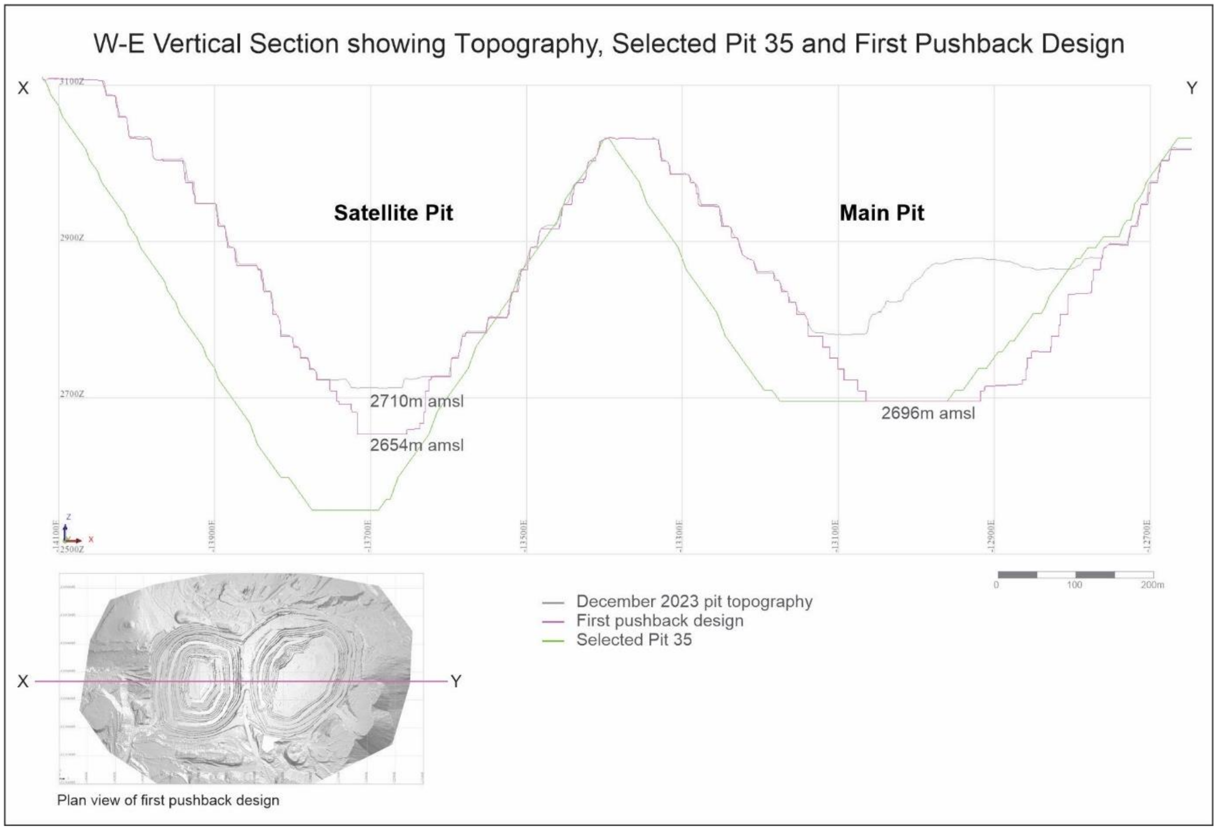
The CAT777 rigid trucks are assigned to waste and therefore the ramps in waste are designed at 26 m wide to accommodate at least three times the operating width of a CAT777 rigid truck. As the pushback deepens and ramps get into ore, the ramp width is reduced to 22m to accommodate the smaller trucks (CAT745 and CAT773) that are used to haul ore to the plants or stockpiles.

The ramps are designed to a gradient of maximum 10% with some variations in kimberlite towards the bottom of the pushback.

The pit exits for the various mining areas are positioned as a trade-off between proximity to WRDs, process plant front end, surface infrastructure, terrain at exit and minimal hauling distances.

First Pushback Designs on Both Pipes

The pushback designs to achieve the selected Whittle shell 35 were split into two on each pipe. The first pushback on Main Pipe is designed to mine out the ore on the eastern side of the pipe. Similarly, on the Satellite Pipe, the first pushback is designed to mine the ore on the eastern part of the pipe. Figure 16-14 shows the W-E section looking north.

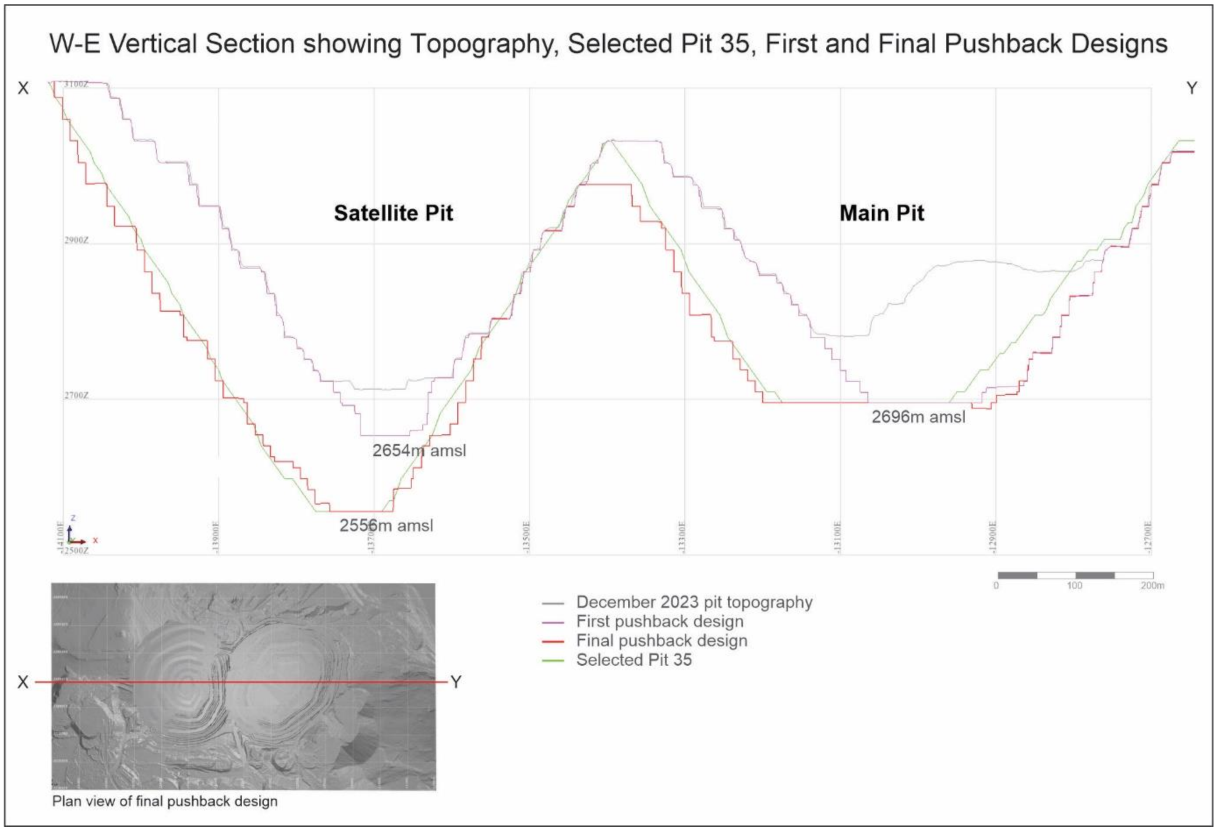


Source: Gem Diamonds (2024)

Figure 16-14: W-E section showing the selected pit 35 and the first pushback design

Final Pushback Designs on Both Pipes

The final pushback designs to achieve the selected Whittle shell 35 are both on the western side of each pipe. The western pushback on Main Pipe was merged with the initial or eastern pushback to complete one final pushback. The final pushback in Main Pipe can still be deepened to extend the LOM by about two years, subject to the upgrade of the Inferred resource that is below the bottom of the current final pit design. Similarly, the final Satellite Pipe pushback design was merged with the first pushback to complete the ultimate pit design for Satellite Pipe as shown in Figure 16-15.



Source: Gem Diamonds (2024)

Figure 16-15: W-E section showing the first and final pushback designs

Selected Optimal Pit Versus Detailed Design

To determine whether the final pit design is sufficiently similar in shape, size and position, to the selected final pit shell, the potential ore and waste contents within the design are measured and compared to the relevant open pit optimisation results. A summary of this calculation and subsequent comparison is outlined below in Table 16-4.

Table 16-4: Selected final whittle shell versus final pit design variance

	Waste (Mt)	Ore (Mt)	Total (Mt)	Strip Ratio	Ore Grade (cpht)	Carats (Mct)
Selected Final Pit (35)	87.5	55.44	142.94	1.58	1.92	1.06
Detailed Design	136.96	62.09	199.05	2.21	1.88	1.17
Variance (Selected Final Shell Vs Design)	49.46	6.65	56.11	0.63	-0.04	0.1
% Var (Selected Final Shell Vs Design)	57%	12%	39%	40%	-2%	10%

Source: Gem Diamonds (2024)

Variances between the final design and the Whittle shell were largely driven by the following:

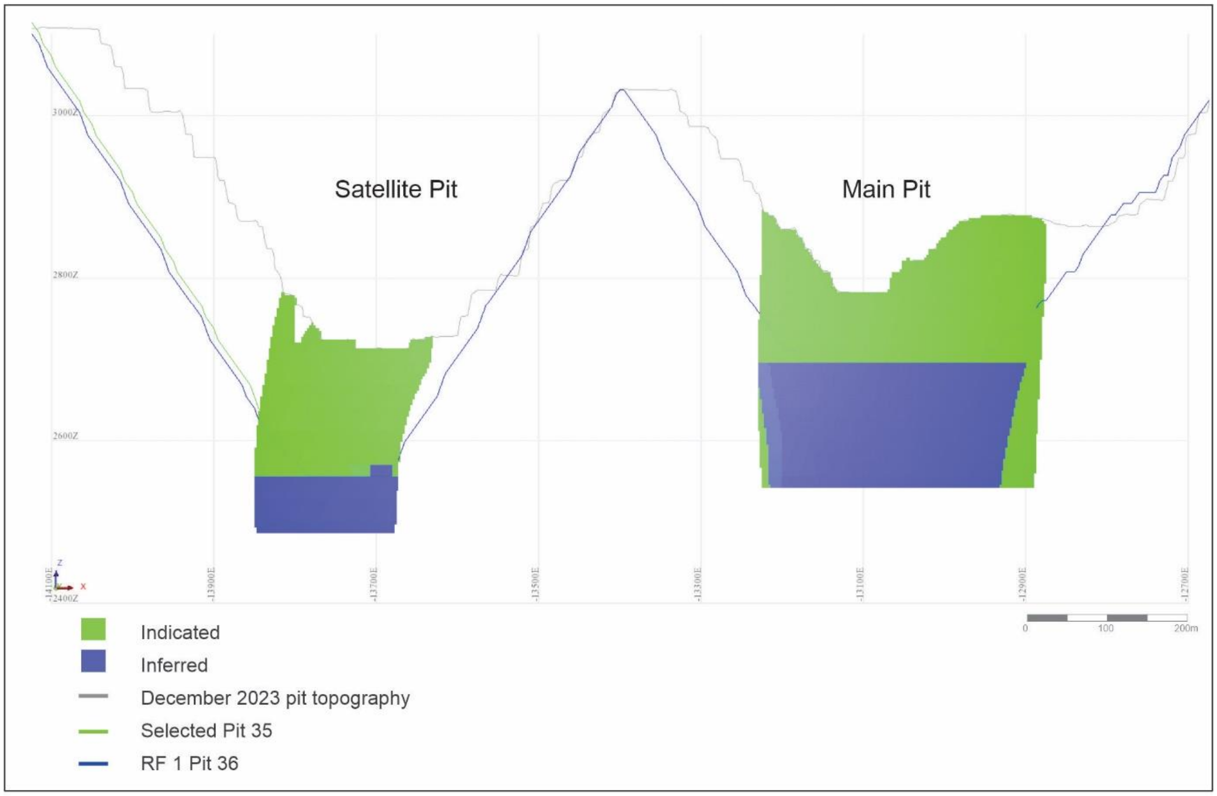
Waste – Letšeng pipes have traditionally been mined on a split shell basis and the Whittle shell had inadequate space to safely accommodate switchbacks especially in waste where 26 m wide ramps need to be excavated. To accommodate the switchbacks, additional waste was included in the pit design making the pit wider than the selected Whittle shell.

Ore – The resulting wider pit from waste mining as mentioned above gained some additional ore. The final pit design bottom is wide enough and therefore flexible to be deepened.

The waste tonnes contained in the final pit design exceed the optimised shell 35 by approximately 50 Mt (57%). This is due to a strategy adopted by Letšeng to allow for potential pit expansion. The extra waste mining in the final design resulted to mining 6.65 Mt of additional ore which will offset some of the cost of the additional waste mining. The main reason for the extra waste mining is that the final pit design has adopted a longer-term strategy of mining a marginally larger pit to expose an additional two years of potential treatable ore supply (10.6 Mt) and some 1.9 Mt of low value ore with no additional waste mining required. The exposed Inferred resource at the lowest elevation of the final Main Pit design has a good prospect of being converted to Indicated resource with geological work. Drilling of three additional diamond drill holes with a total of 810 m length is being considered to upgrade the Inferred resource in this area to Indicated resource. The extra waste mining is for maintaining practical operating space for pit expansion. If additional waste is not mined, it would be impractical to mine a subsequent pushback to access the additional Inferred resources.

Resource development potential and impact on final design

From a Reserve perspective, the final Main Pit ends where the Inferred resources start (Figure 16-16). Unconstrained pit optimisation shows there is a good opportunity for mine expansion as the optimal pit accesses ore that will add at least two years to the current LOM.



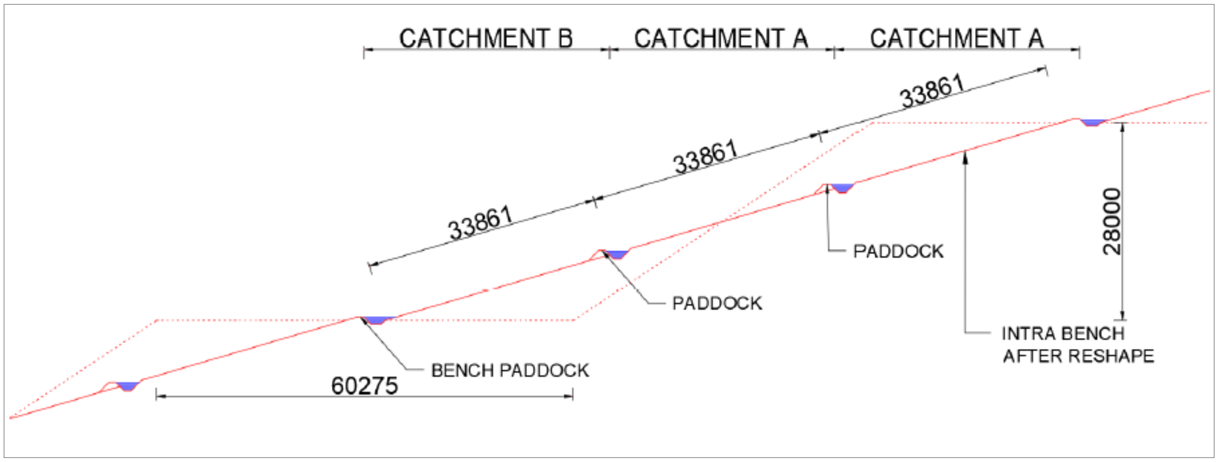
Source: Gem Diamonds (2024)

Figure 16-16: Mineral Resource classification

Waste Rock Dump Design

The WRD design criteria used are listed below:

- The WRD shall continue to be constructed with basalt material at an overall angle of repose using the following key construction parameters:
  - 28 m lifts (Central and Qaqa Paddocks)
  - Berms are designed at 60.2 m width to be accessible for reshaping purposes
- The WRD shall be reshaped to an overall final angle of 18 degrees (Figure 16-17)

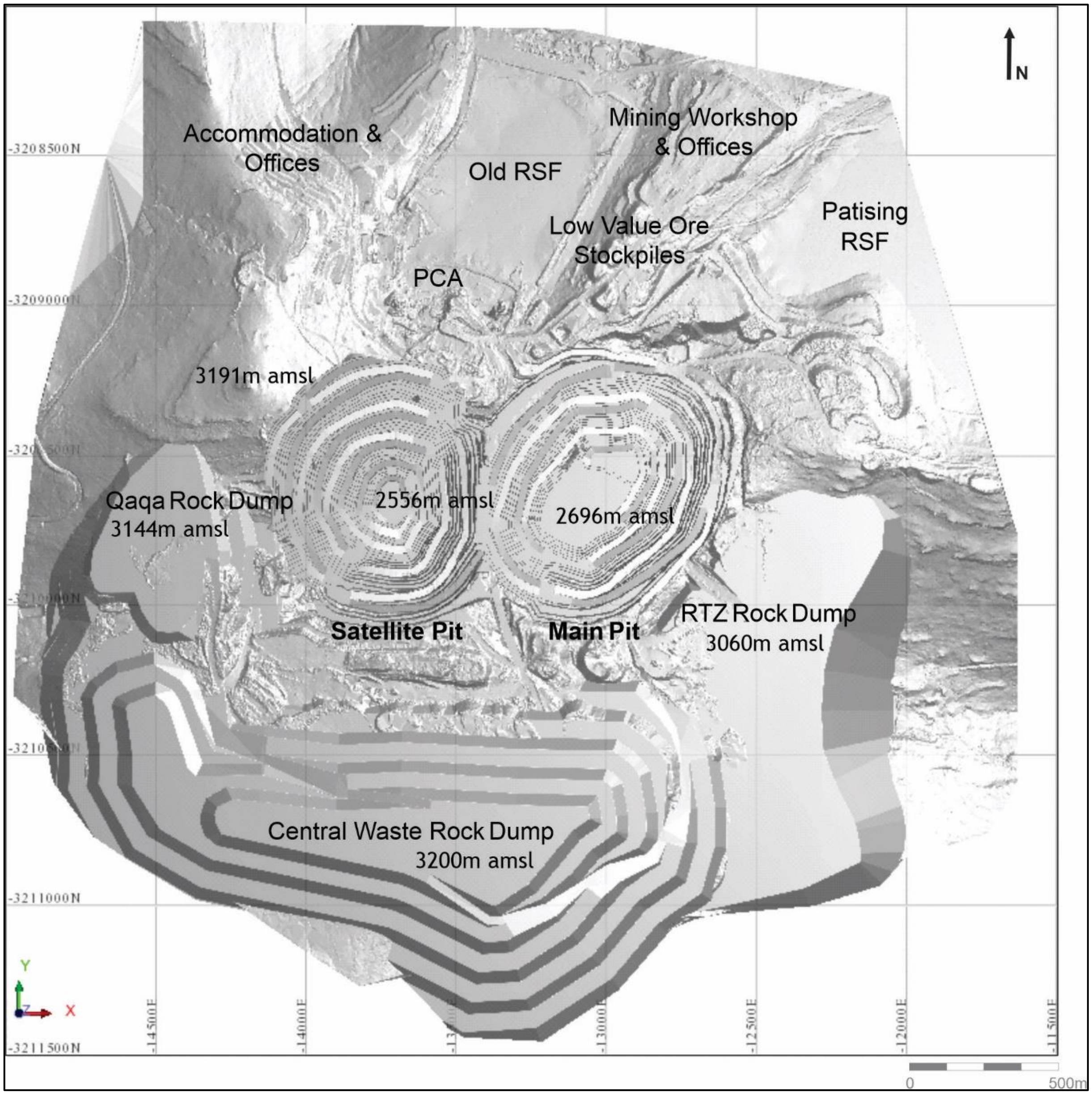


Source: Gem Diamonds (2024)

Figure 16-17: WRD slope design and reshaping profile

The WRD design has been updated to accommodate the waste volumes from the revised mine plan (Figure 16-18). Terracing the current RTZ waste dump from the bottom is considered impractical as it entails driving loaded dump trucks downhill, thereby posing a major safety hazard. To avoid driving loaded trucks downhill, a single dump face sitting at the angle of repose of broken material will be designed from the lowest elevation of ramp exit from the pit on 3060 elevation.

Above the exit of the ramp from the pits, the WRD shall be terraced at an overall slope angle of 18 degrees using 28 m lifts and 66 m berms. Ramp width on the dump will be 30 m, at a gradient of 10%. This ramp width will adequately cater for the CAT777. Final dump elevation shall be maintained below the highest elevation of the natural topography to minimise the visual impact of the WRD. The batter angle of dump faces during construction will be the natural angle of repose of the broken material. Progression of dumping shall optimise hauling distances.



Source: Gem Diamonds (2024)

Figure 16-18: Final pit and WRD designs

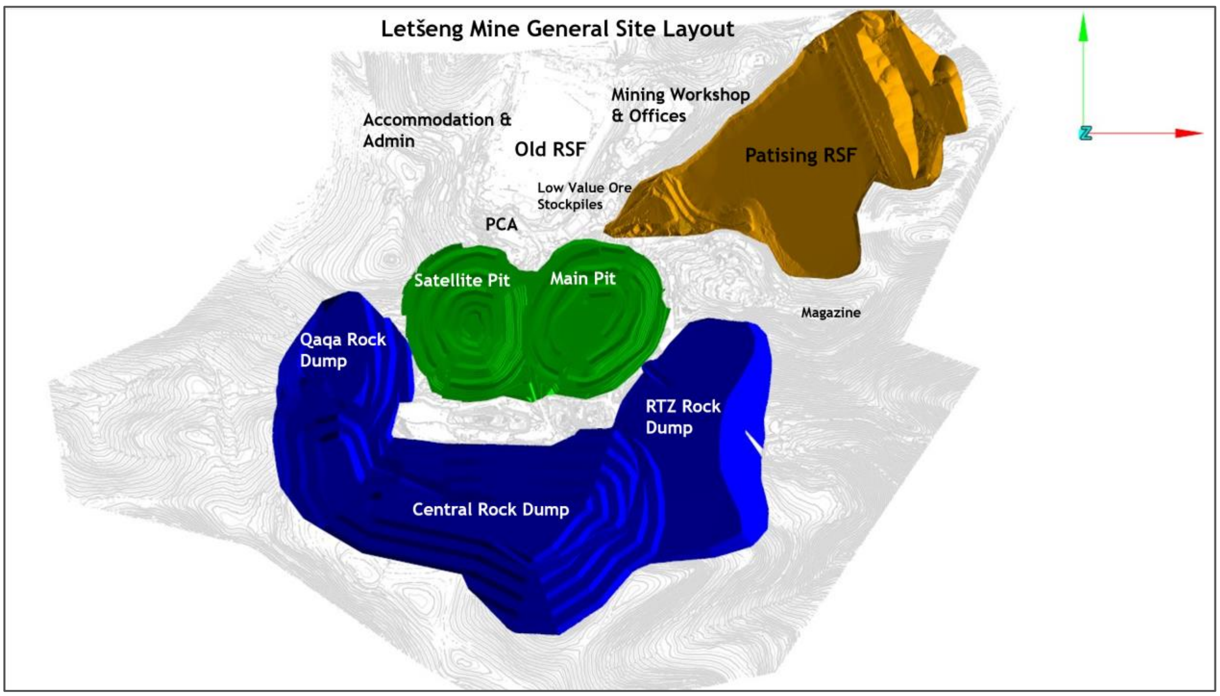
Table 16-5: Source waste rock volume and WRD capacity

Pushback	Designated Dump	Loose Volume to LOM (m^3)	Dump Design Volume (m^3)
MC4E	RTZ	6 192 699	RTZ DUMP
MC4W	RTZ	21 136 803	
MAIN PIT	RTZ	29 329 502	48 884 981
SC5W	QAQA	132 509	CENTRAL and QAQA DUMP
SC6W	CENTRAL	52 934 104	
SATELLITE	QAQA+CENTRAL	53 066 613	60 311 257

Source: Letšeng Diamonds (2024)

16.3.4 General Site Layout

Figure 16-19 shows the general site layout.



Source: Letšeng Diamonds (2024)

Figure 16-19: Letšeng general site layout

16.3.5 Mine Production Scheduling

Introduction

Scheduling was completed by Gem Diamonds Technical Services using XPac mine scheduling software. Production schedules were completed for all the remaining pushbacks to achieve a plant feed of 4.8 Mt per annum.

Waste stripping in Satellite Pit Cut 6 West will commence after ore mining is completed in Satellite Pit Cut 5 West during the third quarter of 2025.

The treatment plants will ramp up from 4.6 Mtpa in 2024 to a steady state of 4.8 Mtpa from 2026 to LOM. All low-value ore that will be mined to access high value ore will be stockpiled separately for future treatment when need arises or at the end of LOM.

The following sections describe assumptions and input parameters for scheduling, followed by stockpile inventories, and then production and mill feed schedules.

Assumptions and Input Parameters

Production scheduling has three key material type activities:

1. Mining of basalt to the WRDs
2. Mining of high value ore to the processing plants on a mine to mill basis
3. Mining of low value ore to the low value ore stockpiles

Plant feed contributes a total of 4.8 Mt plant throughput per annum for the LOM.

Table 16-6 details the equipment production rates.

Table 16-6: Mine equipment production rates assumptions

Machine	Activity	t/h
Cat 390D 100t Excavator	Digging	560
Cat 992K Loader	Digging	750
Cat 988H loader	Digging	600
Cat 6015 150t Excavator	Digging	735
Cat 745A ADT	Hauling	80
Cat 773F 55t truck	Hauling	362
Cat 777G 100t truck	Hauling	400
Cat 340D excavator	Digging	290
Machine	**Activity**	**m/h**
AC D65 FR 165mm - ORE	Drilling	26
AC D65 FR 127mm - ORE	Drilling	27
AC D65 FR 165mm - BASALT	Drilling	21
AC D65 FR 127mm - BASALT	Drilling	22

Source: Gem Diamonds (2024)

Mine Production Schedule

The first pushbacks have been scheduled to provide ore to the plants from 2024 to 2029 whilst the final pushbacks will provide ore to the plants from 2029 to LOM. Whilst there is continuous ore supply from the Main Pipe to LOM, there will be a four-year break in supply of Satellite Pipe ore while waste stripping in the final Satellite Pipe pushback progresses. Table 16-7 shows further details on the sequencing of the different pushbacks with their original commencement dates and respective depths with 3046 masl as the datum elevation.

The summary LOM mining schedule is presented in Table 16-8 and the ore and waste mined per pushback are shown in Figure 16-20 and Figure 16-21.

Table 16-7: Pushback sequence, full strip ratio and depths at life of cut

		Waste tonnes	Start	Finish	Ore tonnes	Start	Finish	Strip Ratio	Pit Depth
Main Pit									
First Pushback	Cut 4E	61.1	2017	2029	27.4	2021	2029	2.2	350
Final Pushback	Cut 4W	44.4	2022	2033	25.7	2028	2037	1.7	462
Satellite Pit									
First Pushback	Cut 5W	61	2017	2020	15.9	2019	2025	3.8	392
Final Pushback	Cut 6W	87.7	2025	2035	11.6	2030	2035	7.6	504

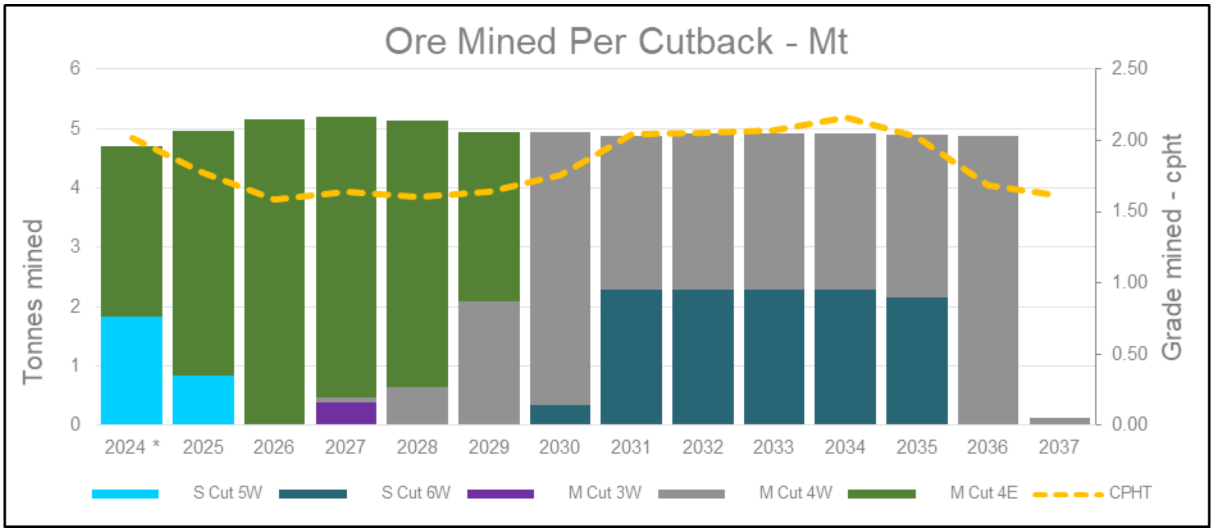
Source: Gem Diamonds (2024)

Table 16-8: Summary LOM mining schedule

LOM Summary Schedule	Units	Total	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Mining Schedule																
Total Waste Mined	**Mt**	**137.0**	**9.0**	**12.9**	**18.2**	**21.2**	**21.1**	**21.2**	**19.5**	**10.2**	**2.0**	**1.0**	**0.5**	**0.2**	**0.0**	**-**
Main Pit																
MC4E	Mt	**10.4**	3.7	3.6	1.8	0.8	0.4	0.1	-	-	-	-	-	-	-	-
MC4W	Mt	**38.5**	5.0	5.0	5.4	5.3	5.7	6.2	4.5	0.6	0.4	0.3	0.1	0.1	0.0	0.0
Subtotal	Mt	**48.9**	8.7	8.6	7.2	6.2	6.1	6.2	4.5	0.6	0.4	0.3	0.1	0.1	0.0	0.0
Satellite Pit																
SC5W	Mt	**0.3**	0.2	0.0	-	-	-	-	-	-	-	-	-	-	-	-
SC6W	Mt	**87.8**	-	4.2	11.0	15.0	15.0	15.0	15.0	9.6	1.6	0.8	0.4	0.1	-	-
Subtotal	Mt	**88.0**	0.2	4.3	11.0	15.0	15.0	15.0	15.0	9.6	1.6	0.8	0.4	0.1	-	-
Total Ore Mined	**Mt**	**64.6**	**4.7**	**5.0**	**5.2**	**5.2**	**5.1**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**	**0.1**
Main Pit																
MC4E	Mt	**24.6**	2.9	4.1	5.2	5.1	4.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MC4W	Mt	**25.7**	0.0	0.0	0.0	0.1	0.6	2.1	4.6	2.6	2.6	2.6	2.6	2.7	4.9	0.1
Subtotal	Mt	**50.3**	2.9	4.1	5.2	5.2	5.1	4.9	4.6	2.6	2.6	2.6	2.6	2.7	4.9	0.1
Satellite Pit																
SC5W	Mt	**2.7**	1.8	0.8	-	-	-	-	-	-	-	-	-	-	-	-
SC6W	Mt	**11.6**	-	-	-	-	-	-	0.3	2.3	2.3	2.3	2.3	2.2	-	-
Subtotal	Mt	**14.3**	1.8	0.8	-	-	-	-	0.3	2.3	2.3	2.3	2.3	2.2	-	-
Low Value Ore to Stockpile	Mt	**1.9**	0.1	0.2	0.3	0.4	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	-
Strip Ratio		**2.1**	1.9	2.6	3.5	4.1	4.1	4.3	3.9	2.1	0.4	0.2	0.1	0.0	0.0	-

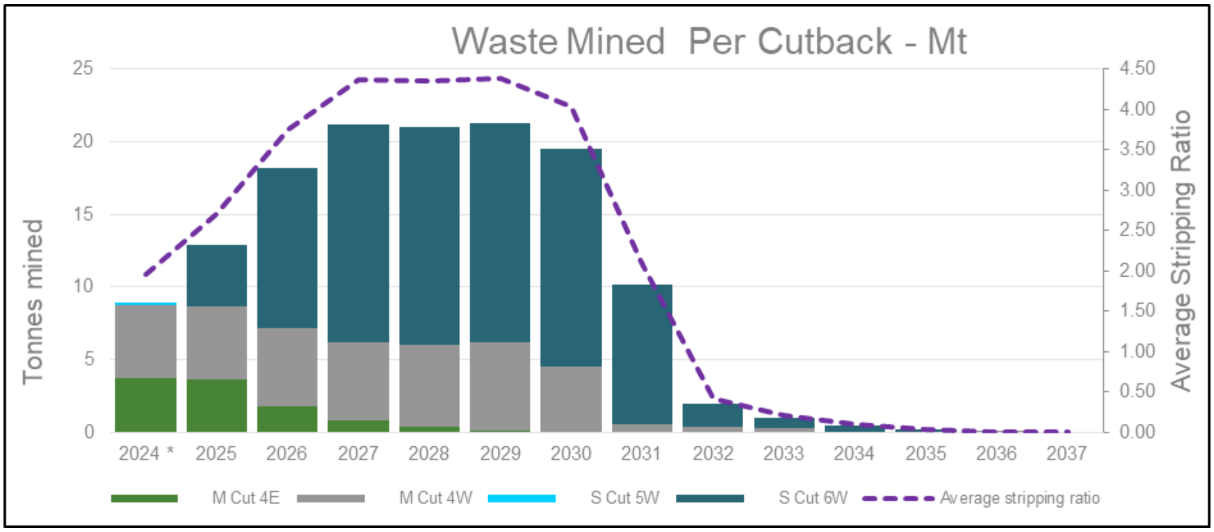
Source: Gem Diamonds (2024)

Notes: Variation in the production schedule as compared to Table 16-7 can be attributed to Inferred material included in production schedule although this material has been assigned zero grade and does not contribute to recovered carats and revenue.



Source: Gem Diamonds (2024)

Figure 16-20: Ore mined per pushback and the mined grade



Source: Gem Diamonds (2024)

Figure 16-21: Waste mined per pushback and average stripping ratio

Mining Period Progress Plots

The SRK QP reviewed the sinking rates and period progress plots produced in Xpac Software for practicality. The QP is satisfied that the mine production schedule is achievable.

Plant Feed Production Schedule

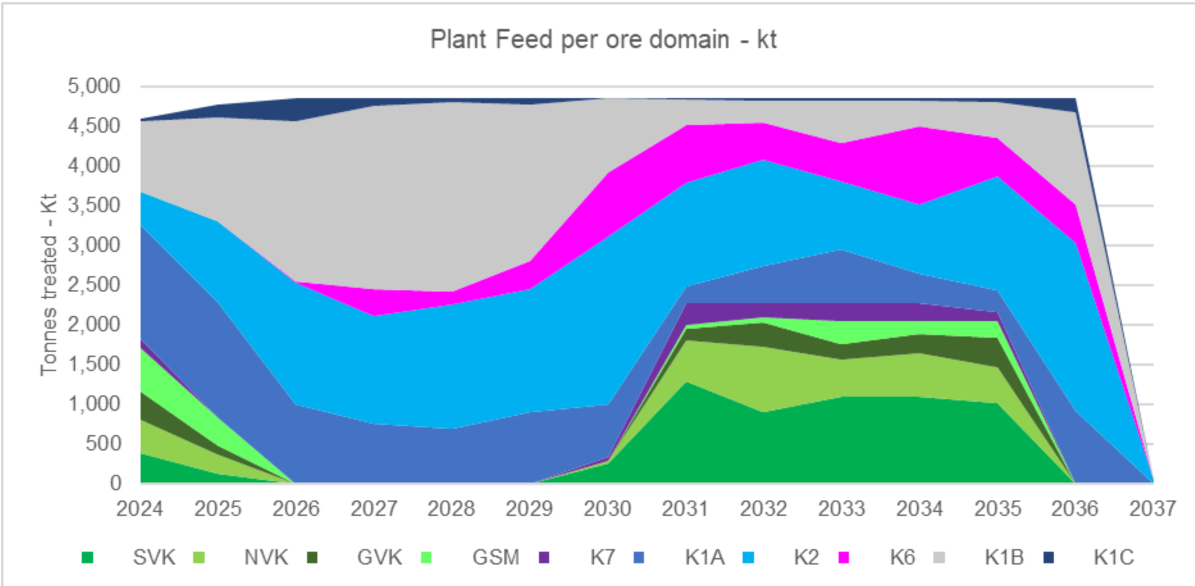
Table 16-9 and Figure 16-22 show the plant feed per pipe, from 2024 until 2037. The plant feed considers only ROM ore from mining at a consistent feed of 4.8 Mt per annum until the end of mine life in 2037.

Table 16-9: LOM annual plant feed schedule

LOM Summary Schedule	Units	Total	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Plant Schedule																
Treated Tonnes	**Mt**	**62.6**	**4.6**	**4.8**	**4.8**	**4.8**	**4.8**	**4.8**	**4.8**	**4.8**	**4.8**	**4.8**	**4.8**	**4.8**	**4.8**	**0.04**
Main Pipe Ore	Mt	**48.3**	2.8	3.9	4.8	4.8	4.8	4.8	4.5	2.6	2.6	2.6	2.6	2.7	4.8	0.04
Satellite Pipe Ore	Mt	**14.3**	1.8	0.8	-	-	-	-	0.3	2.3	2.3	2.3	2.3	2.2	-	-
Average Grade	**cpht**	**1.84**	**2.0**	**1.8**	**1.6**	**1.6**	**1.6**	**1.6**	**1.8**	**2.0**	**2.0**	**2.1**	**2.2**	**2.0**	**1.5**	**1.6**
Main Pipe Ore grade	cpht	**1.66**	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.8	1.7	1.8	1.9	1.8	1.5	1.6
Satellite Pipe Ore grade	cpht	**2.43**	2.7	2.8	-	-	-	-	2.1	2.3	2.4	2.4	2.4	2.4	-	-
Recovered Carats	**k carats**	**1151.5**	**92.3**	**85.0**	**76.7**	**79.6**	**77.8**	**79.4**	**85.2**	**99.0**	**99.3**	**100.4**	**104.6**	**98.3**	**73.3**	**0.7**
Main Pipe	k carats	**804.6**	43.2	62.0	76.7	79.6	77.8	79.4	78.3	47.2	44.9	45.0	49.6	47.0	73.3	0.7
Satellite Pipe	k carats	**346.9**	49.2	22.9	-	-	-	-	6.9	51.7	54.3	55.4	55.1	51.4	-	-

Source: Gem Diamonds (2024)

Notes: Variation in the production schedule as compared to Table 15-9 can be attributed to Inferred material included in production schedule although this material has been assigned zero grade and does not contribute to recovered carats and revenue.



Source: Gem Diamonds (2024)

Figure 16-22: Plant ore feed schedule per kimberlite domain or kimberlite domain grouping

16.4 Mining Operations

16.4.1 Introduction

Letšeng Mine has traditionally used contractor mining services for drilling and charging, load and haul, re-handle and pit support services. Starting in December 2023, Letšeng mine has been transitioning to insource drilling, loading and hauling activities whilst outsourcing dewatering, charging and blasting services. The transition to owner-miner model is still in its infancy stage and it is expected that further operational efficiencies and cost reductions will be captured.

16.4.2 Drilling and Blasting

The pit configuration bench height of 14 m and the basalt country rock suit drill rigs capable of drilling drill holes with a diameter of 165 mm. Drill burden, spacing and sub-drill design are functions of the varying rock types in the pit, the fragmentation and heave required for the subsequent process.

Drilling of both ore and waste is done using a fleet of Atlas Copco Epiroc D65FR drill rigs that are capable of drilling 127mm–165 mm vertical and inclined holes. All blocks in ore and waste are drilled with 127 mm and 165 mm drill bits, respectively, except on waste trim blocks, where a 127 mm drill bit is used on the two buffer lines along the pre-split.

The Kuz Ram model is used with geological rock characteristics inputs to design the expected fragmentation outcome. Waste (basalt) rock expected fragmentation outcome is 95% of blasted rock at

-750 mm. Ore (kimberlite) expected fragmentation outcome is 80% of blasted rock at -350 mm. Ore rock fragmentation expected top size is 800 mm based on the new primary crushing unit requirements.

Charging and blasting activities are done using an explosives mobile manufacturing unit, stemming tool (CAT906 wheel loader), blasting accessories vehicle, and several special purpose LDVs carrying personnel. Emulsion blend from Enaex Africa (under Enaex Lesotho) is used for blasting. The emulsion-based product's water resistant characteristics and a higher velocity of detonation is utilised to achieve the required fragmentation.

As part of ensuring alignment with recommendations from Section 16.2.8, Letšeng embarked on a berm retention improvement initiative aimed at optimising blasting activities to achieve the pit design requirements. This also improves the safety of both personnel and machinery working under the pit highwalls. Pre-split parameters are designed to get safe final walls with minimum crest damage in line with the requirement for steeper pit slopes.

Electronics in blasting

The application of electronic blasting at Letšeng is aimed at achieving more precise timing in comparison to pyrotechnic timing. The blasting engineer at the mine utilises electronic detonators to achieve faster timing between holes and slower timing between rows than pyrotechnic blasting initiation systems can achieve. The use of electronic detonators at Letšeng allowed enhanced precision on blast timing, thereby protecting highwalls against blast damage and contributing to slope stability.

Load and Haul Equipment

The mining fleet consists of a mix of smaller classed equipment used for ore and re-handling and larger equipment used primarily for waste stripping. The larger class waste fleet consists of 90-140 t hydraulic excavators, with bucket capacity of 5-8 m3 in backhoe configuration, and 90-100 t payload off-highway rigid frame dump trucks. The smaller class ore fleet consists of 90 t hydraulic excavators, with bucket capacity of about 5 m3 in backhoe configuration and 45 t payload off-highway articulated dump trucks. The primary mining fleet of trucks and excavators will be supported by standard auxiliary equipment.

Table 16-10 shows the schedule of primary mining equipment to deliver the mining production schedule presented in Table 16-8.

Table 16-10: Primary equipment schedule

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste - Mt	9	13	18	21	21	21	20	10	2	1	0	0	0	0
Ore - Mt	5	5	5	5	5	5	5	5	5	5	5	5	5	0
Total - Mt	14	18	23	26	26	26	24	15	7	6	5	5	5	0
MACHINE	**Number required**													
Drills ore & waste	4	6	7	8	8	8	7	5	3	3	4	4	3	1
6015 Digger Waste	1	2	2	2	2	2	2	1	0	0	0	0	0	0
6020 Digger Waste	0	0	0	0	0	0	0	0	0	0	0	0	0	0
992K Waste	0	1	1	1	1	1	1	1	0	0	0	0	0	0
988K	1	0	0	0	0	0	0	0	0	0	0	0	0	0
390F/395 Ore & Waste	2	2	3	4	4	4	3	2	2	2	2	2	2	0
340D Ore	1	1	1	1	1	1	1	1	1	1	1	1	1	1
777G waste	7	10	12	14	16	20	20	14	4	2	1	1	1	0
773F ore & waste	6	5	7	10	11	13	13	7	7	7	7	9	6	0
745A ore	7	8	8	9	11	13	13	5	6	6	6	6	9	4
Total Primary Equipment	**29**	**35**	**41**	**49**	**54**	**62**	**60**	**36**	**23**	**21**	**21**	**23**	**22**	**6**

Source: Gem Diamonds (2024)

Equipment Availability

Equipment availability has been modelled for each piece of equipment. Models have been constructed to account for the following operational factors:

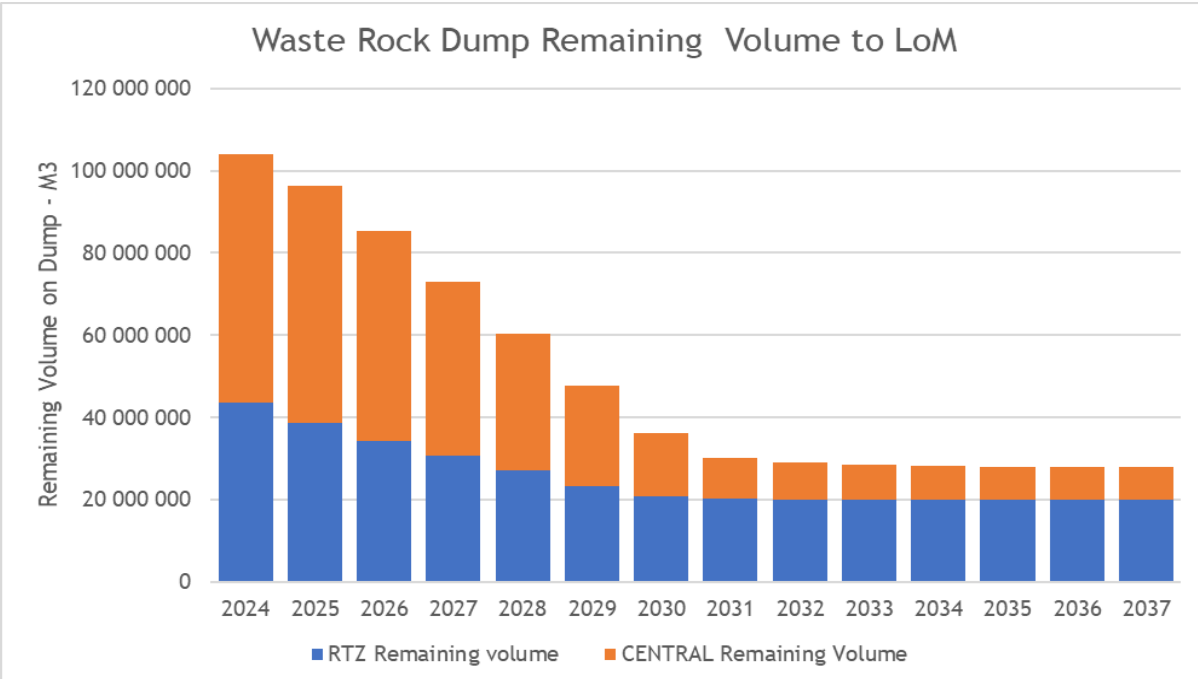
- Equipment age
- Major capital overhauls
- Seasonal effects of extreme cold weather

Target average availability is 85% and target average utilisation is 85% giving an overall equipment effectiveness of 72.25%.

16.4.3 Dumping (Waste Rock at WRDs and Ore at Stockpiles and Crusher)

Waste Rock Dumps

The WRDs associated with mining operations will continue to be constructed to meet the requirements of the Mining Regulations and international best practices. The WRDs are to be constructed with the natural rill angle of approximately 36°, which is the angle of repose of the dumped material. Identified sections of the dump will then be contoured progressively to an overall slope angle of 18° (1:3) to allow for slope stability and re-vegetation. The WRD will be progressed by tipping from a higher level and progressively pushing the waste out with a dozer. Approximately 81 million m3 will be required to store 137 Mt of waste rock. Taking into account a dump expansion to the south, the current WRD has sufficient capacity to accommodate waste from Satellite Pit Cut 6 West and the remaining waste in the Main Pit Cut 4 design (Figure 16-23). Should additional storage be required, additional lifts will be constructed as required.



Source: Gem Diamonds (2024)

Figure 16-23: Remaining volume of WRD to LOM

Ore Stockpiles

As ore is mined from the pits, high value undiluted ore is hauled to the primary crushing area for immediate feed to the plants and/or to the high value ore stockpiles. Low value ore domains, e.g. K4, K2D and any highly diluted ore, are directed to the low value stockpiles. K4 is Inferred resource and K2D is unclassified and therefore directed to the stockpiles upon mining. As such, Letšeng Mine currently makes use of high value stockpiles as part of the process plant feed management programme. The surface stockpiles can be aggregated into three main categories, namely:

4. Main Pipe high value stockpiles
5. Satellite Pipe high value stockpiles
6. Main Pipe low value stockpiles

For summarised reporting purposes, the Main Pipe stockpiles are combined in a single reporting line.

The year end closing balances of the surface stockpiles are detailed in Table 16-11.

Table 16-11: Stockpile closing balances as of 31 December 2023

Stockpile Name	Dec 2023 Tonnage	Ore Domains	Expected grade (cpht)	Carats
Satellite Pipe Stockpiles	176 642	NVK+SVK+GVK+Kimb7	1.41	2 489
Main Pipe Stockpiles	900 682	K1+K4+K6	1.25	11 245
Live Cone Stockpile	11 165	MIX	1.95	218
Totals	1 088 489		1.28	13 952

Source: Gem Diamonds (2024)

The mine plans to use the same stockpiling strategy for the remaining mineral reserve. The low value stockpile ore is planned to be processed at the end of LOM. If it is treated earlier than the end of LOM, it will be because of unforeseen circumstances preventing access to higher value ore.

16.4.4 Support

Pit support equipment for the Letšeng Mine operation consists of dozers, graders, fuel bowsers, water bowsers, hydraulic hammers, and wheel loaders. The function of this equipment is to support the primary mining equipment through maintenance of pit floor and haul road conditions, provide clean-up around the excavators to prevent excessive tyre damage, secondary breakage of oversize rocks and to water-down road surfaces to suppress dust.

Ancillary equipment for the operation consists of service trucks, tyre handlers, mobile crane, water pumps, lighting plants, TLB, LDVs and wheel loaders.

Further details on support equipment details are in Table 16-12.

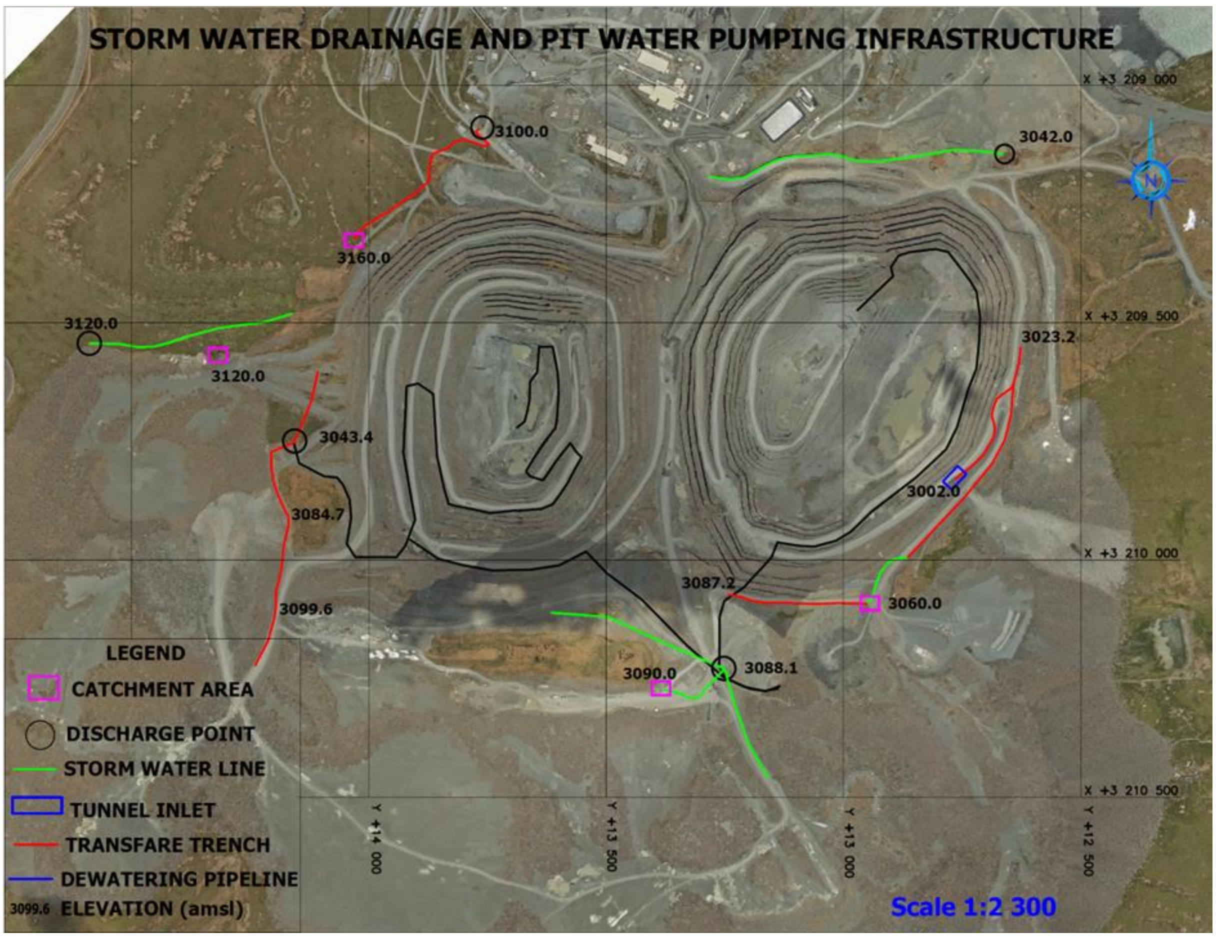
Table 16-12: Support equipment schedule

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Waste - t	8 972 116	12 925 297	18 182 821	21 176 772	21 057 628	21 244 017	19 520 000	10 190 876	1 999 749	1 037 615	452 267	186 347	17 583	-
Ore - t	4 700 067	5 014 262	5 151 025	5 589 141	5 139 582	4 937 784	4 945 767	4 879 526	4 914 575	4 920 278	4 914 987	4 898 110	4 881 014	65 649
Total O&W - t	13 672 183	17 939 559	23 333 845	26 765 912	26 197 211	26 181 801	24 465 767	15 070 402	6 914 324	5 957 892	5 367 254	5 084 457	4 898 597	65 649
MACHINE														
WORKSHOP	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT 834H Wheel dozer	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PUMP 1 Same level	0	0	0	1	1	1	1	1	1	1	1	1	1	1
PUMP 2 Puddle hopper	0	0	0	1	1	1	1	1	1	1	1	1	1	1
PUMP 3 Large	0	0	0	3	3	3	3	3	3	3	3	3	3	3
CAT 320 with Hammer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CAT High wall Scaler	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT D8 Dozer	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT D9 Dozer	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Support Generators	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CAT 140 Motor Grader	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT 745 Service Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT 745 Water Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT 428 Back Hoe Loader	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT 340 Excavator	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Site Taxi	6	6	6	6	6	6	6	6	6	6	6	6	6	6
The Moteng Machine	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT 906 Stemming Feeder	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LIGHT SET	2	2	2	2	2	2	2	2	2	2	2	2	2	2
LDV	9	9	9	9	9	9	9	9	9	9	9	9	9	9
BUS 65 Seater	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CAT TH414 Telehandler	1	1	1	1	1	1	1	1	1	1	1	1	1	1
730 23k fuel truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Utility machine	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Merc Sprinter	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Transport trailers	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Service truck Other	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Support Machines	42	42	42	47	47	47	47	47	47	47	47	47	47	47
Total Machines	71	77	83	96	101	109	107	83	70	68	68	70	69	53

Source: Gem Diamonds (2024)

16.4.5 Storm Water Control and Pit Dewatering

Water management around the pits consists of run-off control, whilst water in the pits is handled using sumps. The dewatering infrastructure and equipment are sized to handle groundwater inflows and precipitation. The storm water management plan around the pits is based on diverting as much surface water as possible away from the open pits, then collecting the water that does report to the open pits, using sumps before pumping it to the approved mine discharge points, as shown in Figure 16-24. There are intermediate artificial sumps (stage tanks) along the pit ramps where stage pumps will be located to pump the water to the next stage tank or to surface discharge point.

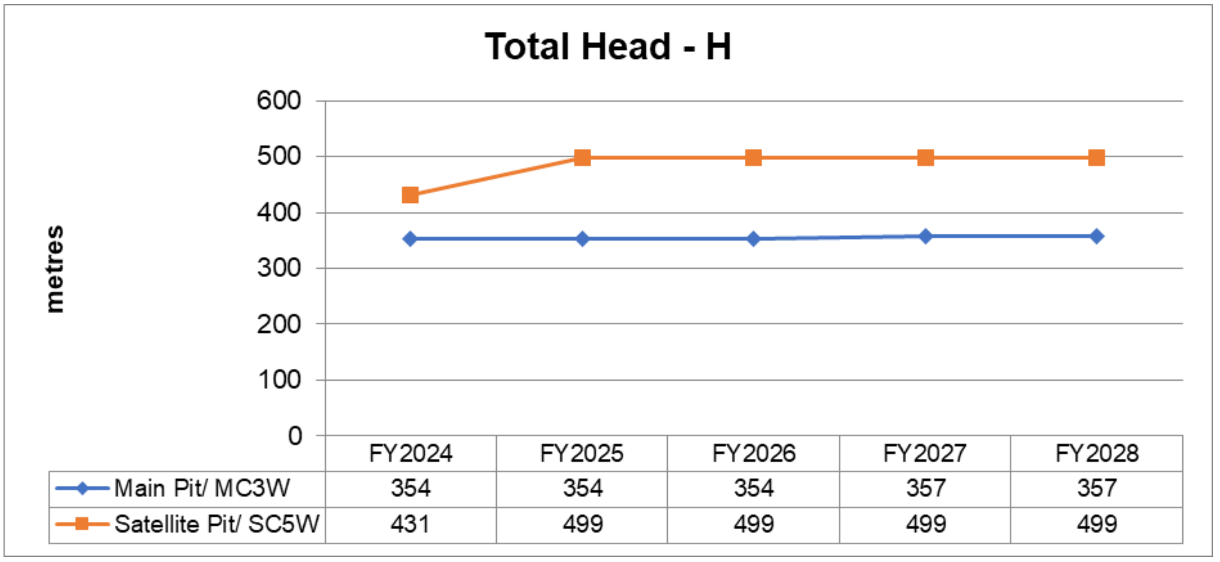


Source: Letšeng Diamonds (2024)

Figure 16-24: Drainage and dewatering pipe routes

As the pit is already operating at depths greater than 300 m below crest, specialist high lift pumps are installed. Wheeled diesel pumps will be pumping directly from the installed pit sumps with awareness to withdraw them from the pit floor if required in the event of a 1:1000-year rainfall event. Pumping infrastructure will therefore advance as required by the ongoing mining activities.

The total pumping head is expected to remain the same for Main Pit until Main Pit Cut 4 East reaches bench 2780 whilst Satellite Pit will cease to increase until such time that Satellite Pit Cut 6 West reaches bench 2654 as shown in Figure 16-25.



Source: Letšeng Diamonds (2024)

Figure 16-25: Pumping head projection

Letšeng does not have ex-pit dewatering holes to provide active dewatering for the current pits; groundwater is handled from the pit sumps.

16.4.6 Grade Control

Grade control at the Letšeng Mine, is performed by geologists who ensure that the ore fed to the plants is of planned grade from a specific kimberlite domain or domains if blending is required. The exercise becomes crucial where there is contamination of ore at the contact areas (dilution and ore loss) or around internal basalt mega xenoliths. The geologists map the contacts and are assigned to the ore loading faces to visually examine and guide excavator operators.

17 Recovery Methods

17.1 Introduction

This section is aimed at analysing the current flowsheet design, historical production data and any relevant operational practices to determine whether the existing metallurgical plants have the capacity to handle the updated mineral resource at the required tonnages and achieve the required level of diamond recovery efficiency with minimal diamond damage.

Approximately 5 to 6 Mt of ore and 20 to 24 Mt of waste are mined per annum. Letšeng operates two kimberlite treatment plants that have a combined capacity of 5.7 Mt of ROM ore per annum.

Review of the current Letšeng Mine operations considered the following main criteria:

- Plant design
- Process efficiency
- Plant production
- Plant availability and utilisation
- Diamond liberation
- Tailings retreatment
- Tailings and slimes disposal
- Diamond control
- Diamond damage
- Manpower
- Operating costs
- Capital expenditure
- Potential improvements

17.2 Process Plant Evaluation

17.2.1 No. 1 Plant Design

The No. 1 Plant was designed and built by DRA and was commissioned in 2004.

The plant capital expenditure budget was very limited at the time as this was a new mine under development, and the process engineering design was completed in recognition of this constraint. In addition, the need to protect the plant from the harsh weather conditions prevailing in the highlands of Lesotho had to be considered.

The Process Flow Diagrams (PFDs) indicate that a few compromises were made, namely:

- The entire Re-crush product is recycled through the Dense Medium Separation (DMS) Plant rather than being sized beforehand. This has the disadvantage of increasing the installed capacity of the DMS Plant, along with higher operating costs, but has the potential advantage of recovering diamonds larger than the mid-point cut-off size (mcos) if these have been misplaced in prior unit processes or liberated in the Re-crush circuit.
- This current circuit configuration can also be viewed from the perspective that the processing of the recycle load from the Re-crush circuit effectively takes up treatment capacity that could have been used for treating DMS Plant feed originating from fresh plant head feed. This is an area for possible improvement should the need arise for increased plant head feed capacity.
- The design of the DMS Plant is complex and makes operations and maintenance difficult. There is a single DMS Feed Bin, Feed Conveyor, and DMS Feed Preparation Screen that then feeds the two separate DMS circuits: the Fines (-27mm+2mm) and the Coarse (-55mm+27mm). This means that it is not possible to accurately control the feed rate to either of the two DMS circuits for steady state operation, as this is dependent upon the size frequency distribution of the material being fed to the DMS Feed Preparation Screen. In addition, the reliance on a common feed system also implies that the two DMS circuits cannot be operated independently. In instances where the particle size distribution in the feed is biased towards one DMS circuit, there is no freedom to suspend one module and allow for other activities such as sampling or urgent maintenance to take place.

Neither of these compromises is considered to have a significant impact on the overall process efficiency of the plant but does increase the operating and maintenance costs and reduces flexibility.

The only major change that has been made to the plant since commissioning is the installation of an additional Re-crush Crusher to handle the higher tonnages reporting to this section than the design originally allowed for.

The new Primary Crushing modules, which will allow for separate feeding of No. 1 Plant and No. 2 Plant, should improve both plants' utilisations but will have a limited impact on the process efficiencies. It is noted that the design allows for the two plants to be fed separately and therefore avoid mixing of ROM on the Primary Stockpile. This provides an opportunity to resolve the issue of the potentially different levels of diamond breakages that could result from the two different plant designs.

17.2.2 No. 2 Plant Design

The No. 2 Plant was designed and built by Bateman. It was commissioned in 2007.

The design was again based on the premise that the equipment should be protected from the elements (harsh weather conditions) and was therefore enclosed in a single plant building, which led to the inclusion of vertical conveyors for materials handling between unit processes. This proved to be problematic. The Re-crush Crusher Recycle Vertical Conveyor was replaced by standard belt conveyors in 2011 due to poor availability, excessive spillage and safety considerations. The Re-crush Crusher and the two DMS Vertical Conveyors are still operational.

The two DMS modules, Fines (-25mm+2mm) and Coarse (-55mm+25mm), are both gravity fed. The main reason for selecting this option was to remove the potential for damage to large diamonds in the Cyclone Feed Pumps. To date, it does not appear to be conclusive as to whether or not this design decision was correct when comparing the diamonds recovered from No. 2 Plant with those from No. 1 Plant, which has pump fed DMS circuits. As noted above, this can be resolved once the new Primary Crushing modules are all operational.

The Mixing Box designs for the DMS modules have been modified since commissioning to allow for easier operational control.

17.2.3 Recovery Plant

The Recovery Plant initially utilised single-stage Flowsort X-ray Fluorescence (XRF) machines as the only final diamond recovery process units for all of the size ranges. Investigations into their diamond recovery efficiencies indicated that they were preferentially losing large Type II diamonds. This led to the replacement of the Coarse Flowsort machines with Steinert X-ray Transmission (XRT) machines, which are now used for treating the -65mm+15mm and the -15mm+5mm size fractions for No. 1 Plant and No. 2 Plant separately. The Flowsort machines are still used for treating the -5mm+2mm fractions for No. 1 Plant and No. 2 Plant separately.

The Recovery Plant tailings are retreated in the separate Tailings Retreatment Plant. One TOMRA XRT machine is used for treating three of the four size ranges in a batch format: -50mm+20mm; -20mm+10mm; -10mm+5mm. A second TOMRA machine treats the -5mm+2mm fraction.

The Tailings Retreatment Plant recovers a significant number of Type II diamonds.

The installation of the XRT machines also led to the separation of the Sorthouse into two sections; one for treating the XRT concentrates and the other for the Flowsort concentrates.

17.3 Process Efficiencies

Both plants are managed, operated and maintained by Minopex under contract to Letšeng Mine.

17.3.1 No. 1 Plant

The QP’s site visit indicated that the No. 1 Plant operations were generally of a good standard.

The diamond liberation processes of Primary Crushing, Scrubbing, Screening, Secondary Crushing and Re-crush Crushing were generally operating well. For minimal diamond damage, cone crushers should always operate in a choke-fed condition, which means that the bed of material in the crusher covers the feed plate, and the crusher operates in as near an inter-particle crushing mode as possible. This improves the crusher performance in terms of size reduction and product shape, as well as minimising diamond damage as much as possible for this type of crusher. The Secondary and Re-crush Cone Crushers were operating with level controls and appeared optimal for the design.

The additional Re-crush Crusher was not working at the time of the site visit as the plant material mass balance did not require it at that time.

The optimal operation of the DMS unit process is vital to the efficient recovery of diamonds as there are many parameters that can lead to revenue losses, including, *inter alia*:

- DMS Feed Preparation Screen efficiency
- Cyclone pressure and flowrate
- Cyclone physical parameters
- Ferrosilicon (FeSi) specifications
- Medium density control
- Feedrate and the related medium:ore ratio

The Coarse DMS section treats the -55mm+27mm size fraction and the Fines DMS section treats the -27mm+2mm size fraction. In the QP’s opinion, the set-points for each section were correct for the plant design. The cyclones could not be inspected during the site visit as the plant was operational at the time. However, the maintenance records indicated that they are inspected regularly and replaced when required.

In diamond plant operations, there is no practical method of directly determining the efficiency of the DMS process and therefore tracer tests are conducted to assess the likely efficiency. These tracer tests are conducted regularly, and the results are reported to management.

150D FeSi is used in both DMS circuits, which the QP considers to be correct. The FeSi consumption is slightly high, at approximately 230g/t of DMS feed compared to the budget of 150g/t. There is an opportunity to reduce this to the budget level, or below, and this is outlined in Section 17.15.3 of this report. The new densifier circuit (installed in 2019), where the densifier overflow is used to assist in the control of the circulating medium density, appears to be working well and should be beneficial for reducing the FeSi consumption.

There is a plan to replace the Primary and Secondary Magnetic Separators with a single unit, which will make operations easier.

In the QP’s opinion, the DMS operations appeared to be acceptable overall.

One underrated aspect of diamond recovery efficiency is housekeeping as spillage will contain diamonds. Besides the safety risk that it poses, the spillage can also compromise the quality of work conducted by both plant operations and maintenance personnel as it can limit access to certain areas. This will limit the ability of the plant to recover diamonds efficiently. The overall standard of housekeeping in No. 1 Plant has not improved between the QP’s two visits, and it was considered to be lower than expected and should be improved.

17.3.2 No. 2 Plant

The operations at No. 2 Plant were also considered by the QP to be satisfactory.

The diamond liberation processes of Primary Crushing, Scrubbing, Screening, Secondary Crushing and Re-crush Crushing were operating well. The Secondary and Re-crush Cone Crushers were operating with level controls and appeared optimal for the design.

Recent work has been completed on the optimisation of the Re-crush Crusher, which in the QP's opinion will certainly improve the overall plant utilisation.

Products from both the Secondary Crushing and Re-crush Crushing processes do not undergo any scrubbing prior to screening. Constant monitoring is therefore necessary to ensure that the carryover of slime and grit to the DMS feed stream is minimised. There is always risk of caking in the crusher product, and the screening process might not be aggressive enough for adequate dis-agglomeration; however, the material is low in clay content and the risk associated with caking is considered to be low.

The DMS operational set-points and cyclone parameters were within the required specifications. On inspection during the 2019 visit, the Magnetic Separator levels were low, and the magnet settings appeared to be incorrect, both of which will lead to higher than necessary FeSi losses. This does not cause any immediate reduction in diamond recovery efficiency but does increase operating costs. It was considered that one of the reasons for this was that access to the Primary Magnetic Separators was not easy. The recent replacement of the primary and secondary units in both the Coarse and the Fines circuits with a single unit has alleviated the access problem and will allow for easier and better operations and maintenance.

The Ultrasonic Level Controls on the Mixing Boxes appeared to be working well.

The DMS cyclones could not be inspected during the site visit as the plant was operational at the time, however the maintenance records indicated that they are inspected regularly and replaced when required. The circulating medium density control was good.

Tracer tests are conducted regularly, and the results are reported to management.

150D FeSi is used in both DMS circuits, which the QP considers to be correct. The FeSi consumption is more or less on budget, at ~170 g/t.

The Water Recovery System consists of a Thickener and Flocculant Plant, which were generally operating within their equipment parameters. However, the Thickener Feed Launder was worn-out in a number of places which, if not repaired or replaced soon, will lead to poor thickener overflow quality, which can in turn cause FeSi rheology problems and diamond losses in the DMS unit processes. It has been reported that the Launder has been replaced as part of planned activities, post the QP's visit. In addition, the Automatic Flocculant Controller was not operational; whilst this was not having a major impact on the quality of the thickener overflow water quality at the time of the visit, it could lead to excessive flocculant consumption.

The overall standard of housekeeping in No. 2 Plant was also considered to be lower than expected and should be improved.

17.3.3 Recovery Plant

It was difficult to assess the operations in the Recovery Plant during the site visit due to understandable security constraints; however, there were no reasons to consider that the overall process efficiencies were not up to the standards required and possible in the plant, given the inherent design and equipment installed.

As noted above, the Coarse Flowsort machines have been replaced with Steinert XRT units which, when operating correctly, will be more efficient in the recovery of Type II diamonds. It is understood that there have been operational and availability issues with these machines, which have been addressed with the Original Equipment Manufacturer (OEM). The total Recovery Plant tailings are retreated, which gives some degree of comfort.

The main process parameter for an XRT machine is the algorithm used for the discrimination between diamonds and waste material. For optimal operation, this requires a large amount of testwork on all the various feed materials. This may still require some attention to attain the maximum efficiencies of the machines. Other parameters such as belt speed, trajectories, ejector timings, splitter positions, etc., all have a major impact on diamond recovery efficiencies, and should be continually tested and the optimum settings determined. The regular inspections by the respective OEMs address these issues and will assist in maintaining an acceptable level of performance.

17.4 Plant Production

17.4.1 Plant Throughput Analysis

The actual production tonnages for each plant are compared against two measures: the Target is the internal goal or forecast, whilst the Budget is the official reporting standard to the stakeholders.

A summary of the production performance for No. 1 Plant and No. 2 Plant for the period 2018 to 2023 is provided in Table 17-1 and Table 17-2 respectively.

Table 17-1: No. 1 Plant production summary for the period 2018 to 2023

Production Year	Budget (Mtpa)	Actual (Mtpa)	Variance to Budget (%)	Target (Mtpa)	Variance to Target (%)
2018	2.7	2.6	-2	2.7	-4
2019	2.7	2.8	2	2.5	-3
2020	2.9	2.3	-21	2.5	-10
2021	2.8	2.5	-11	2.8	-11
2022	2.6	2.4	-7	2.7	-10
2023	2.1	2	-6	2.1	-6

Table 17-2: No. 2 Plant production summary for the period 2018 to 2023

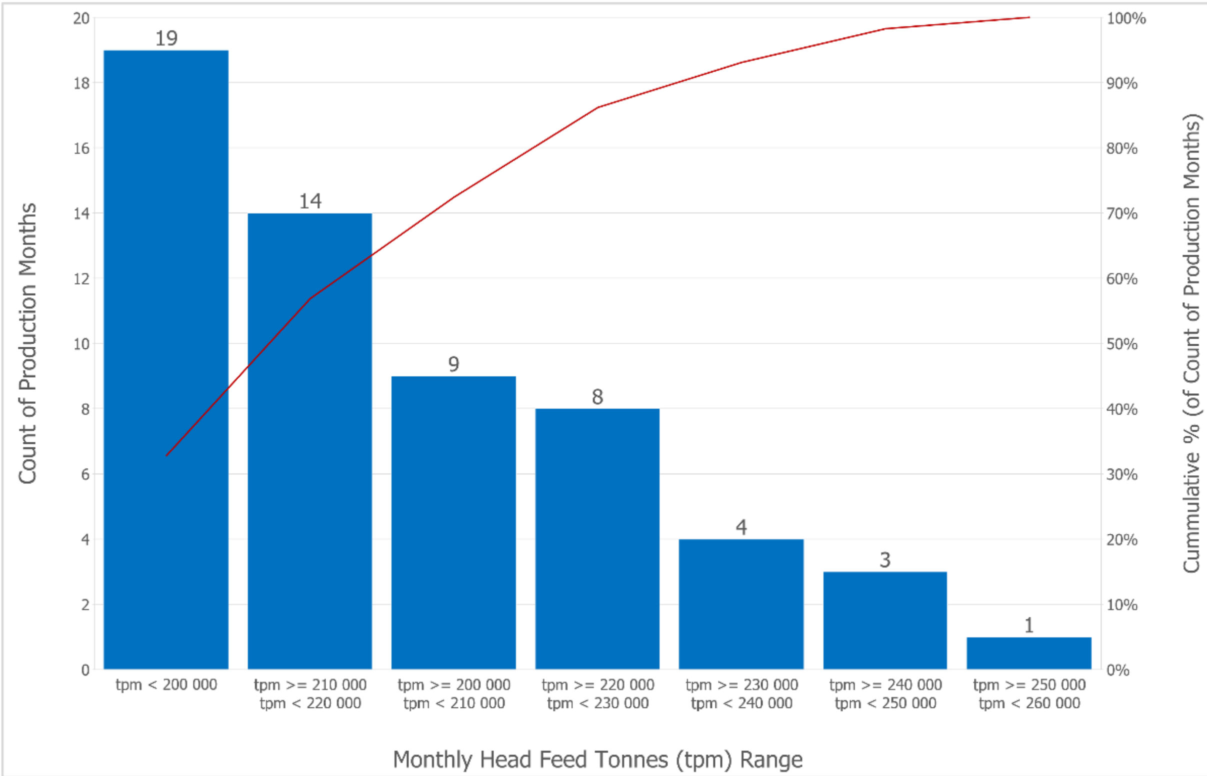
Production Year	Budget (Mtpa)	Actual (Mtpa)	Variance to Budget (%)	Target (Mtpa)	Variance to Target (%)
2018	3	2.8	-7	2.9	-3
2019	3.1	2.8	-9	2.5	-6
2020	3	2.3	-25	2.5	-8
2021	2.9	2.6	-10	3	-14
2022	2.9	2.6	-8	3	-11
2023	2.3	2.1	-9	2.3	-9

The performance against Budget in April 2020 was impacted by the COVID-19 Pandemic. The data show that the Budget was exceeded only once, in 2019 at No. 1 Plant. It is concerning that both plants are not regularly meeting their production targets.

Between 2019 and 2023, the records show that the Budget for No. 1 Plant was only achieved in 11 production months out of the 58 evaluated. For No. 2 Plant, a similar analysis shows that the Budget was met in 19 production months out of the 58 evaluated.

The monthly head feed tonnages processed through each plant for the period 2019 to 2023 have been grouped into several categories at intervals of 10,000 tonnes. These were plotted on Pareto Charts against the Count of Production Months that fall into each category.

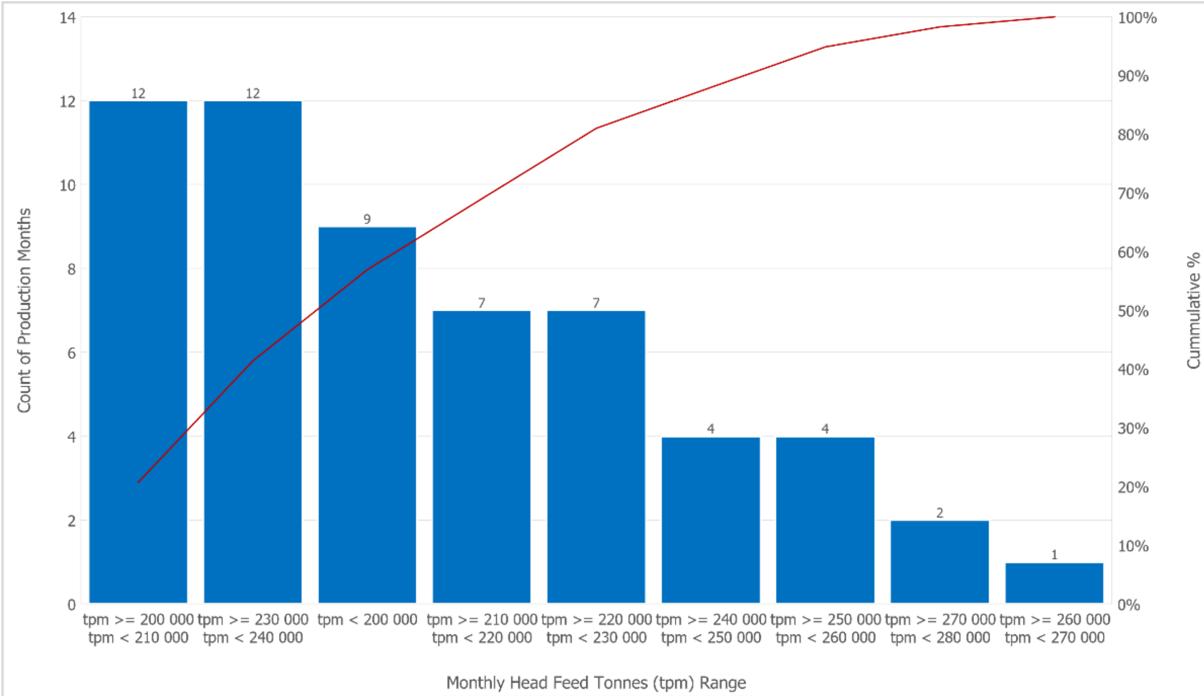
For No. 1 Plant, Figure 17-1 shows that in 19 of the 58 assessed months, the monthly treated tonnage was below 200,000 tonnes. In general, for 50 of the production months (equivalent to 86%), the monthly production was below 230,000 tonnes and the lowest was 163,180 tonnes. The average monthly processing rate is approximately 202,200 tonnes. This gives an indication of the capacity of the plant for the prevailing operating conditions such as the flowsheet design, operational practices, production configuration and the ore types that were processed.



Source: SRK (2024)

Figure 17-1: Monthly tonnes treated for No. 1 Plant for the period 2019 to 2023

The Pareto Chart for No. 2 Plant in Figure 17-2 suggests better performance compared to No. 1 Plant. The monthly production was below 200,000 tonnes in only 9 months out of the 58 assessed. This is equivalent to 16%. In 26 of the 58 months, the monthly production was below 230,000 tonnes. In 47 out of the 58 production months assessed, the monthly production was below 240,000 tonnes. This is equivalent to 81%. Within this category, the average monthly production was approximately 206,000 tonnes.

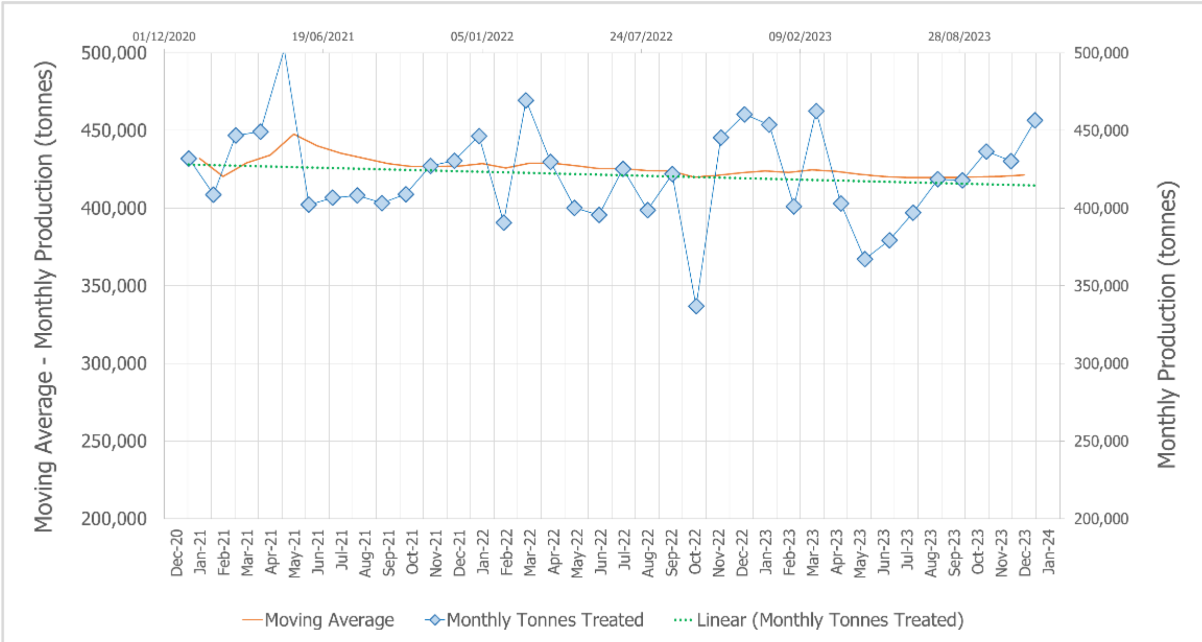


Source: SRK (2024)

Figure 17-2: Monthly tonnes treated for No. 2 Plant for the period 2019 to 2023

In some of the historical data received from Letšeng, the two treatment plants have been combined and are presented as a single facility. The graph in Figure 17.3 has been plotted to show the combined monthly head feed tonnages recorded for the period January 2021 to December 2023. Except for the three data points below 400,000 tonnes that can be considered as outliers, the rest of the data almost fits perfectly to a horizontal linear trendline at about 430,000 tonnes. This also correlates very well with the moving average that has been included in the graph.

It is also worth noting from the graph in Figure 17-3, that the tonnage of plant head feed processed monthly from May 2023 has been on a steady climb, for eight consecutive months.



Source: SRK (2024)

Figure 17-3: Combined monthly tonnes treated for No. 1 Plant and No. 2 Plant for the period January 2021 to December 2023

The horizontal linear trendline could be useful for estimating the indicative combined capacity for the treatment plants at the prevailing operating conditions at Letšeng. Considering the various factors at play in production systems, a more robust approach could involve the use of dynamic simulation that takes into account the numerous input parameters, plant operating parameters, site configuration and operating conditions. The model should be designed in such a way that it mimics the key functions of the plant(s) to the correct level of detail.

The input parameters must be carefully chosen and manipulated appropriately, considering that they all have different impact levels on the productivity of the plant(s). For instance, factors such as ore type, sequencing of ore types and blending of various ore types in the plant feed to minimise unwanted plant responses such as high DMS yield, high crusher recirculating loads, excessive loading of the slimes handling system and high X-Ray machine yields could have a profound impact on throughput. Moreover, the application of such dynamic simulations could be useful for defining bottlenecks, and the investigation of possible remedies.

The variation in monthly production could also be reduced through the use of geo-metallurgical modelling. This can be carefully designed to ensure that ore-mixes in the plant feed are optimised to allow for the management of key operational parameters such as ore crushability, material flow dynamics, DMS yields and X-Ray machine yields to promote a steady operation.

17.4.2 Plant Downtime Analysis

The downtime incurred at each plant is generally analysed using the Letšeng Diamond Mine (LDM) Time Model. The summaries drawn from No. 1 Plant and No. 2 Plant data for the period between 2019 and 2023 are shown in Table 17-4 and Table 17-5 respectively. For reasons of clarity, the definitions provided in Table 17-3 apply.

Table 17-3: LDM time model Breakdown for No. 1 Plant production for the period 2019 to 2023

Description	Description / Formula
Total Calendar hours per year	365 days x 24 hrs
Non Controllable Time	Outside the operation span of control
	Public Holidays
	Uncontrollable Events
Not Scheduled to Produce	Continuous operation with days lost due to public holidays (e.g. Xmas)
Uncontrollable Events	External factors beyond the control of the operation (e.g. Eskom, Voting day)
Controllable Time	Equipment available time under the control of the operation
Equipment Downtime	Equipment down as a result of breakdown, scheduled maintenance and unplanned operational stops
Unscheduled Maintenance	Downtime as result of repair work not included in scheduled maintenance plans
Scheduled Maintenance	Work that forms part of the planned maintenance program scheduled in ONKEY PM + Annual Shutdowns
Operational Downtime	Attributable to process that renders the equipment inoperable
Uptime	Time available for production activities
Lost Time	Equipment was available for production but not utilised
Consequential	The equipment is available to be used but is standing as a consequence of other equipment / systems affecting plant feed rate. (e.g. no ore, big rocks, metal from pit)
Standby	Time allocated to spare equipment available for production
Delays	Delays caused by events outside of the plant operator's control (e.g. weather, blasting)
Direct Operating Time	Time during which the equipment is operating
Sampling work	Equipment is utilised for sampling
Primary Production Time	Equipment is utilised for primary production
Time Loading	T100/T000
Equipment Availability	T200/T100
Use of Equipment Availability	T300/T200
Effective Production	P200/T300
Overall Utilisation	P200/T000
Performance Rate	Input
Overall Equipment Effectiveness	OU x RT
Engineering Availability	(T100 – D100 – D200)/(T100)

Source: Letšeng Diamonds, 2024

Table 17-4: LDM time model breakdown for No. 1 Plant production for the period 2019 to 2023

PRODUCTION YEAR	2019	2020	2021	2022	2023
CALENDAR TIME	**8760**	**8784**	**8760**	**8760**	**8760**
NON CONTROLLABLE TIME	**77.52**	**791.13**	**144.45**	**144.53**	**47.7**
Non-Scheduled Time (Christmas)	9.62	4.97	0	0	0.28
Uncontrollable Time (No Power)	67.9	786.17	144.45	144.53	47.42
CONTROLLABLE TIME	**8682.48**	**7992.87**	**8615.55**	**8615.47**	**8712.3**
EQUIPMENT DOWNTIME	**1052.07**	**1366.6**	**1362.87**	**1624.87**	**1152.9**
Unscheduled Maintenance	329.4	501.67	713.45	1056.42	438.27
Scheduled Maintenance	649.8	639.6	549.37	338.32	488.78
Operational Stops (Process)	72.87	225.33	100.05	230.13	225.85
UPTIME	**7630.42**	**6626.27**	**7252.68**	**6990.6**	**7559.4**
LOST TIME	**290.83**	**353.67**	**529.33**	**472.87**	**345.85**
Consequential (Mining, Recovery)	144.22	238.45	447.62	415.82	255.52
Standby (Stockpile Empty)	106.87	55.07	4.77	9.33	38.78
Delays (Blasts and Weather)	39.75	60.15	76.95	47.72	51.55
OPERATING TIME	**7339.58**	**6272.6**	**6723.35**	**6517.73**	**7213.55**
Sampling	10.8	16.85	11.65	22.47	11.57
Primary Production Time	**7328.78**	**6255.75**	**6711.7**	**6495.27**	**7201.98**
Rate Loss	595.85	392.79	405.5	416.47	**737.53**
Running time	**6732.93**	**5862.96**	**6306.2**	**6078.8**	**6464.45**

Table 17-5: LDM time model breakdown for No. 2 Plant production for the period 2019 to 2023

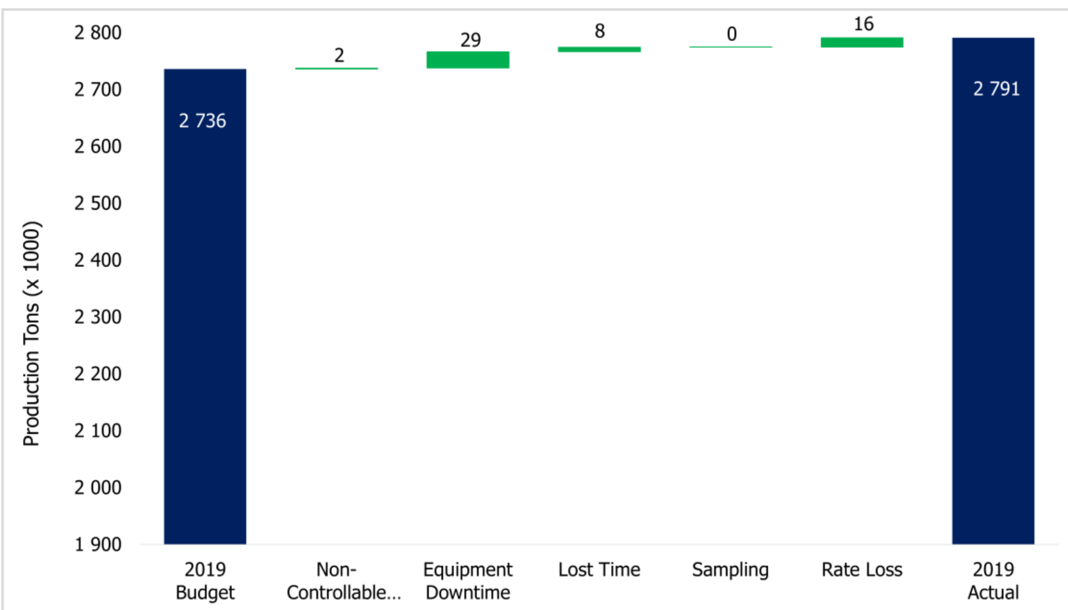
PRODUCTION YEAR	2019	2020	2021	2022	2023
CALENDAR TIME	**8760**	**8784**	**8760**	**8760**	**8760**
NON CONTROLLABLE TIME	**106.7**	**1447.07**	**116.15**	**136.58**	**34.05**
Non-Scheduled Time (Christmas)	34.38	0.33	0	1.85	0.53
Uncontrollable Time (No Power)	72.32	1446.73	116.15	134.73	33.52
CONTROLLABLE TIME	**8653.3**	**7336.93**	**8643.85**	**8623.42**	**8725.95**
EQUIPMENT DOWNTIME	**1169.08**	**1091.22**	**1634.83**	**1795.68**	**1529.9**
Unscheduled Maintenance	316.32	370.48	804.5	952.63	596.25
Scheduled Maintenance	721.12	621.83	579.83	396.2	644.47
Operational Stops (Process)	131.65	98.9	250.5	446.85	289.18
UPTIME	**7484.22**	**6245.72**	**7009.02**	**6827.73**	**7196.05**
LOST TIME	**265.9**	**283.67**	**448.07**	**294.63**	**202.15**
Consequential (Mining, Recovery)	99.27	73.27	72.93	96.42	48.52
Standby (Stockpile Empty)	105.52	141.88	308.08	138.98	96.87
Delays (Blasts & Weather)	61.12	68.52	67.05	59.23	56.77
OPERATING TIME	**7218.32**	**5962.05**	**6560.95**	**6533.1**	**6993.9**
Sampling	24.93	24.72	20.83	23.65	13.88
Primary Production Time	**7193.38**	**5937.33**	**6540.12**	**6509.45**	**6980.02**
Rate Loss	841.53	496.54	0	656.13	769.55
Running time	6351.86	5440.8	6540.12	5853.32	6210.47

The data show that apart from the Non-Controllable Downtime from the COVID-19 Pandemic in 2020, the Equipment Downtime Category had the largest impact on production for both plants over the five-year period. It accounts for the average of 65% of the downtime at No. 1 Plant, and 66% of the downtime at No. 2 Plant.

The breakdown of production losses due to the various downtime categories from the LDM Time Model is also depicted in Figure 17-4 to Figure 17-8 for No. 1 Plant, and Figure 17-9 to Figure 17-13 for No. 2 Plant. These waterfall graphs show that apart from the significant impact of the Equipment Downtime Category, the contribution to the overall production losses from the other categories cannot be overlooked. In 2020 for instance, while about 280,000 tonnes of the production planned for the No. 1 Plant were lost due to equipment downtime, a further 154,000 tonnes could not be realised due to downtime in the “Lost Time” and “Rate” categories of the LDM Time Model.

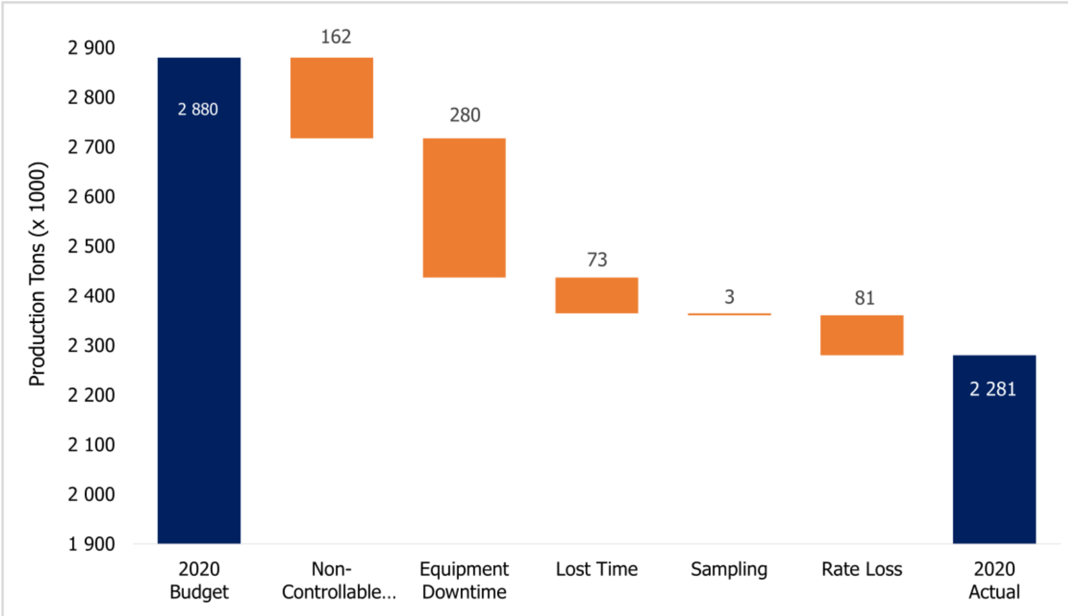
It is therefore recommended that any efforts to improve the performance of the metallurgical plants should be holistic, focusing on resolving the root causes for all downtime as prioritised from a predetermined hierarchy. This is another area where dynamic simulation could be very useful for analysing historical data and optimising the “Rate” so that it is more suited to the facility and operating conditions. Even future production plans and planned improvements can be sanity-checked against historical performance.

Over the period assessed, the production from No. 1 Plant seems to be affected more by downtime in the “Lost Time” and “Rate” categories compared to No. 2 Plant.



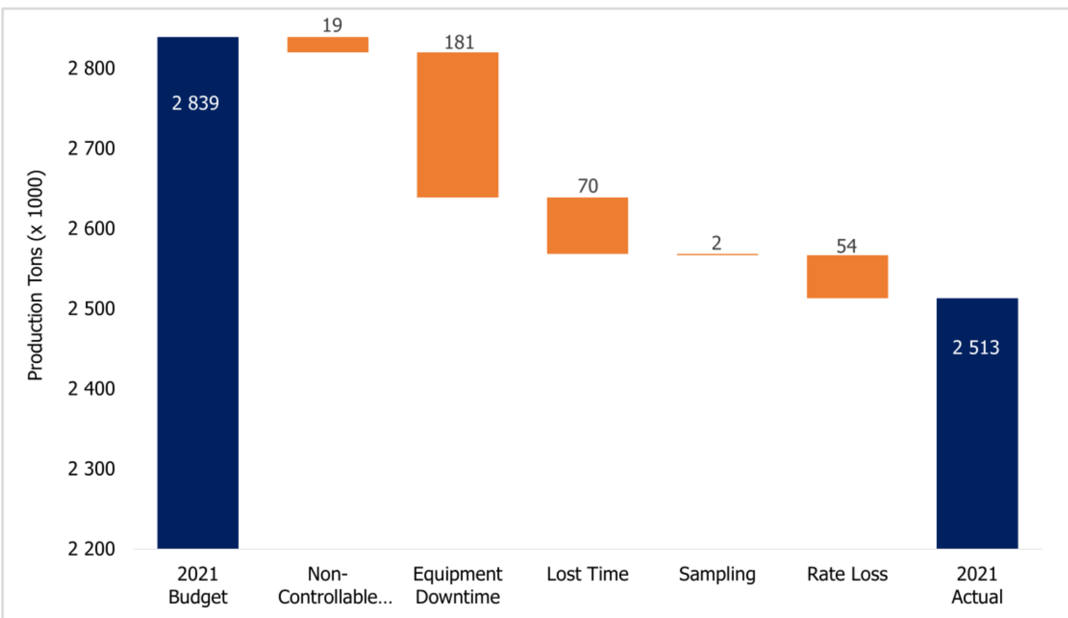
Source: SRK (2024)

Figure 17-4: LDM time model categories for No. 1 Plant for 2019 production



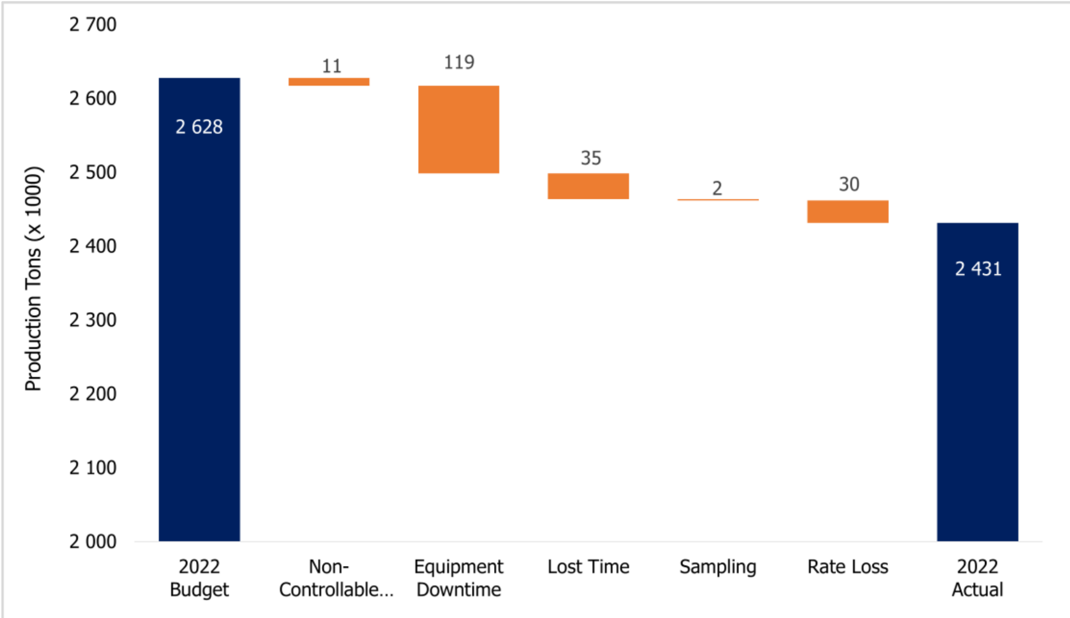
Source: SRK (2024)

Figure 17-5: LDM time model categories for No. 1 Plant for 2020 production



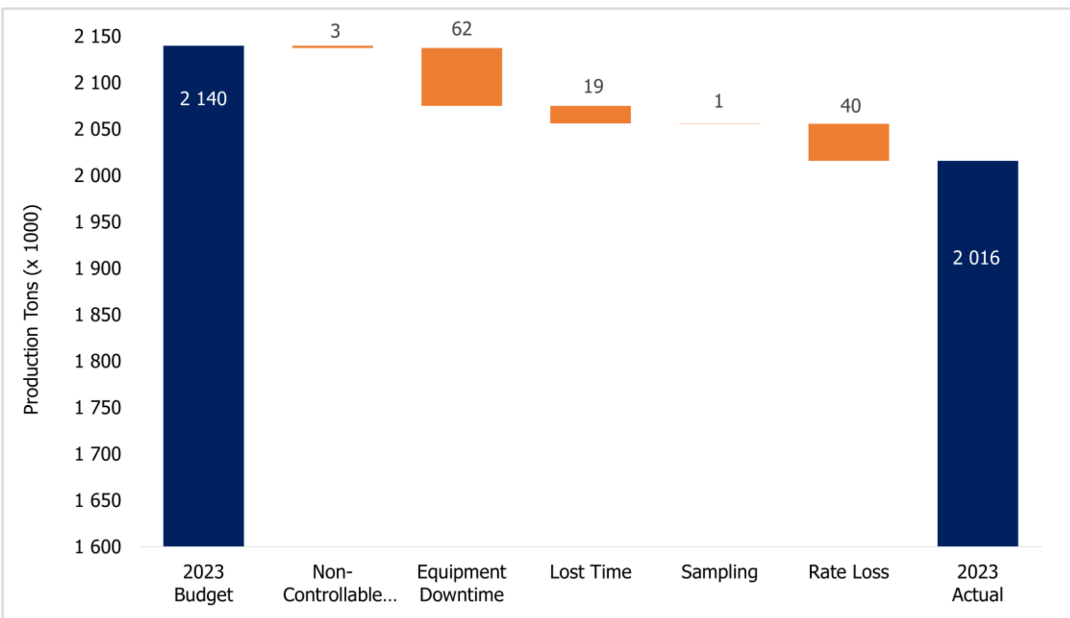
Source: SRK (2024)

Figure 17-6: LDM time model categories for 2021 for No. 1 Plant production



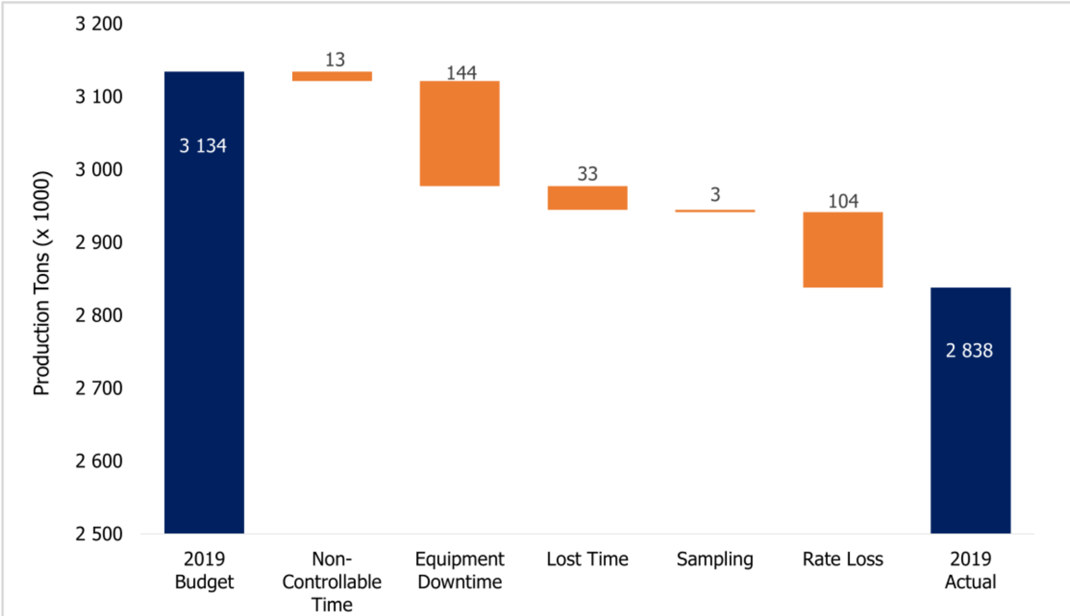
Source: SRK (2024)

Figure 17-7: LDM time model categories for 2022 for No. 1 Plant production



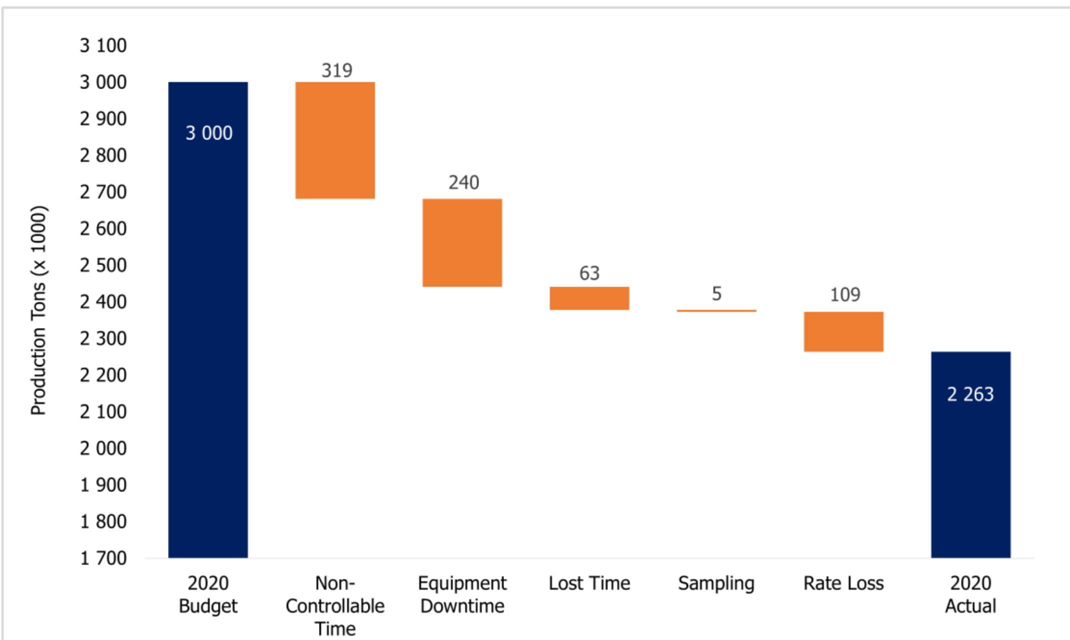
Source: SRK (2024)

Figure 17-8: LDM time model categories for 2023 for No. 1 Plant production



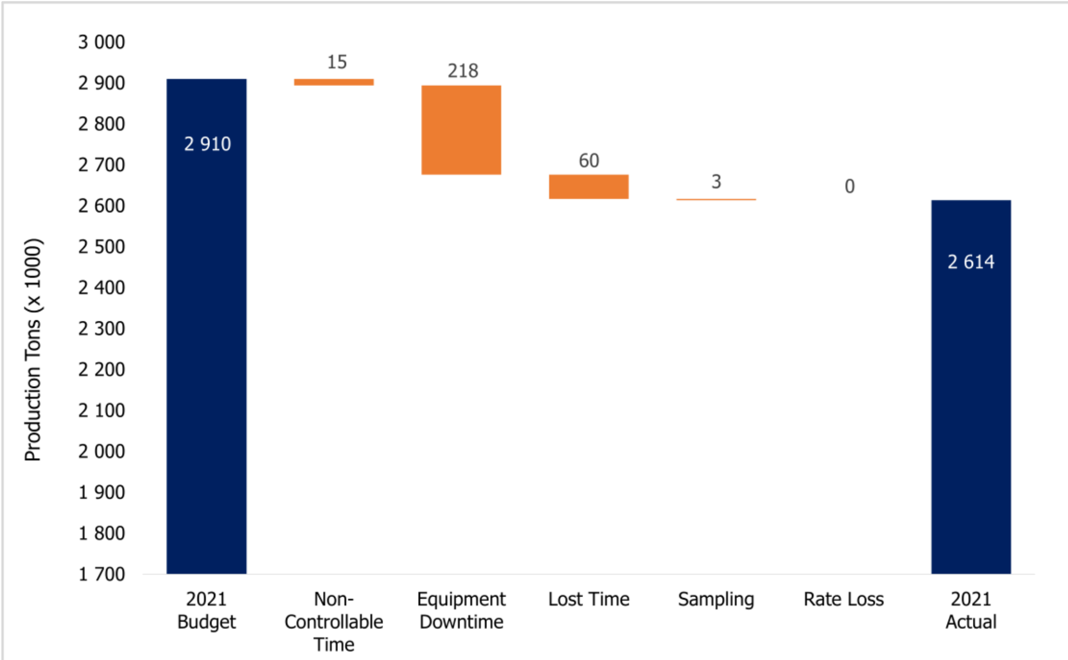
Source: SRK (2024)

Figure 17-9: LDM time model categories for 2019 for No. 2 Plant production



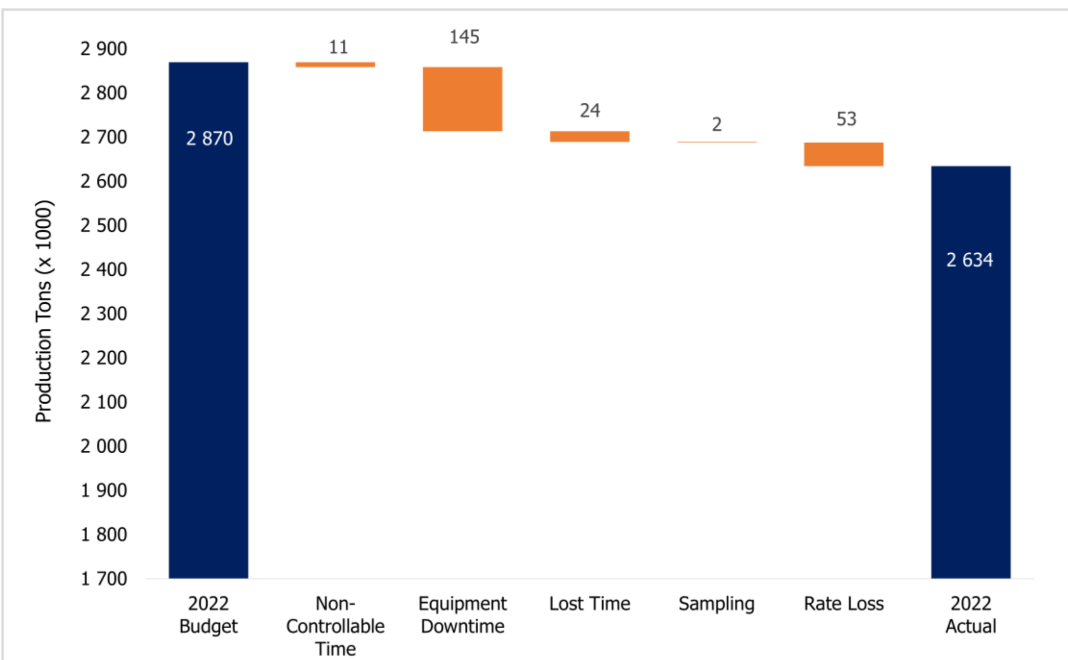
Source: SRK (2024)

Figure 17-10: LDM time model categories for 2020 for No. 2 Plant production



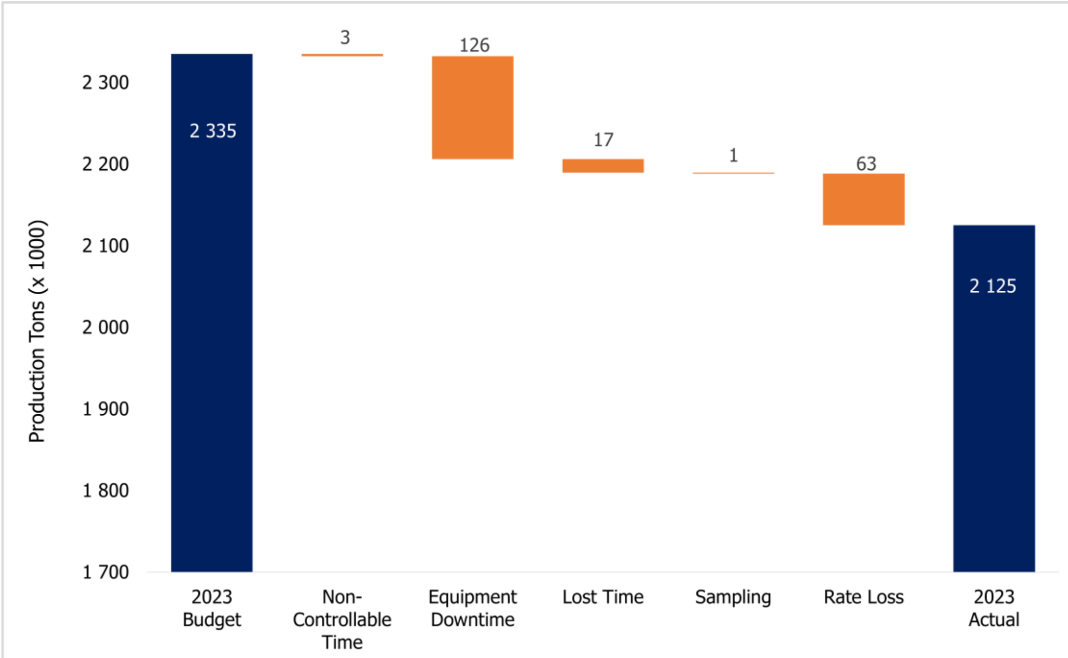
Source: SRK (2024)

Figure 17-11: LDM time model categories for 2021 for No. 2 Plant production



Source: SRK (2024)

Figure 17-12: LDM time model categories for 2022 for No. 2 Plant production

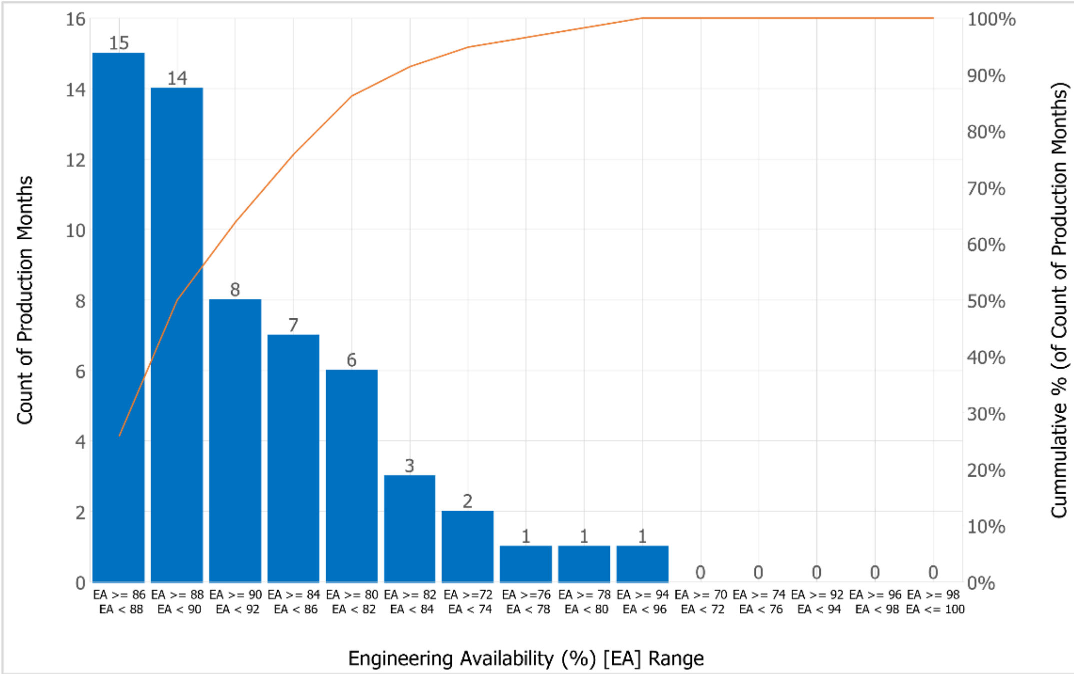


Source: SRK (2024)

Figure 17-13: LDM time model categories for 2023 for No. 2 Plant production

17.5 Plant Availability and Utilisation

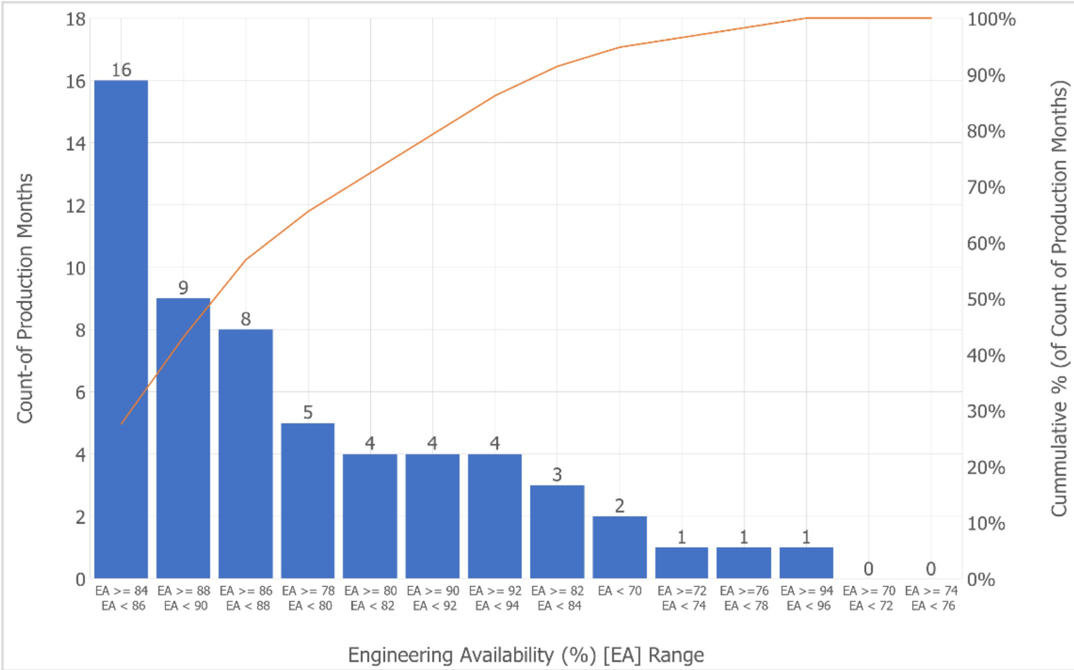
The Engineering Availabilities for No. 1 Plant and No. 2 Plant for the period 2019 to 2023 have been grouped into categories in intervals of 2%. These have been plotted against the Count of Production Months that fall within each category and the Pareto Charts are shown in Figure 17-14 for No. 1 Plant and Figure 17-15 for No. 2 Plant.



Source: SRK (2024)

Figure 17-14: Engineering availability for No. 1 Plant for the period 2019 to 2023

The Pareto Chart for No. 1 Plant in Figure 17-14 indicates that an Engineering Availability of lower than 74% was recorded in only 2 out of the 58 months that have been analysed. In general, an Engineering Availability of between 78% and 90% was recorded in 78% of the production months under consideration. This equates to 46 out of 58 months. Moreover, in 29 of these 46 production months, the Engineering Availability was in the range of 86% to 90%.

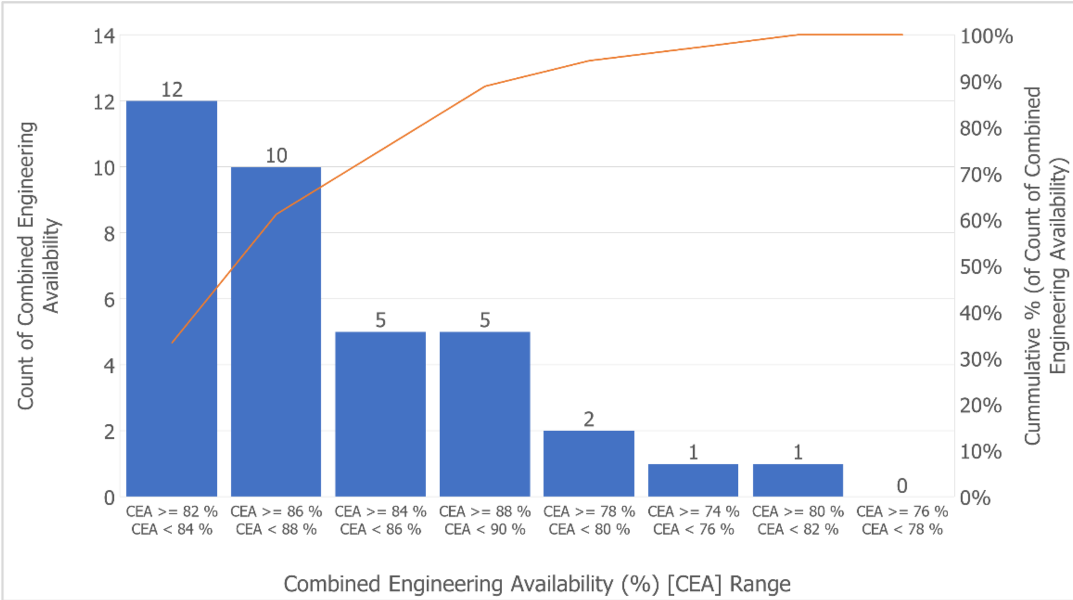


Source: SRK (2024)

Figure 17-15: Engineering availability for No. 2 Plant for the period 2019 to 2023

The Pareto Chart for No. 2 Plant in Figure 17-15 indicates that the lowest Engineering Availability in the range of 72% to 74% was recorded in only one production month in the period between 2019 and 2023. In general, an Engineering Availability of between 82% and 94% was recorded in 44 out of the 60 months that were evaluated.

The Pareto Chart for the Combined Engineering Availability for No. 1 Plant and No. 2 Plant for the period January 2021 to December 2023 is shown in Figure 17-16. It is worth noting that the bulk of the data is within the range of 82% to 90%.

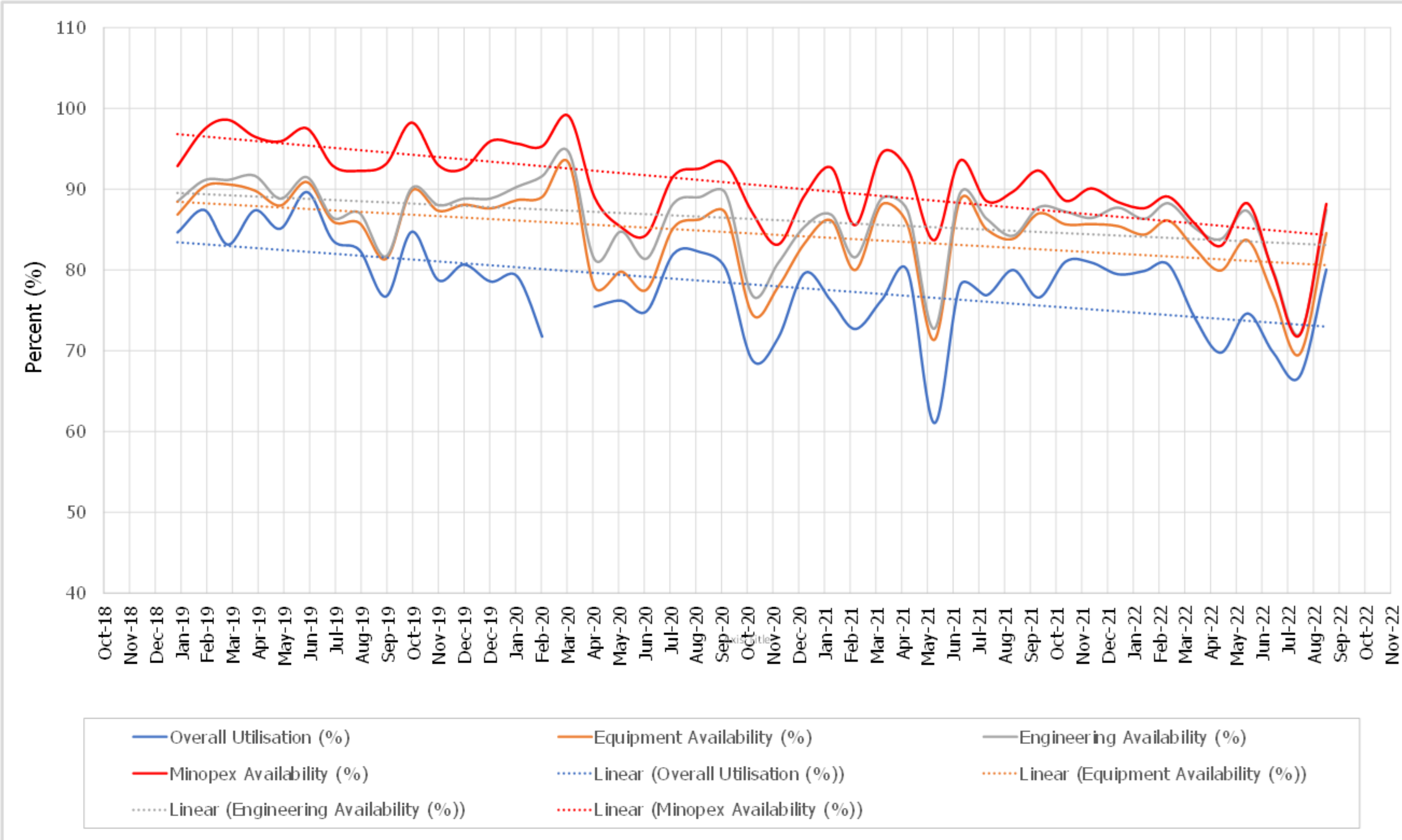


Source: SRK (2024)

Figure 17-16: Combined engineering availability (CEA) for No. 1 Plant and No. 2 Plant for the period 2019 to 2023

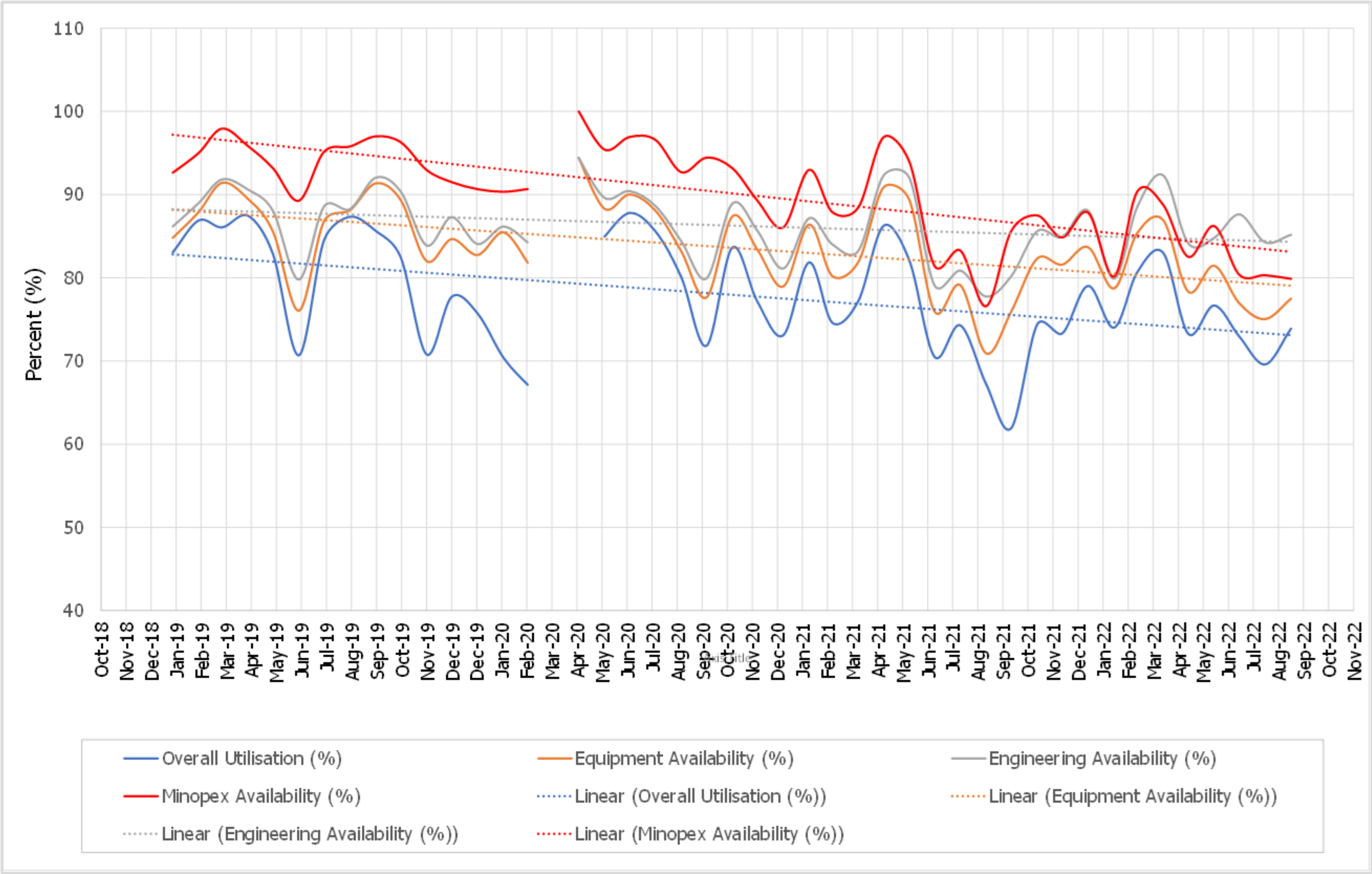
The graphs in Figure 17-17 and Figure 17-18 have been plotted to show the asset utilisation measures (Availability and Utilisation) for both No. 1 Plant and No. 2 Plant for the period between 2019 and 2023. The discontinuity in both graphs was caused by the production interruptions from the COVID-19 Pandemic.

Trendlines have been included for each of the measures plotted to provide an indication of trend over the period. The decline in the trends from 2019 to 2023 in both Figure 17-17 and Figure 17-18 is quite evident. This needs to be investigated and addressed.



Source: SRK (2024)

Figure 17-17: Monthly average asset utilisation No. 1 Plant for the period 2019 to 2023



Source: SRK (2024)

Figure 17-18: Monthly average asset utilisation No. 2 Plant for the period 2019 to 2023

It has been shown from the historical production data in Table 17-1 and Table 17-2 that both No. 1 Plant and No. 2 Plant generally do not meet the production targets. This can be explained in the light of the progressive decline in the asset utilisation measures over the years, as presented in Figure 17-7 and Figure 17-8 above. The trends in these two graphs can also be analysed alongside the budget averages for the same asset utilisation measures that are shown in Table 17-6 and Table 17-7 for Plant No. 1 and Plant No. 2 respectively.

Table 17-6: Average budget monthly asset utilisation for Plant No. 1 for the period 2019 to 2022

Description	2019	2020	2021	2022	Average
Overall Utilisation (%)	82.3	82.2	83.6	83.4	82.9
Equipment Availability (%)	85.6	86.8	87.9	87.7	87.0
Engineering Availability (%)	88.5	88.5	88.7	88.5	88.6
Scheduled vs Unscheduled Maintenance (%)	49.6	66.4	66.8	67.5	62.6
Effective Production (%)	99.8	99.6	99.9	99.9	99.8
Use of Equipment Availability (%)	97.5	96.5	96.4	96.4	96.7
Controllable Time (%)	98.7	98.6	98.8	98.8	98.7
Effective Utilisation (%)	85.8	87.0	88.1	87.8	87.2

Table 17-7: Average budget monthly asset utilisation for Plant No. 2 for the period 2019 to 2022

Description	2019	2020	2021	2022	Average
Overall Utilisation (%)	82.1	81.6	82.4	82.1	82.0
Equipment Availability (%)	84.6	87.0	86.9	86.6	86.3
Engineering Availability (%)	88.1	88.3	88.6	88.4	88.3
Scheduled vs Unscheduled Maintenance (%)	53.5	66.8	66.1	66.9	63.3
Effective Production (%)	99.7	98.9	99.6	99.6	99.5
Use of Equipment Availability (%)	98.5	96.2	96.5	96.5	96.9
Controllable Time (%)	98.7	98.6	98.6	98.6	98.6
Effective Utilisation (%)	84.8	87.2	87.1	86.8	86.5

For the 4-year period shown in Table 17-5, the budgets for the Engineering Availability for No. 1 Plant average at approximately 88.6%. The graph in Figure 17-9 shows this average of 2019/22 Engineering Availability Budget plotted alongside Engineering Availability as well as the proportion of Scheduled vs Unscheduled Maintenance for Plant No. 1.

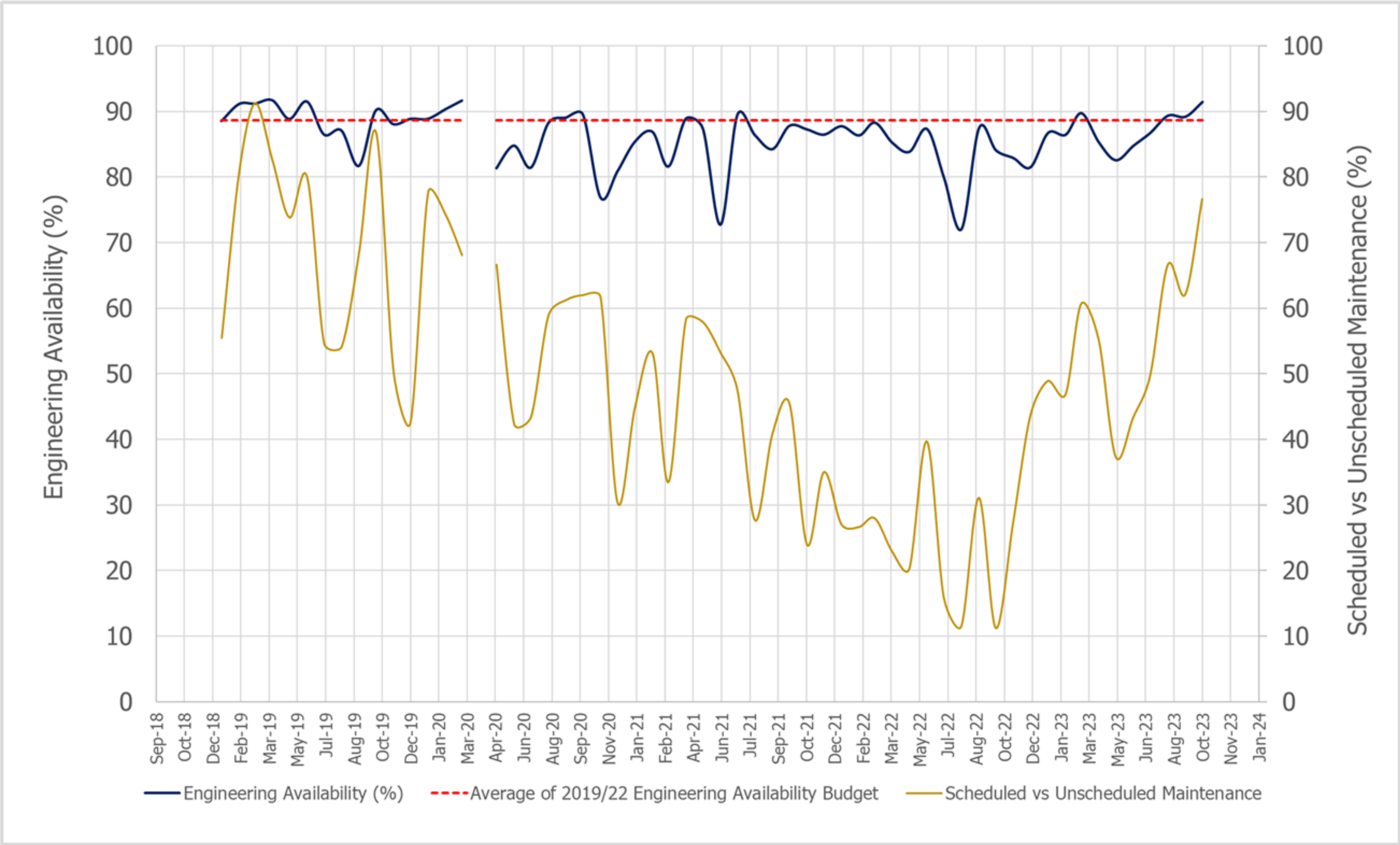
It is quite evident that there are extended periods where the recorded Engineering Availability is not compliant when compared to the average of 2019/22 Engineering Availability Budget. Out of the 58 months analysed, Engineering Availability was compliant in only 19, which is equivalent to 33%.

The proportion of Scheduled versus Unscheduled Maintenance is a key driver for Engineering Availability. In August 2022 for instance, only 12% of the maintenance work conducted was scheduled. This coincided with the lowest Engineering Availability of 72%.

When maintenance of plant equipment is managed within the schedule outlined in the production plan, the work is properly planned and resourced so that execution is conducted safely and effectively. This maximises the use of the planned downtime, and it improves Engineering Availability. It appears that this is a possible area of improvement for Letšeng. Depending on the current approach on site, the implementation of robust maintenance tactics that are supported by the availability of maintenance spares, appropriately skilled manpower and the online continuous condition monitoring of critical equipment are among some of the industry best practices that could be considered.

In Figure 17-19, it must be noted that from about May 2023, there is an improvement in both Engineering Availability and the proportion of Scheduled vs Unscheduled Maintenance. This is sustained up to the end of the time period covered by the graph and is commendable.

Regardless of the average showing in Figure 17-17 and Figure 17-18, the Engineering Availability for both plants can be regarded to meet the budget targets on a reasonably regular basis, with the occasional major issue that significantly impacts on production levels. The same can be concluded for the other asset utilisation measures, namely the Equipment Availability, the Minopex Availability, and the Effective Utilisation.



Source: SRK (2024)

Figure 17-19: Engineering Availability and ratio of scheduled vs unscheduled work for Plant No. 1 for the period 2019 to 2023

The fact that these asset utilisation figures are reasonable, yet the metallurgical plants have historically not met their targets/budgets could suggest that the data being gathered may not be what is really required to make informed decisions regarding the real issues that require attention. It is recommended that the methodologies used to assess the asset performance be revisited so that good management information can be gained with which to make decisions.

In many plant operations, measures such as Plant Downtime are usually evaluated based on the overall impact to the tonnage of plant head feed that is processed within the target timeframe. This means that at any given instance, if there are several breakdown events that have occurred concurrently, the downtime is normally assigned to the event that is viewed to have taken precedence. This has the unintended consequence of minimising the impact of the other downtime causes to a level that they may never come to the fore, thus increasing the possibility that they never receive the necessary attention. Where possible, the analysis of downtime for each unit process is more beneficial because it reveals the high-impact areas that require focus.

Whilst the QP's site visit can only be considered as a "snapshot" of the operations, it appears that the areas of concern relate to sub-standard housekeeping, some operational deficiencies, and planned maintenance that could be improved.

Housekeeping is often not considered as important when reviewing production, but experience has shown that there is a direct link between a plant that is untidy and poor levels of Engineering Availability and Metallurgical Utilisation. Generally, this is due to the mindset of the operational staff whereby small issues are overlooked which then grow into more important failures. Spillage problems are caused by poor maintenance and, in turn, lead to more spillage and then even more breakdowns.

The level of planned maintenance also appeared to require attention. Letšeng has recognised this situation and is currently recruiting a Maintenance Engineer and a Reliability Engineer to oversee the remedial action required.

17.6 Diamond Liberation

Letšeng Mine is unique in terms of its diamond SFD and this makes the issue of diamond liberation of paramount importance in order to optimise revenue generation.

There is a dichotomy that arises when considering diamond liberation in that it is relatively easy to liberate the majority of the economically viable diamonds by crushing finely, however this leads to significant diamond damage. The liberation process must therefore be tailored to match the diamonds in the Reserve, especially if the majority of the revenue is derived from larger stones as at Letšeng. Additionally, different ore types have varying geological, mineralogical, petrographic and diamond content properties and therefore require different liberation strategies.

In practical terms, the optimum Primary, Secondary and Re-crush sizes can be determined by considering the diamond size, and values, which could be liberated in each phase for a given cut-off size. These can be defined as the top cut-off size (tcos) and mid-point cut-off size (mcos). These two, in conjunction with the bottom cut-off size (bcos), which is the size below which it is considered uneconomic to recover diamonds, define the diamond liberation strategy for a plant. The setting of these parameters requires input from many disciplines including Geology, Mineral Resource Management (MRM), Mining, Processing, Finance, and Marketing.

Within a given plant design, which is always the case for an operating mine, there are limits to the changes that can be made to these three parameters based on the material to be treated, the equipment installed in the plant, and the overall plant throughput required.

It is clear from discussions during the site visit that this issue is receiving a great deal of attention on the mine and within Gem Diamonds, and this will be covered in more detail in Sections 17.13 and 17.14 of this report. This section of the report covers the practical implications of the current situation at both plants.

When reviewing diamond liberation in a plant, it is important to consider all the relevant unit processes as a combined entity despite their physical separation. The operating gap settings of the Primary Crushers at No. 1 Plant and No. 2 Plant must allow for proper operations of their related Secondary Crushers which, in turn must provide the correct size of feed material to their respective Re-crush Crushers.

The current cut-off sizes for the two plants are as follows:

- No. 1 Plant tcos 55 mm: mcos 27 mm: bcos 2 mm
- No. 2 Plant tcos 65 mm: mcos 25 mm: bcos 2 mm

In recent months, changes have been made by reducing the Re-crush Crusher closed side settings (CSS). This was driven by attempts to address bottlenecks in the Re-crush Circuits and improve plant throughputs. This not only removed the bottleneck, but it also had the expected impact of reducing the circulating loads, thus improving the crushing efficiency.

Whilst these changes were made mainly for throughput reasons, they will most probably have an impact on the overall recovered diamond size distribution, which is still being assessed.

17.7 Recovery Plant Tailings Retreatment

As noted above, the Recovery Plant tailings are retreated in the separate Tailings Retreatment Plant using two TOMRA XRT machines. One machine treats the -50mm+20mm, -20mm+10mm, and the -10 mm+5mm size fractions in a batch process. The other treats the -5mm+2mm fraction.

Whilst this has proved to be a profitable operation, it is always advisable to try to recover diamonds in the primary processes rather than rely on a Tailings Retreatment Plant which adds operational complications, as well as additional capital expenditure and operating costs to the mine. The installation of the Steinert XRT machines in the Recovery Plant is therefore considered to be the correct route to take.

In the QP's opinion, it is preferable for the tailings retreatment TOMRA machine(s) to be installed in the Recovery Plant as primary units as replacements for the Flowsort XRF machines. This would achieve a number of improvements namely:

- Lower overall X-ray machine concentrate yields and therefore a smaller feedrate to the Sorthouse
- Improved security
- Lower manpower requirements
- Lower operating costs
- Removes the need for online Recovery Plant tailings retreatment
- Improves overall net revenue generation

17.8 Tailings and Slimes Disposal

The tailings from No. 1 Plant and No. 2 Plant are jointly disposed of in the Patising RSF with the coarse tailings forming the impoundment wall for the slimes dam (basin) wherein the slimes product (fines tailings) from both plants is deposited.

The design of these two integrated sections was based on a LOM solution, and there is currently adequate capacity for both products.

The Old RSF close to the plants is effectively full and has been taken out of operation. The Old RSF is only used as the site-wide stormwater management plan.

17.9 Diamond Control

Diamond control has recently been brought to the forefront of MRM and plant performance analysis. Emphasis is now being put on the use of diamond SFD curves to assess the plants' efficiencies in areas such as diamond recovery, specific unit process efficiencies, diamond liberation, diamond damage and diamond control. The Grade/Size Plot relating the number of stones per hundred tonnes per unit interval (NSPHTPUI) is the most useful analytical tool for this purpose.

The impact of this work is considered in Sections 17.13 and 17.14 of this report.

17.10 Diamond Damage

This is probably the most important parameter in any review of Letšeng Mine due to its unique diamond SFD. No detailed information was provided regarding the actual levels of diamond damage that are being experienced on the mine, but it is considered that the loss of revenue is high enough to consider significant changes to the current liberation unit processes installed.

Sections 17.13 and 17.14 indicate the level of attention that this issue is receiving both on the mine and at the corporate level.

In terms of this report, it is unlikely that there will be any significant change to the diamond damage levels currently being experienced in the near future. The current studies are likely to come to fruition within the next 4 to 5 years at the earliest.

17.11 Manpower

The Minopex manpower structures generally appear adequate for the operations. The main breakdown is as follows:

- Senior management 2
- Process and metallurgy 81
- Engineering 89
- Support staff 32
- TOTAL 204

As noted in Sections 17.13 and 17.14, the QP considers that there should be more emphasis placed on the maintenance and operations of the plants, which would require more experienced maintenance management resources in order to ensure that the target/budget production levels are met on a more consistent basis.

17.12 Operating Costs

17.12.1 Year-on-Year Comparison

The input project data provided by Letšeng includes the detailed plant operational costs for the period January 2019 to September 2023. The scope covered by the plant operational costs for the whole period appear relatively comprehensive. .

Normally, the business would have approved the budget for the operational costs prior to each year. The budgeting process is driven by the production plan as well as any supporting work such as normal and major maintenance activities, audits, compliance, continuous improvement work and all other types of projects. At this level, a comparison between the actual expenditure and the approved budget, and an account of the expenditure variance, would assist in confirming the current unit cost.

While it is expected that there will be some unforeseen circumstances that will require approved over-expenditure during the course of each production year, this has a negative impact on the effectiveness of the budgeting process. It compromises the value that the operational budget brings to the business.

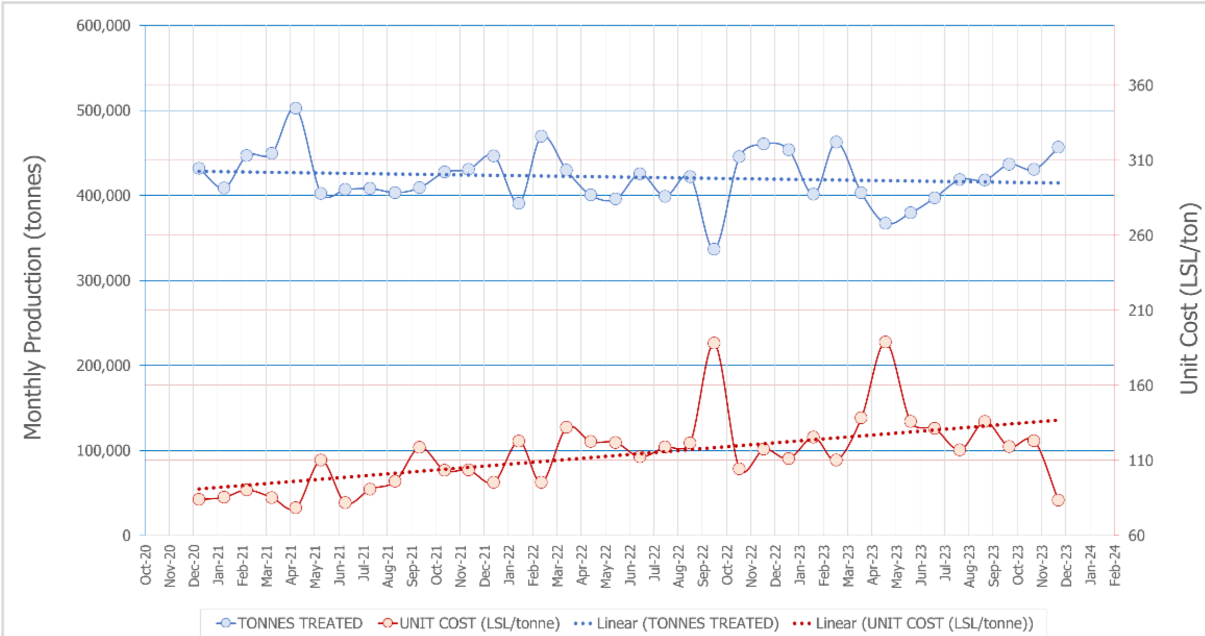
In principle, the variance can be managed by building the operational budget from first principles, where the costs are not merely adopted from the previous year's expenditure but are defined by activities.

17.12.2 Unit Operating Cost

The data provided by Letšeng includes unit costs that are presented "per tonne" and "per carat"; and "including" and "excluding" the cost of diesel and electricity. The reason for this was to remove the impact of uncontrollable load-shedding and to measure the direct operational improvements.

In Figure 17-20, the unit cost per tonne has been plotted alongside the monthly production for the plant for the period January 2021 to December 2023. The costs analysed here include diesel and electricity, and linear trendlines have been included to give an indication of the direction of trend.

As previously highlighted, even though there are occasional fluctuations, monthly production seems to trend very closely around the mean, which is about 430,000 tonnes over the three-year period presented. Considering that unit cost is influenced by the monthly production, it is expected to follow a related trend. However, this is not the case. The trendline in Figure 17-20 shows a steep and steady increase throughout. In January 2021 for instance, the trendline indicates a unit cost of LSL91 per tonne and in January 2023, it is at LSL123 per tonne. While this analysis needs to be qualified in line with key inputs such as the production plan, the site location, external factors such as the exchange rate, taxes and customs duties on imports, and the price of fuel, the rate of increase still seems to be significant. Even if the two major spikes in the data in October 2022 and May 2023 were excluded, the steep upward trend would remain prominent.



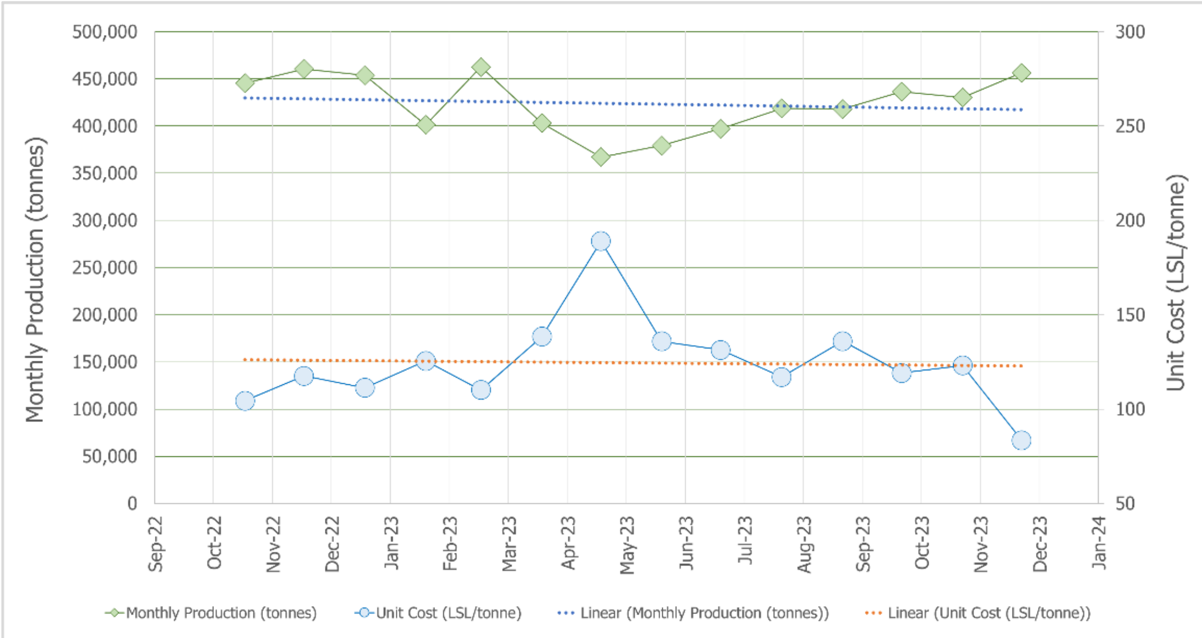
Source: SRK (2024)

Figure 17-20: Combined monthly production tonnage and plant operating unit cost for Letšeng (including diesel and electricity) for the period January 2021 to December 2023

There are other salient features that are worth highlighting in Figure 17-20:

- At LSL84 per tonne, the unit cost for the month of December 2023 seems very low for the tonnes treated. It appears that some costs are missing. If this data point is excluded, the rest of the data fits very well to the linear trend.
- The data also show that there is a steady increase in monthly production between the months of May 2023 and December 2023. This is accompanied by a steady decline in the unit cost, which is expected. During this period, the unit cost seemed to "bounce-off" the minimum threshold of about LSL120 per tonne.
- Except for the months of April 2023, May 2023 and June 2023, the monthly unit cost is either positioned on or below the trendline in Figure 17-20. For the period prior to November 2022, most of the data points are positioned above the trendline. It therefore appears that there is an improvement in the working cost within this limited period, despite the steady increase over the three-year time frame alluded to before.

The graph in Figure 17-21 has been plotted for the period November 2022 to December 2023. Throughout, the data correlate well, with increased production between successive months being accompanied by the related decline in unit cost. If the spike at the May 2023 data point is excluded, the data fit very well to the linear trend, which is a horizontal line at approximately LSL119 per tonne.

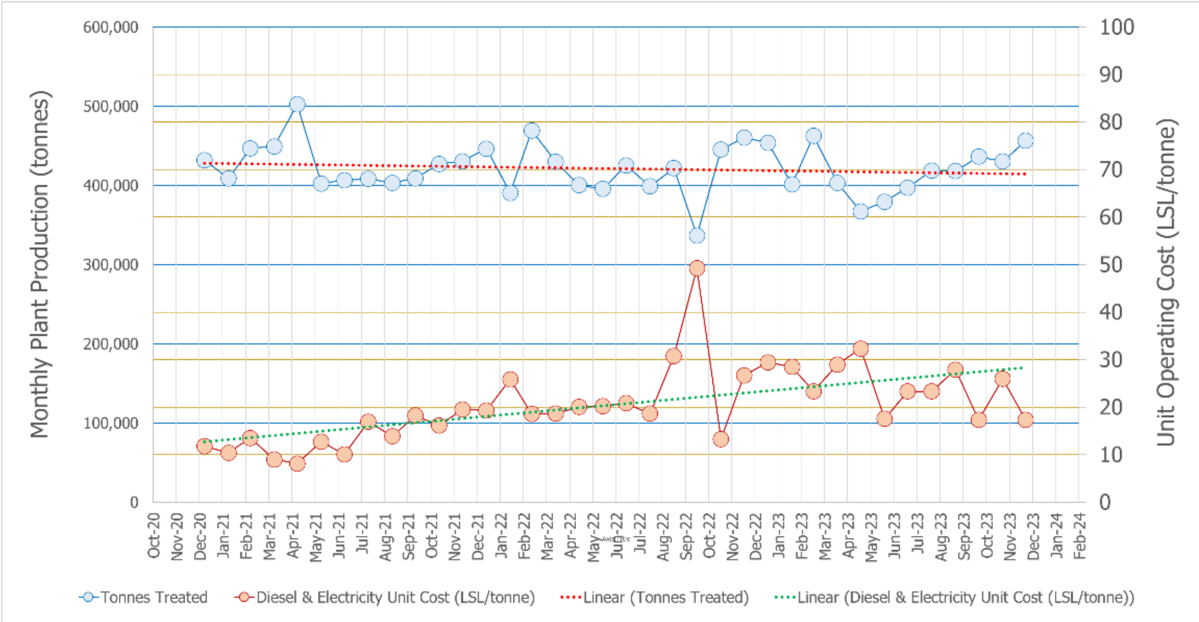


Source: SRK (2024)

Figure 17-21: The combined monthly production tonnage and plant operating unit cost for Letšeng (including diesel and electricity) for the period November 2022 to December 2023

17.12.3 Unit Operating Cost for Diesel and Electricity

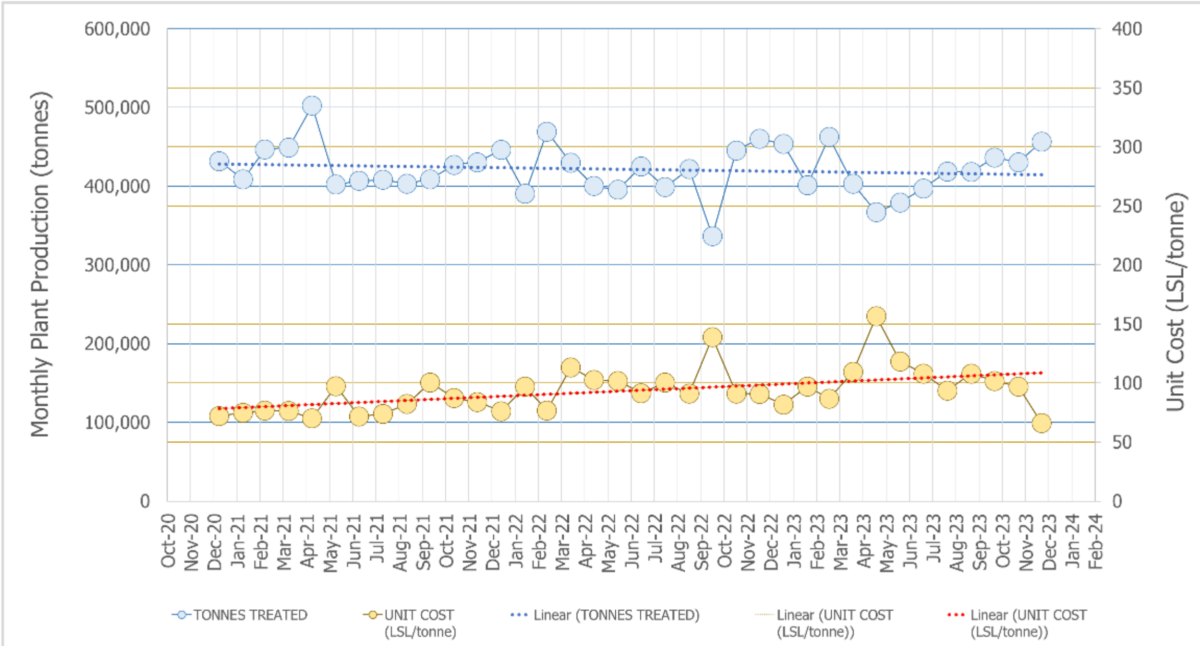
The graph in Figure 17-22 shows the unit operating cost for diesel and electricity for the period January 2021 to December 2023. A similar graph for the rest of the unit cost is shown in Figure 17-23 for comparison purposes. For both graphs, the monthly plant production has been included for correlation.



Source: SRK (2024)

Figure 17-22: The combined monthly production tonnage and plant operating unit cost for diesel and electricity for the period January 2021 to December 2023

There is a spike at the data point for the month of October 2022, which represents an increase of approximately 60% in the diesel and electricity unit cost, and 53% in the rest of the unit cost. This almost identical impact could be due to a common cause, which could be the reason for the reduced monthly plant production recorded for the month.



Source: SRK (2024)

Figure 17-23: The combined monthly production tonnage and plant operating unit cost for Letšeng (excluding diesel and electricity) for the period January 2021 to December 2023

The rest of the unit cost in Figure 17-23 also shows a spike on the data point for the month of May 2023, and this is not visible in the diesel and electricity working cost. Besides these two anomalies, both data sets fit very well with the linear trend, and each shows a steady climb over time. Over the three years presented, this is not aligned with the general trend in monthly production and could be influenced by other internal and external factors.

The standard deviation and mean for the three iterations of the unit cost for the period January 2021 to December 2023 have been calculated and are shown in Table 17-8. This is for the combined plant throughput.

Table 17-8: Summary of the separate iterations of the unit cost per tonne of monthly plant production for Letšeng

Description	Mean	Standard Deviation	Standard Deviation (% of mean)
Monthly Plant Production Tonnes	421,467	31,523	7%
Unit Cost (Including Diesel and Electricity)	114	25	22%
Unit Cost (excluding Diesel and Electricity)	93	19	20%
Unit Cost (for Diesel and Electricity)	21	8	40%

The standard deviation is a measure of how dispersed the data are in relation to the mean. A low, or small standard deviation indicates that data are clustered tightly around the mean, and a high, or large standard deviation indicates data are more spread out. At 7%, the standard deviation for the monthly plant production can be considered to be reasonably low and implies that the respective data are not spread far away from the mean. This implies low variation and reasonable consistency in the monthly plant production from month-to-month. However, this is not the case with unit cost. The iteration for diesel and electricity unit cost has a standard deviation of 40%. This is high and it implies a lot of variation throughout the production period being analysed. In general, the diesel and electricity unit cost contributed between 10% and 26% to the plants' unit costs for the period January 2021 to December 2023. This is significant and it warrants further work to understand and optimise the unit cost. However, it is important to note that the diesel usage is directly linked to the uncontrollable load-shedding as well as climatic events such as rainfall and lightning.

The effort could begin at the budgeting process. The basis for the current and historic budgets needs to be revisited and verified. This must consider all the assumptions made, including alignment with the approved production plans. Here, the work required to support the production plans must be accurately specified and costed. If this is not done to the correct level of detail, the accuracy of the budget for the unit cost will be compromised.

Once the basis for the past and current budgets is confirmed, the variance between the actual monthly unit cost and respective budget can be quantified and the causes investigated. The findings will become valuable learnings that must be incorporated into the basis for future budgets.

If this is not the current practice already, it is beneficial for Letšeng to consider drawing the unit cost budget from the principles of a Zero-Based Budget. With this method, all the expenses planned for must be justified according to the approved production plan and other useful assumptions. This is different from using the previous budget as a basis and making adjustments as needed.

Once the budget is completed, checked and approved, strict measures must be implemented to ensure compliance. This includes adherence to the budget and ensuring that costs are reported accurately. This must be measurable and incorporated in routine cost reviews.

17.12.4 Unit Cost Reduction Initiatives

During this review, discussions were held with Letšeng Mine and Gem Diamonds management to review the proposed unit cost reduction initiatives that are planned for 2024 and beyond.

The main areas of focus are:

- Reduce unit cost of processed tonnes by 25% from 2025 onwards.
- Increase the total tonnes treated by 6%.
- Increase the combined plant Overall Utilisation to 82.5%.
- Increase the rate per tonne treated to 750 tph, from the capped base of 720 tph set in 2024.
- Reduce overall cash spend by 15%.

This would result in an overall reduction of 25% in the unit cost per tonne treated.

Whilst this appears to be a challenging mine-wide target, it is considered possible for the Metallurgical discipline to meet its targets. The main reasons for this are as follows.

- The 2023 treatment operating costs were M634,904,349 and the 2024 forecast is M589,551,433. This is a reduction of 7%. The main driver to achieve this reduction is to move the plant operations in-house or rationalise the current Minopex contract. This will reduce the costs and also reduce the overall Letšeng Mine treatment plant management personnel as there will be less need for overseeing contractor operations.
- The diamond industry norm for treatment plant Overall Utilisation is in the region of 85%. Hence the target of 82.5% is considered reasonable. However, as noted in Section 17.5, it will be of paramount importance that the metallurgical accounting methodologies currently used are updated to ensure that that data gathered are adequately translated into information that allows management to fully understand the reasons for production delays, and can therefore take the appropriate action.
- During 2023 there has been a steady increase in the Overall Utilisation.
- Despite the fact that the rate of 750 tph has not been consistently achieved, it is considered a realistic target given the design of the two treatment plants and the equipment installed.

Letšeng Mine has been an outlier among the Lesotho diamond mines in that its unit costs have consistently been higher. If the corporate will is there to undertake these necessary planned changes, then there should be no reason why the treatment plant production and cost forecasts for 2024 and beyond cannot be met.

17.13 Capital Expenditure

Table 17-9 provides the 5-year planned capital expenditure budget for the plants.

The expenditure covers the necessary areas of tailings disposal capacity expansion and replacement of process equipment, which are essential for the mine to stay in business.

There is one project geared towards process improvements, which is the new Final Recovery and Sorthouse. These funds are earmarked for relocating the existing Recovery Tailings Retreatment Plant equipment into the Recovery Plant as recommended in Section 17.7 and is therefore fully supported. The funds allocated in the 5-year plan are indicative only and will be firmed up as more detailed work is undertaken.

Section 17.15 provides some suggestions as to potential methods of improving the mine’s revenue stream which, if considered to be of value, may indicate that some additional funds could be required for future studies.

Table 17-9: 5-Year capital expenditure budget

Project Name	2022 ACT	2023 BP - Original	2023 BP - Revised	2023 FC	2024 BP	2025 BP	2026 BP	2027 BP	2028 BP
Coarse Recovery XRT scavenging plant	-	-	-	-	-	-	-	-	-
Patiseng LOM development - 2024	699,466	15,425,793	15,425,793	15,425,793	3,856,448	-	-	-	-
Patiseng LOM development - New	-	-	-	-	16,964,200	8,074,000	2,920,500	6,875,000	7,662,600
Fines Recovery Scavenging Unit	-	566,967	736,022	736,022	-	-	-	-	-
Patiseng LOM Feasibility Study	3,769,027	1,227,305	1,397,382	1,397,382	-	-	-	-	-
Replacement of the Recovery glovebox inc. Leica Scope	217,444	582,556	-	-	-	-	-	-	-
XRT Option Study for the Recovery, Pilot and Tomra Plants	-	-	1,801,907	1,801,907	-	-	-	-	-
New PCA detailed engineering designs	17,600	-	-	-	-	-	-	-	-
Plant 1 scrubber replacement	-	9,900,000	900,000	900,000	-	-	-	-	-
3rd Plant Detailed Designs	5,518	-	-5,518	-5,518	-	-	-	-	-
Purchase of Tomra	4,690,451	-	-	-	-	-	-	-	-
P1 & P2 Screen Replacement	-	6,626,482	3,506,075	3,506,075	6,977,099	-	-	-	-
Plant 1 crawl beams capacity upgrade	-	-	873,053	873,053	-	-	-	-	-
Plant 1 Overhead Crane Upgrade/Replacement	-	-	4,059,198	4,059,198	-	-	-	-	-
New Final Recovery & Sorthouse	-	-	-	-	23,000,000	3,600,000	-	-	-
Fines XRT Sensor bar replacement (COM 300)	-	-	-	-		1,500,000	-	-	1,700,000
Coarse XRT Sensor bar replacement (COM 2.0)	-	-	-	-		1,500,000	-	-	1,700,000

Source:

17.14 Potential Letšeng Mine Process Engineering Improvements

Discussions during the QP's initial site visit indicated that a great deal of effort was being expended on methods of improving revenue generation by the improved recovery of intact large stones.

17.14.1 Large Diamond Detection and Liberation

During the QP's first site visit in 2019, the mine was testing innovative new methods of detecting and liberating large diamonds.

During the 1980's and 1990's De Beers undertook research into methods for detecting diamonds within kimberlite (DWIK) using many techniques including X-rays, computer aided tomography and nuclear magnetic resonance. Whilst laboratory tests indicated that some of these techniques were able to identify diamonds, it was decided not to pursue this path mainly for environmental and safety reasons.

In parallel with DWIK, assuming that it would be successful, the concept of using electric pulse disaggregation (EPD) to liberate the diamonds was pursued. This method was relatively successful, but, at that time, could only be used for single particles and hence required DWIK to work in order for the complete system to be considered as a viable production unit process.

The DWIK system used intensive XRT to detect the diamonds and EPD for the liberation. Test work continued for some time, but it was noted during the QP's second site visit in 2022 that the plant had been shut down whilst further exploratory work regarding the technology supplier, algorithm, operating parameters and segmentation techniques are undertaken. In addition Gem Diamonds is also investigating alternative technologies.

Diamond damage at the mine is currently considered to be significant and therefore the lack of efficacy of DWIK and EPD was a setback. However, the experience at Karowe Mine has indicated that other forms of current technology may be effective at Letšeng Mine. These are discussed in Section 17.15.

17.15 QP Site Visit and Review Opinions

17.15.1 New Primary Crushing Plants

The addition of the new Primary Crushing Plants at the mine allowed an opportunity to reconsider the unit processes that could reduce diamond damage at the mine.

The installation of high capacity XRT machines that can treat large size fractions at high tonnages, such as at Karowe Mine, has proven to significantly improve the economic performances of the mines in which they have been installed when utilised for the recovery of large, high value diamonds such as those that are prevalent at Letšeng.

In or around 2019, Fluor completed a Pre-Feasibility Study of the new Primary Crushing sections at Letšeng Mine which included the installation of XRT machines along these lines that indicated a viable project with a return on investment over a period of 2.5 years.

Unfortunately, this option was not installed. The QP considers this to be an important opportunity for the future of Letšeng and recommends that a detailed review of the potentially large economic benefits of early stage recovery of large diamonds in the plants' flowsheets be undertaken as a matter of urgency.

17.15.2 Diamond Liberation and Recovery

The recent diamond control work being undertaken at Letšeng Mine appears to indicate that there are at least two separate business models that could be considered.

Due to the unique diamond size distribution, the vast majority of the liberation takes place very early in the plants' flowsheet: mainly in the Primary and Secondary Crushing circuits. This indicates that the recovery of the large diamonds should also be done as early as possible, as noted in Section 17.15.1.

It would be highly beneficial to review the economics of using a large diamond recovery system as early as possible in the plants' flowsheets using either autogenous milling or scrubbing/high pressure grinding rolls (HPGRs) as the primary diamond liberation unit process, followed by XRT, and potentially near infra-red (NIR) waste sorting to achieve the goal of minimising diamond damage of the large stones. The lack of success of the DWIK/EPD project would appear to make this more urgent.

Also of interest is that the break-even carat size for the mine varies between approximately 20 ct and 80 ct which begs the question as to why the smaller diamonds are recovered at all. There may be a number of good reasons to do so, including, inter alia: the need to understand the overall Resource grade and diamond size distribution in order to better understand the mine's diamond SFD; and the corporate requirement to maintain shareholder value. However, the recent analyses seem to indicate a potential two-tiered approach to the long term design of the treatment plants, namely a revised method of recovery of the large stones where the real value lies, and a separate process for the recovery of the smaller diamonds where the revenue gains are much smaller.

The steady decline in the overall Asset Utilisation of both plants, as noted in Section 17.5, indicates that the opportunity to provide a discreet high efficiency, high utilisation, large diamond plant that is not compromised by the performance of sections of the plant recovering the much lower value stones could well significantly improve the economics of Letšeng Mine.

The Letšeng Mine licence has just recently been renewed which means that the LOM can now consider the potential to go underground as the open pit becomes less economically viable. An underground operation is likely to cause a reduction in the tonnages mined and therefore will have an impact on the required plant capacities. It is considered wise to take this aspect into account in the current range of potential plant optimisation projects.

17.15.3 Dense Medium Separation

The DMS section in No. 1 Plant is somewhat complex, and the QP considered that there is an opportunity to simplify the flowsheet. Previous work on similar projects had the effect of reducing operating costs by means of the following:

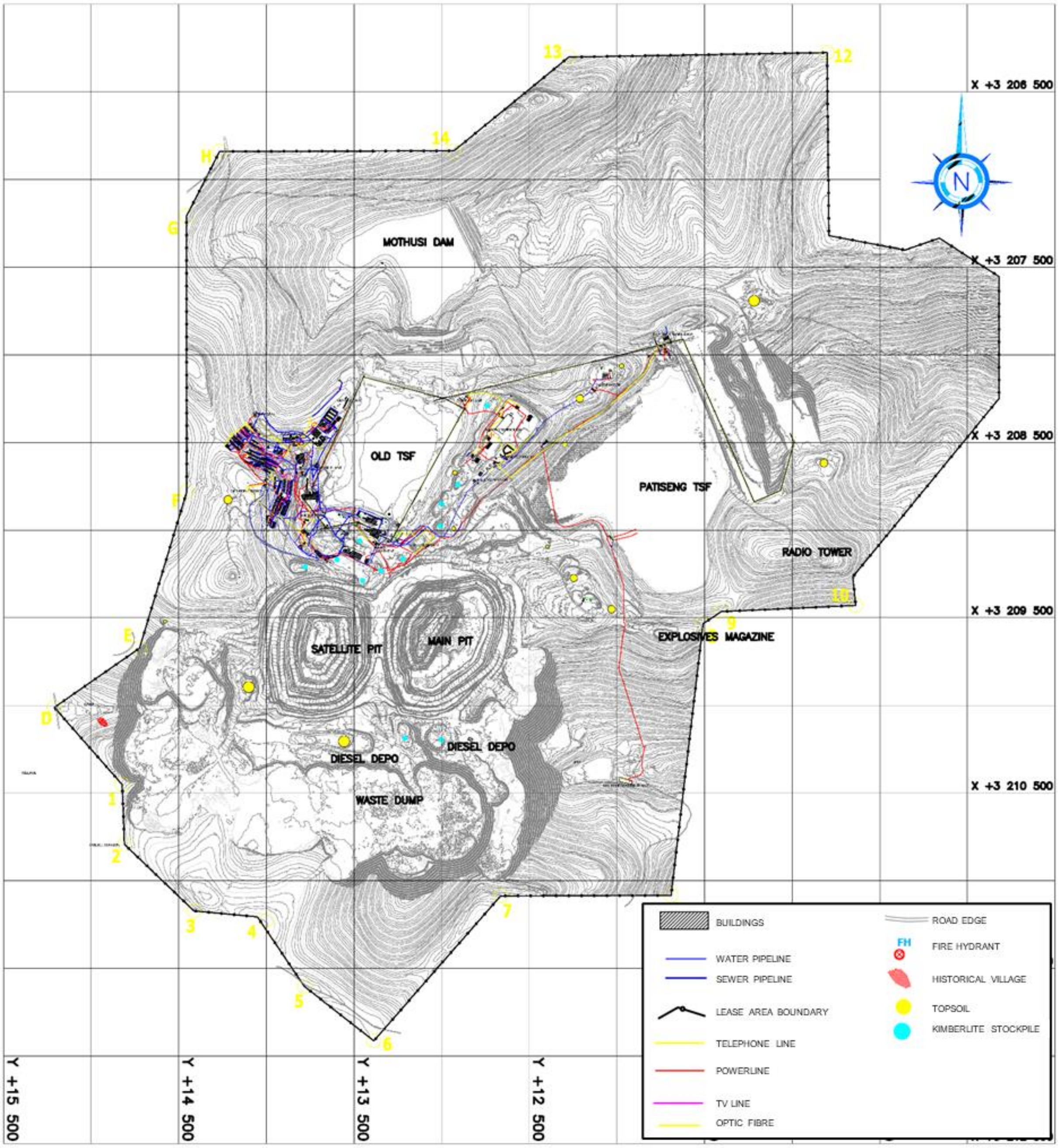
- Removal of equipment
- Lower power consumption
- Lower FeSi consumption
- Lower water consumption
- Less maintenance
- Higher availability
- Higher utilization
- Potential to reduce operational and maintenance labour

The No. 2 Plant DMS design, as noted above, includes gravity fed systems that were implemented in an attempt to reduce diamond damage. If there is little or no difference between the diamonds recovered from the two plants (in terms of damage), then it may be an option to consider modifying the No. 2 Plant DMS sections to pump fed systems, enabling removal of the two problematic vertical conveyors. In addition, pump fed systems require much less dense medium inventory, which means less pumping requirements and reduced FeSi losses. A detailed engineering assessment would be required to determine if this is possible and economically viable.

18 Project Infrastructure

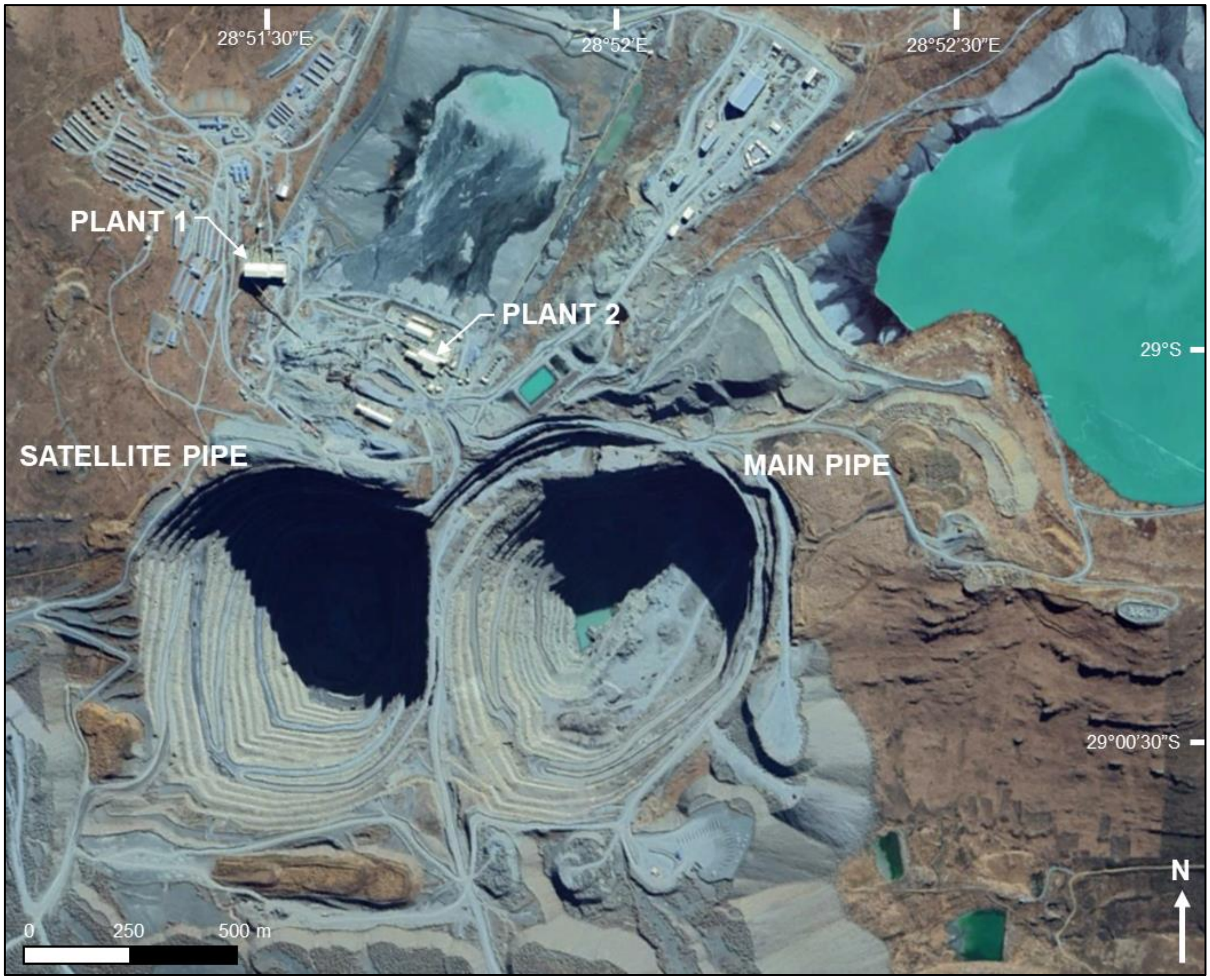
18.1 Major Letšeng Infrastructure

Major site features of the Letšeng Mine include the Main Pipe and Satellite Pipe open pits, the waste rock dump (WRD) and low grade ore stockpiles, the Mothusi water storage facility (Mothusi Dam), the Patising RSF, the RTZ and Patising seepage dams, process, and raw water ponds, two process plants and a recovery plant, main offices and accommodation, and the Old Residue Storage Facility (Old RSF) as shown in Figure 18-1 and Figure 18-2. The largest users of power and water at the Letšeng Mine are the process and recovery plants.



Source: Letšeng (2024)

Figure 18-1: Surface plan of the Letšeng Mine



Source: Letšeng (2023)

Figure 18-2: Aerial photograph of the Satellite and Main Pipe open pits and the process and recovery plants

18.2 Site Buildings Overview

The Letšeng Mine has a range of modern buildings that are in very good condition. These buildings include:

- Administration and engineering offices;
- Medical clinic with ambulance station and helipad for emergency transport;
- Two DMS process plants and associated offices;
- A final recovery plant building and associated offices;
- Accommodation for approximately 1,400+ employees and contractors;
- Kitchen and mess facilities, and employee after-hours lounge;

- Gymnasium and recreational facilities;
- Workshops, stores, diesel storage facility;
- Explosive magazine for non-bulk explosives and a bulk explosives storage facility; and
- Weather Station.

Figure 18-3 and Figure 18-4 show views of the accommodation blocks, which are grouped in clusters that are relatively close to one another and are a short walking distance to the offices, mess hall and medical clinic.

Source: SRK (2022)

Figure 18-3: View of some of the accommodation blocks

Source: Google Earth (2023)

Figure 18-4: Aerial photograph of some of the accommodation blocks

18.3 Administration Building

The administration building is a brick and mortar, one-storey building that includes the administration and engineering offices, and several meeting and training rooms (Figure 18-5).

Source: SRK (2022)

Figure 18-5: Mine administration building

18.4 Medical Clinic

Letšeng has a modern medical clinic that is equipped to handle minor to moderate injuries. For very serious injuries, the mine can transport patients by ambulance or by helicopter. Figure 18-6 shows the clinic and ambulance station.

Source: SRK (2022)

Figure 18-6: medical clinic and ambulance station

18.5 Water Infrastructure

18.5.1 Water Infrastructure Systems

The various water infrastructure systems within the various catchments have been summarised in the Stormwater Plan, with the river catchments illustrated in Figure 18-7:

- **Patising system:** The Patising system is defined by the Patising River catchment. The Patising RSF and its seepage dam below the main wall are the only impoundments in this system.
- **RTZ system:** The RTZ system is defined by the catchment of a small tributary of the Khubelu River. The tributary is to the south of the Patising River. The system ends at the RTZ Dam, located downstream of the WRD. The system also includes the RTZ old tailings dams. The system is currently considered a dirty water system due to polluted seepage from the WRD in the catchment headwaters.
- **Qaqa system:** The Qaqa system is defined by the headwaters of a tributary of the Qaqa River which originates approximately 5 km northwest of the mine. The system ends at the downstream end of the engineered wetland below the WRD. It is considered a dirty water system as seepage emanating from the WRD is polluted. The mine's intention is to reduce pollution levels in the seepage water by phytoremediation in the wetland.

- **Mothusi system:** The Mothusi system is defined by the headwaters of the Mokoalibane River. The system ends just downstream of the Mothusi Dam where an access road crosses the river. The system is considered a clean system and water from this system is considered as raw water.
- **Old RSF system:** The Old RSF system is also defined by the headwaters of the Mokoalibane River, on one of the tributaries. However, an old slimes dam with tailings facility has been constructed in this tributary and creates a cut off between the Old RSF system and the Mothusi system. The system is considered to be a dirty water system due to the presence of the Old RSF, plant area run-off and sewage treatment plant discharge.
- **Pit system:** The Pit system is defined by the pit shell of both mine pits as well as local topography that drains into the pits, formed by portions of the WRD and haul roads. The system is considered as a dirty water system due to the mining activity taking place.

Source: SRK (2023)

Figure 18-7: Letšeng river catchments in relation to key infrastructure

18.5.2 Water Storage and Consumption

Water is stored on-site within the Mothusi Dam water storage facility (Figure 18-8). The Mothusi Dam level is at about 86% of its capacity and can sustain the mine for approximately 7 years. Letšeng relies on runoff from precipitation for part of its water supply, that reportedly would be affected by a prolonged drought. Potable water is sourced from the Mothusi Dam water storage facility and is pumped to the Potable Water Dam. Potable water is first treated in the potable water treatment plant, prior to it being used for recovery processes and domestic consumption. Clean water for water quality sensitive processes such as pump gland service and the Scavenging/Audit Treatment Facility Plant, is sourced from the Mothusi Dam water storage facility.

The dam was originally designed and constructed as a tailings dam starter wall, which concluded in 1980. In order to function safely as a typical water storage dam, rehabilitation measures were designed, the construction of which concluded in February 2017. With a total capacity of above 3.7 Mm^3, Mothusi Dam is categorised as a Category III dam, i.e., a large dam and it has a significant hazard potential. The inspection requirements of such a dam are contained in the RSA Regulations: Safety of Dams (Republic of South Africa, 2012) and Chapter 12 of the National Water Act (Republic of South Africa, 1998). As such, scheduled safety inspections are undertaken internally by LD Engineering team on quarterly basis, and annually by Dam Specialists; AECOM SA.

Clean water consumption from the Mothusi Dam water storage facility, which used to be about 4,000 m^3 per day, was reduced by about 75% to less than 1,000 m^3 per day by the introduction of a water purification system, which allows reclaimed water from the Old RSF and the Patising RSF to be used for most of the process plants' operations. In the infrequent event that water quality from the Old RSF and the Patising RSF is below the process plants' water quality standards, clean water is sourced from the Mothusi Dam water storage facility via the potable water treatment plant.

The Process Water Dam, situated next to the Potable Water Dam, is filled with return water pumped from the Patising RSF which is the recycled water used in the process plants. Furthermore, water losses to slimes are significantly reduced by the installation of a thickener in each plant to treat residues. Process Plant 1 and Plant 2, together consume approximately 600,000 m^3 of water per month or 7.1 Mm^3 of water per year, of which more than 60% is recycled from the Old RSF and the Patising RSF. Currently, there are no water supply concerns at the Letšeng Mine.

Source: SRK (2022)

Figure 18-8: Mothusi Dam water storage facility

18.5.3 Fire Water

A fire water tank is situated at the highest point above the mine. Fire water is gravity fed into deep, in-ground water lines to prevent freezing. Water hydrants are located throughout the mine site. The source of the water is the Mothusi Dam water storage facility, and the water has not been processed in the potable water treatment plant. The mine has an Emergency Response Team for fire fighting and has several mobile water tanks fitted with high pressure water pumps and monitors. Figure 18-9 shows the potable water and fire water storage tanks at a high point on the mine site.

Source: SRK (2022)

Figure 18-9: Potable water and fire water storage tanks

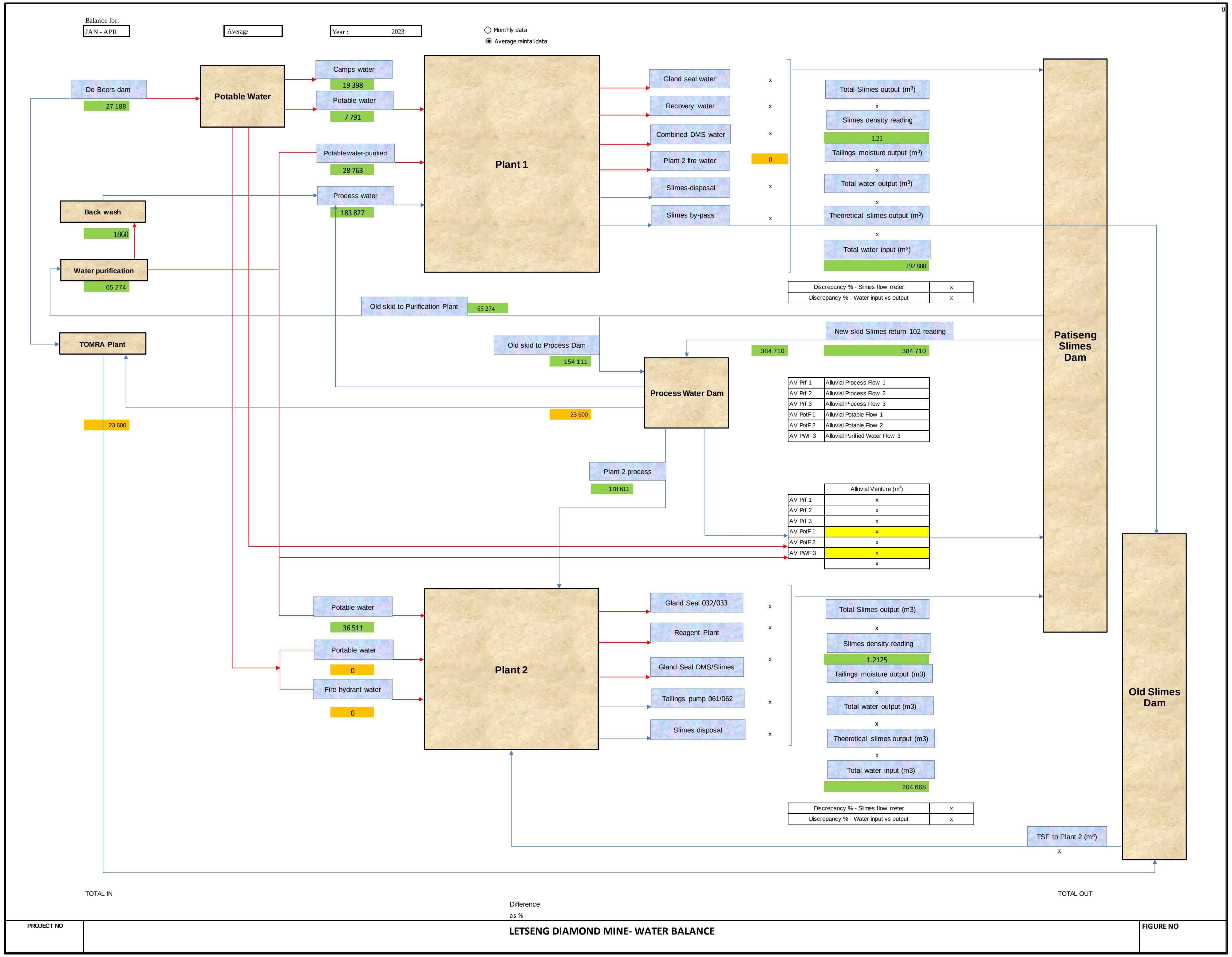
18.5.4 Pit Dewatering

Refer to Section 16, Mining Methods.

18.5.5 Site Water Balance

Figure 18.10 shows the general site-wide water balance displaying average flow values over the months January to April 2023. The site-wide water balance is updated on a monthly basis. The main inflows to the site water balance are from the Mothusi Dam water storage facility, the Old RSF and the Patising RSF.

Continuous flow monitoring data are collected by instrumentation at weirs within the Old RSF, Mothusi and Qaqa systems where the weirs are located within the mine boundary fences and instrumentation can be secured. For this reason, the RTZ and Patising systems downstream of the mine cannot be instrumented for flows. However, the 2021 Letšeng Stormwater Management Action Plan does state the requirement to "Maintain functionality of the measuring weir". The Letšeng Water Management Plan also sets the objective to maintain monitoring data collection and notes that "the RTZ weir structure was not constructed properly and leaks through its foundation", stating that the weir must be repaired and become operational (Bulwark, 2021).



Source: Letšeng (2023)

Figure 18-10: Letšeng Mine water balance with average monthly values over the months January to April 2023

18.5.6 Water-related Risks

Water-related risk at Letšeng Mine is echoed by the findings of the Annual External Social and Environmental Management Plan Compliance Audit, where the only non-compliance finding was related to groundwater quality (Shangoni, 2023).

From review of the latest available management plans, monitoring reports and studies, the following key risks are identified in relation to water at the mine:

7. Patising RSF freeboard

The 2021 Letšeng Water Management Plan itemises the objective that "*The pool should not reach within 50 m of the beach head along the main wall following a 50-year, 24-hr design storm*". At the time of writing the 2021 Water Management Plan, this objective was listed as non-compliant, with a target set that "The minimum beach freeboard must be >3.5m at all times" (Bulwark, 2021). This target must remain a priority for management of risk at the Patising RSF.

8. Accidental discharges and spills

The most likely accidental or stormwater-related spill of mine-impacted water that could typically occur on site is spill of dirty water to the Patising system from the Patising return water/seepage water dam below the Patising coarse tailings. As a matter of course, no dirty waters are released to the natural watercourse of the Patising but are captured within the Patising return water/seepage water dam and pumped back to the RSF for recycling. However, risks are present that the Patising return water/seepage water dam can spill to the Patising catchment if levels are not correctly managed, pump infrastructure malfunctions or as a result of extreme stormwater flows.

The 2021 Letšeng Stormwater Management Action Plan does state the requirement to "*Maintain functionality of the seepage collection dam below Patising tailings storage facility*" and to "*Maintain functionality of the access road with a drain around Patising seepage collection dam*". The Letšeng Stormwater Management Plan (Ilanda, 2021)) states that the 1:50 access road can be used as a storm water diversion to. The SWMP states that (at the time of writing) the 50-year storm volume generated by the catchment of the Patising seepage dam is approximately 35 000 m^3, and that given the steep topography a Storm water diversion that can convey the 50-year storm are not practical to construct, but that the access road can be used as a storm water diversion.

The Stormwater Management Plan states that "*This diversion will not be large enough to accommodate the 50-year storm, but it will divert a significant proportion of runoff generated by the catchment above it*". Stormwater diversion around the Patising seepage dam was also highlighted as a non-compliance in the 2021 Letšeng Water Management Plan (Bulwark, 2021), along with stormwater always being directed away from the advancing toe of the tailings embankment.

9. Elevated nitrates within the receiving catchments

   a. Patising: Fine tailings within the RSF and coarse tailings deposited within the headwaters of the Patising system contain nitrates from explosive residues. Dirty water is not released to the Patising catchment, however seepage water from the tailings is shown to have an impact down the Patising catchment. Water quality records within the natural watercourse of the Patising immediately downstream of the seepage dam routinely show nitrate levels which are significantly lower than in the seepage dam (which is operated as a closed circuit pumping back to the RSF). However, nitrates in the Patising watercourse are still higher than reference sites not impacted by the mine. The low flow volume of the Patising limits the impact of the nitrate concentrations on the receiving Khubelu River (Figure 18-7) which is of significantly larger volume. A nitrate isotope study (SRK, 2023b) found links between mine-impacted waters and water samples taken in the lower Patising catchment and including the Patising village supply borehole near the confluence with the Khubelu River. These findings point toward subsurface flow paths allowing mine-impacted waters to mix with and influence subsurface water as far down as the lower reaches of the Patising near the Khubelu River confluence (SRK, 2023b). While water quality records within the Patising show average nitrate concentrations are on a downward trend, the lower Khubelu system is showing a steady increase in nitrate concentrations, which is driven mostly by the nitrate-rich water from the RTZ system (GroundTruth, 2023b).

b. RTZ: the RTZ system is characterised by elevated nitrates as a result of explosive residues within the waste rock of the WRD. Among the monitoring boreholes, those associated with the WRD show some of the highest nitrate concentrations (GCS, 2022). Pit water discharges to the WRD contribute high volumes of dirty water with elevated nitrate levels. Given the elevated flow volumes as a result of pit discharges, the RTZ has the potential to contribute a high load of nutrients to the downstream watercourse and the Khubelu River, which could introduce risk to downstream users. The Letšeng Water Management Plan sets the objective to maximise the nitrate removal potential of the RTZ Dam (Bulwark, 2021).

c. Qaqa: Similar to the RTZ, the Qaqa catchment headwater is under the footprint of the WRD, such that it is subject to seepage with elevated nitrates. The constructed wetland works to mitigate this risk under natural flows. The splitting of pit water discharges between the RTZ and Qaqa systems will mitigate risk to the RTZ system, and the downstream users on the RTZ and the Khubelu Rivers. However, risk will be elevated within the Qaqa system and to any downstream users.

10. Impacts of releases on receiving catchments

Pit discharges are not released directly to receiving watercourses, but to the WRD which straddles the RTZ and Qaqa systems. However, the discharges result in a direct increase in surface water flows within the receiving systems, with a proportional increase in nitrate concentrations and loads. The volume of discharge introduces a potential risk in terms of nitrate load, and also a potential risk to biophysical habitat through scour, erosion and altering of habitat. This has the potential to increase the risk of impact to downstream users. These risks could be mitigated by the constructed wetland in the Qaqa system, the erosion control structures within the RTZ, and any future wetland rehabilitation or construction initiatives. However, effective impact mitigation will require a holistic management approach where a suite of nitrate interventions, both engineered and ecological, both at source and receiving environment, should be applied (GroundTruth, 2023b).

18.6 Telecommunications

The mine site has modern telephone and ethernet data systems that provide effective telephone and data communications for reliable emergency, administrative and recreational use. At the highest point at the mine site, aerial communication repeater towers are installed along with satellite dish receivers.

18.7 Security

The mine site is fenced and has a 24hr access-controlled entrance staffed by G4S Lesotho (Pty) Ltd. Letšeng employs its own security staff for product and industrial security within the Mine, with strong focus on the processing plants which includes the Recovery Plant and the Sort House (Red Area).

The Red Area access/egress protocols, and the operational and maintenance workflow within, are governed by strict controls to ensure a high-level of product security and process integrity. Besides a hands-off process design, other controls include sophisticated biometric and camera surveillance systems, together with a low dosage X-Ray body scanner for all staff upon exit from the area. All security and process staff that are involved with diamond recovery are also periodically subjected to integrity assessments by means of voice stress analysis, polygraph, and/or lifestyle audits.

The Lesotho Mounted Police Services and the Lesotho Defense Force provides support with patrol and protection duties during product export events.

18.8 Electrical System

Power is sourced from Lesotho Energy Corporation (LEC), who in turns sources from South Africa via the Eskom electrical grid with an 88 kV powerline that originates in Clarens, South Africa and extends to Khukhune, Lesotho. The line from Khukhune is rated at 50 MVA but Eskom limits the available power to 15 MVA. The voltage is stepped down from 88 kV to 33 kV at a Lesotho Electricity Company (Pty) Ltd substation prior to reaching the mine. The Letšeng substation has a capacity of 15 MVA (two transformers of 7.5 MVA each).

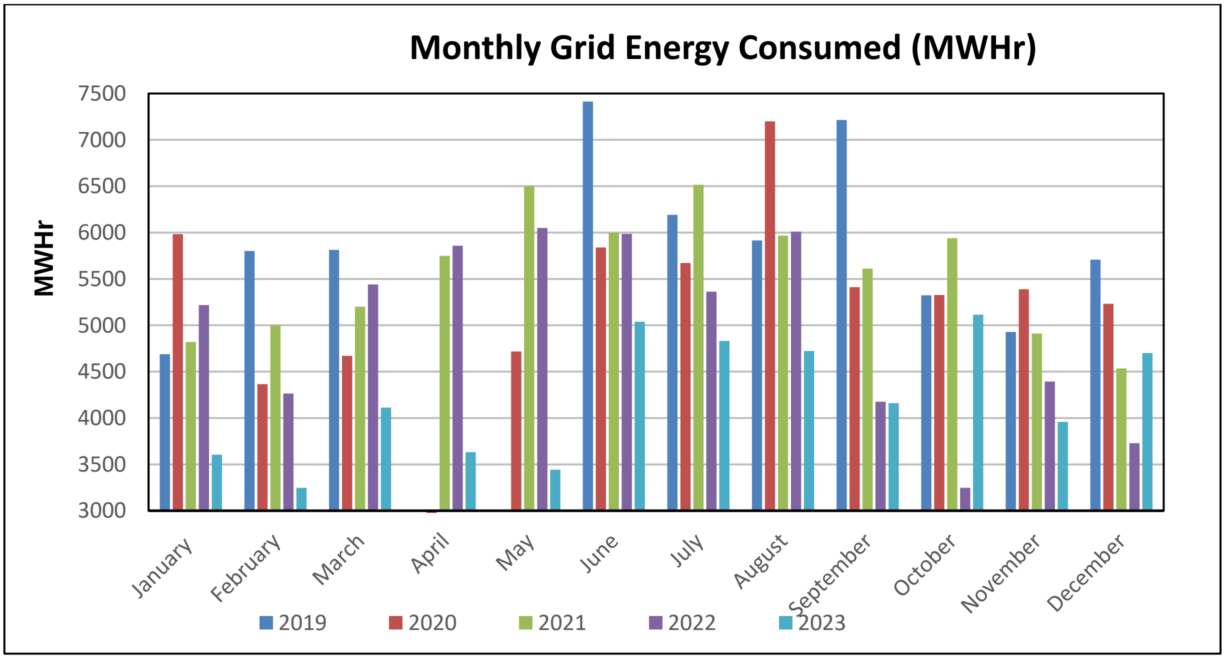
The mine is contracted with the Lesotho Electricity Company at a peak power demand of 12 MVA. Average demand is approximately 10.8 MVA and average power consumption is approximately 5.9 GWHr.

Typical average loads are shown in Table 18-1. Monthly grid power consumption is shown in Figure 18-11 and monthly peak power is shown in Figure 18-12. Figure 18-13 shows a site single-line electrical drawing.

Table 18-1: Average power loads for major power users

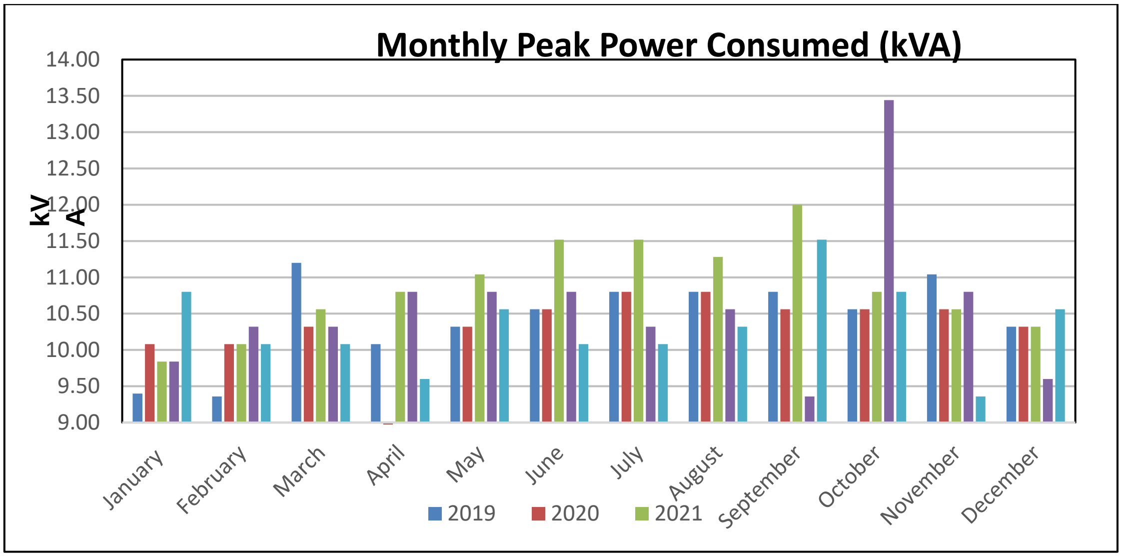
Unit	Average Power Load (kVA)
Process Plant 1	4,600
Process Plant 2	4,000
Primary Crushing Area	1,100
Camp (North Feeder)	2,600
South Feeder	1,600

Source: Letšeng, 2024



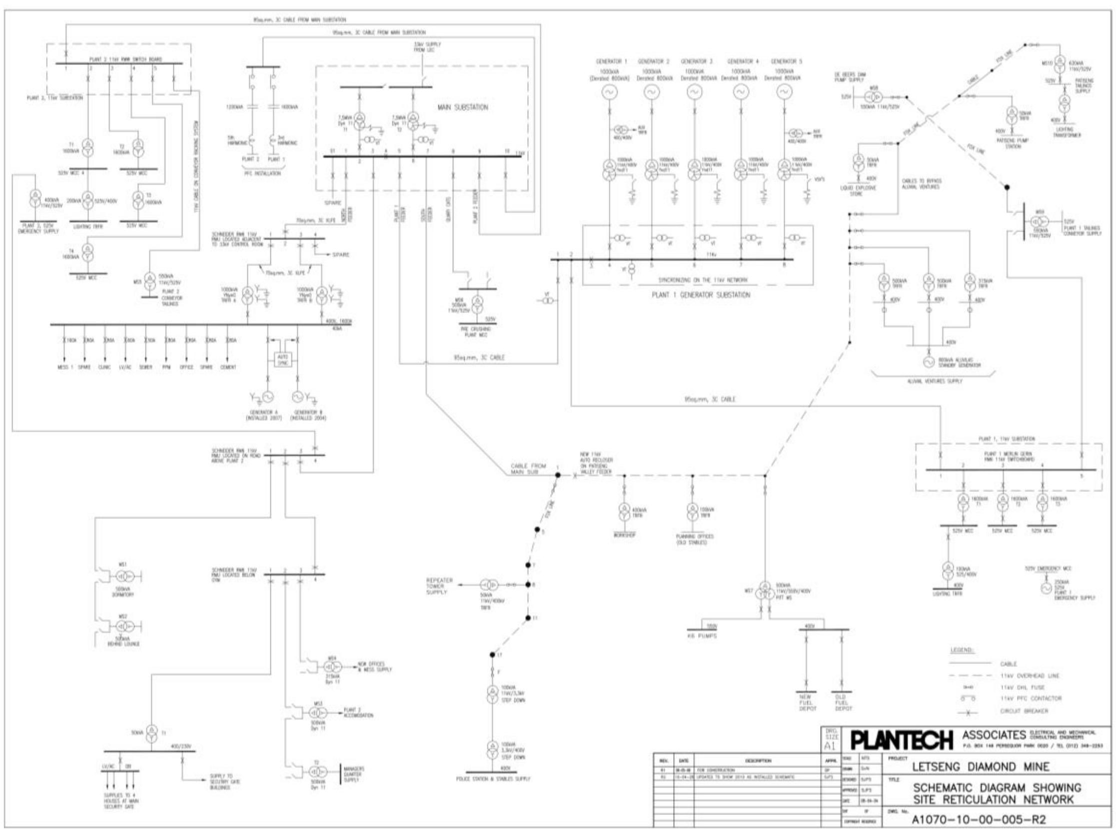
Source: Letšeng (2024)

Figure 18-11: Monthly grid energy consumed (MWhr)



Source: Letšeng (2024)

Figure 18-12: Monthly peak power (kVA)



Source: Letšeng (2023)

Figure 18-13: Overall site single line diagram

The mine has two generator plants and uses them when there is a grid power outage. During periods of electrical storms, the mine proactively switches to its generator plants as the risk of a grid power outage during an electrical storm is very high. The mine currently has 14,500 kVA of generation capacity at the mine comprised of Letšeng-owned equipment, 7,500 kVA (5 x 1000 kVA and 2 x 1250 kVA) generators derated by 20% each, and rental generators with a capacity of 10,000kVA (9 x 1250 kVA) derated by 15% each.

When there is a need, the mine is able to operate all aspects of its operation on self-generated power because the generators are able to provide sufficient power to run all processes including the camp area.

18.9 Surface Mobile Equipment

Both kimberlite pipes at Letšeng are currently being mined using conventional drill, blast, load and haul open-pit techniques, stripping waste where necessary in terms of the approved mining schedule. Letšeng terminated the Load and Haul contract with MMIC with effect from 31 December 2023, eleven months ahead of the scheduled contract end date. Letšeng and MMIC had a business relationship dating all the way back to 2005. Letšeng is therefore insourcing drilling, loading and hauling activities as from the beginning of 2024. The move is expected to lead to further efficiencies and operational cost reductions at Letšeng going forward.

Ore and waste material is drilled and blasted as required in 14 m benches, loaded using backhoe excavators or front-end loaders and hauled using a mix of articulated and rigid body Caterpillar trucks. Material hauling operations are caried out using either 45-t CAT 745 ADTs, 55t CAT 773 and/or 91-t CAT 777 rigid trucks. CAT 777 rigid trucks are dedicated to waste mining while CAT 773 rigid trucks can mine both waste and ore depending on pit size and equipment availability.

18.10 Waste Rock Storage

The Letšeng Mine operates one large WRD, extending from the west to the east of the existing mine pits, encompassing a large southern area. The current WRD footprint is approximately 220 ha and varies in height from a few metres to more than 110 m in deep valley areas. Generally, the WRD is advancing in a southerly and southeasterly direction as the western area is now restricted. The historical nitrate removal wetland located west of the WRD adjacent to the national A1 road remains operational.

Generally, topsoil stripping is practised before the advancing WRD downstream toe/s. In isolated areas with negligible topsoil coverage, topsoil stripping is not practised. The WRD is currently a single-lift facility on some faces, with the primary dumping method being end-tipping down the slope from the high horizontal crest edges. Raising the WRD's multiple top surfaces necessitates large quantities of waste rock tipped into numerous heaps, followed by bulldozer flattening and shaping operations.

The standard operating procedure at each waste rock operational crest requires an end-tipping truck arrestor safety berm formed using bulldozer/s. These waste rock-formed trapezoidal safety berms are built to half wheel height of the largest haulage truck in use (Cat 777), allowing safer end-tipping from the WRD crests to minimize the risk of trucks accidentally reversing onto and down the operational slope/s, which has occurred previously.

Waste rock is not generally dozed over the crests, resulting in an angle of repose of approximately 35° as measured from horizontal. Portable lighting rigs are used to provide additional illumination at night. The WRD access roads, ramps, and horizontal working surfaces are regularly dressed in thin layers of coarse kimberlite tailings, reducing wear and tear on the truck tires.

Ex-pits waste rock is transported to the WRD using a truck fleet consisting of Cat 777s and supported by Cat 773s, with the entire fleet operated under a live fleet management system.

Figure 18-14 shows the WRD southeast of the eastern pit.

Source: SRK (2022)

Figure 18-14: WRD southeast of the eastern pit

18.11 Residue Storage Facility

The process plants produce two residue streams:

- Coarse kimberlite tailings (+2.0 mm to 40.0 mm) 70% split, primarily used for wall building and placed dry using bulldozers and secondary use as dressing to the operating surfaces of the WRD.
- Fine kimberlite tailings stream (-2.0 mm) 30% split, permanently disposed of in preformed RSF basin/s as a slurry and deposited via multiple open-ended spigots.

Coarse kimberlite tailings are transported to the Patising Valley using a conveyor belt transport system. The belts are 750 mm wide coming from each of the two process plants, and these feed onto a 900 mm wide belt, which delivers the coarse tailings to the deposition point on the RSF. Stripping of topsoil in advance of the coarse tailings placement is being practised. The tailings are generally deposited on the crest and then pushed downslope by bulldozers. The angle of repose of the tailings material is approximately 35° as measured from horizontal. Maximum conveyor material transportation rates are 290 tph from Plant 1 and 350 tph from Plant 2.

All fines residues are disposed of into the Patising RSF in the Patising Valley, and hydraulic deposition is practised via 4 - 5 open-ended spigots. Fine residue deposition is restricted to the northeast and northwest flanks, ensuring the pool water is forced to the southern valley of the RSF, where the supernatant and dirty stormwater are pumped back to the process plant via barge pumps.

The raising method of the Patising RSF is through downstream deposition. The remaining coarse residue volume is estimated at 8.47 Mm^3 in 4.7 years as of January 2023, based on coarse residue production of 4.029 Mt/a (planned), and 5.7 years based on production of 3.34 Mt/a (Historical actual) and it does not meet the LOM deposition requirement. The EoR RSFs Annual Performance review states, "*There is sufficient fines and coarse storage capacity available to accommodate the life of mine tonnage profiles to full supply levels provided that the LOM design is implemented*" and also "*Additional course storage capacity will be required in 2026 in order to accommodate the life of mine tonnage profiles*". It is the SRK QP's understanding that a comprehensive study was undertaken that delivers a LOM design for commencement in 2024, but no comment offered due to time limitations/constraints on this Technical Report. The available capacity for fine residue is approximately 10.8 years but could be reduced to approximately 10.1 years as the planned Coarse 70% and Fine 30% deposition split is actually Coarse 66% and Fine 34% split.

Quarterly structural stability inspections are performed by Bulwark (the appointed Engineer of Record), and annual structural stability assessments are performed by Bulwark. The Old RSF and Patising RSF currently has containment wall piezometers installed that are monitored remotely.

At the time of the QP's site visit, the conveyors transported the kimberlite material coarse-size fraction, as mentioned above, to the southeast end of the Patising RSF, where a new wall of kimberlite tailings is being constructed that will eventually extend in a north-westerly direction, parallel to the existing Patising RSF. For this work, the conveyor belt transport system is being used, and where the conveyor belt transport system is in a downslope orientation, a regenerative braking system generates power, which is then pushed back into the mine's electrical system.

A contractor, Construction and Mining Solutions (CMS) operates the site's RSFs. The CMS site manager carries the subordinate manager appointment and is directly responsible for the operation of the residue storage facilities and reports to the Responsible Tailings Facility Engineer (RTFE).

The Old RSF and Patising RSF operational pools were both large during the QP's September 2022 site inspection. The reviewed 2023 Engineer of Record (EoR) documentation highlighted large pools forming, especially post-storm events, and also states the Patising RSF can easily accommodate the 1:10,000-year 24 hour duration storm event, therefore posing no risk to the Mine. However, the Old RSF the freeboard analysis indicates that there is currently insufficient total freeboard in the storage basin to ensure conformance for the 5 000-year and 10 000-year storm events and will only be rectified when the boundary walls are completed, consequently the Old RSF currently poses a risk to the Mine. The EoR has not documented any significant RSF risks since both facilities exhibited dry beaches greater than 100 m between the pools, and the main outer containment walls and vertical freeboards are well above the pre-set requirements, even post-storm events. The reviewed documentation also indicates high priority afforded to urgently reducing RSF pool sizes. The remedial measures to the Old RSF's coarse tailings leading toe differential settlement area by reducing the load and cutting back the slope appear to be successfully implemented.

No further coarse tailing deposition on the Old RSF north wall is planned, especially since the recent removal of the deposition conveyor belt infrastructure from this area. The Old RSF freeboard has been increased subsequent to the completion of the remedial measures.

Figure 18-15 and Figure 18-16 show the Patising RSF containment wall and basin, and the Old RSF basin, respectively.

Source: SRK (2022)

Figure 18-15: Patising RSF containment wall and basin

Source: SRK (2022)

Figure 18-16: Old RSF basin

18.12 Site Roads

All roads at the mine site are gravel based and are suitably wide for two-way traffic. Roads are in excellent condition and have a good driving surface. Gradients are generally below 10% except in a few steep sections such as the access to the Patising seepage dam. Water trucks are used for dust control in warmer weather, and roundabouts are used at some intersections.

Safety berms are used where required on corners and bends, and where potential drop-offs exist. Berms were observed to be of sufficient height for light vehicles.

The Letšeng Mine undertakes minor repairs and maintenance on the paved access road from the town of Butha Buthe.

19 Market Studies and Contracts

19.1 Diamond Marketing

This section is contributed by Gem Diamonds Marketing Services BV (GDMS), a wholly owned subsidiary of Gem Diamonds Limited based in Antwerp. The information documented herein is up to date as of 31 December 2023.

19.1.1 Marketing Agreement

Letšeng Diamonds' Mining Lease was renewed by the Lesotho Ministry of Mining on 2 October 2019. A parallel Mining Agreement between The Government of the Kingdom of Lesotho, Letšeng Diamonds (Pty) Limited and Gem Diamonds Limited was also concluded on 2 October 2019. In accordance with clause 11 (Marketing of Diamonds) of the Mining Agreement, Letšeng "*shall account for, sort, transport and insure its diamond production. Letšeng shall sell its rough diamonds in recognised international and/or local diamond markets by tender and/or auction, and in accordance with Good Industry Practice, at the highest obtainable market prices, all diamonds produced hereunder in such a way as will be most advantageous to Letšeng, without prejudicing the collection of revenues by the Government and in accordance with procedures and sales agreements approved in advance by the Mines Minister, which approval shall not be unreasonably withheld. Letšeng represents and warrants that the terms of such agreements shall be the most favourable to Letšeng as may then be reasonably obtainable*".

Clause 2.2.24 of the Mining Agreement defines Good Industry Practice as follows:

"**Good Industry Practice**" *means the exercise of the degree of skill, knowledge, expertise, diligence and prudence, which would reasonably and ordinarily be expected from a skilled and experienced diamond mining company complying with all its contractual obligations and all Applicable Laws and engaged in substantially similar activities as those envisaged under this Agreement*.

Letšeng entered into a Diamond Distribution Agreement with GDMS to fulfil the obligations as set out in the Mining Agreement dated 8 August 2011 (and carried in the Mining Agreement dated 2 October 2019).

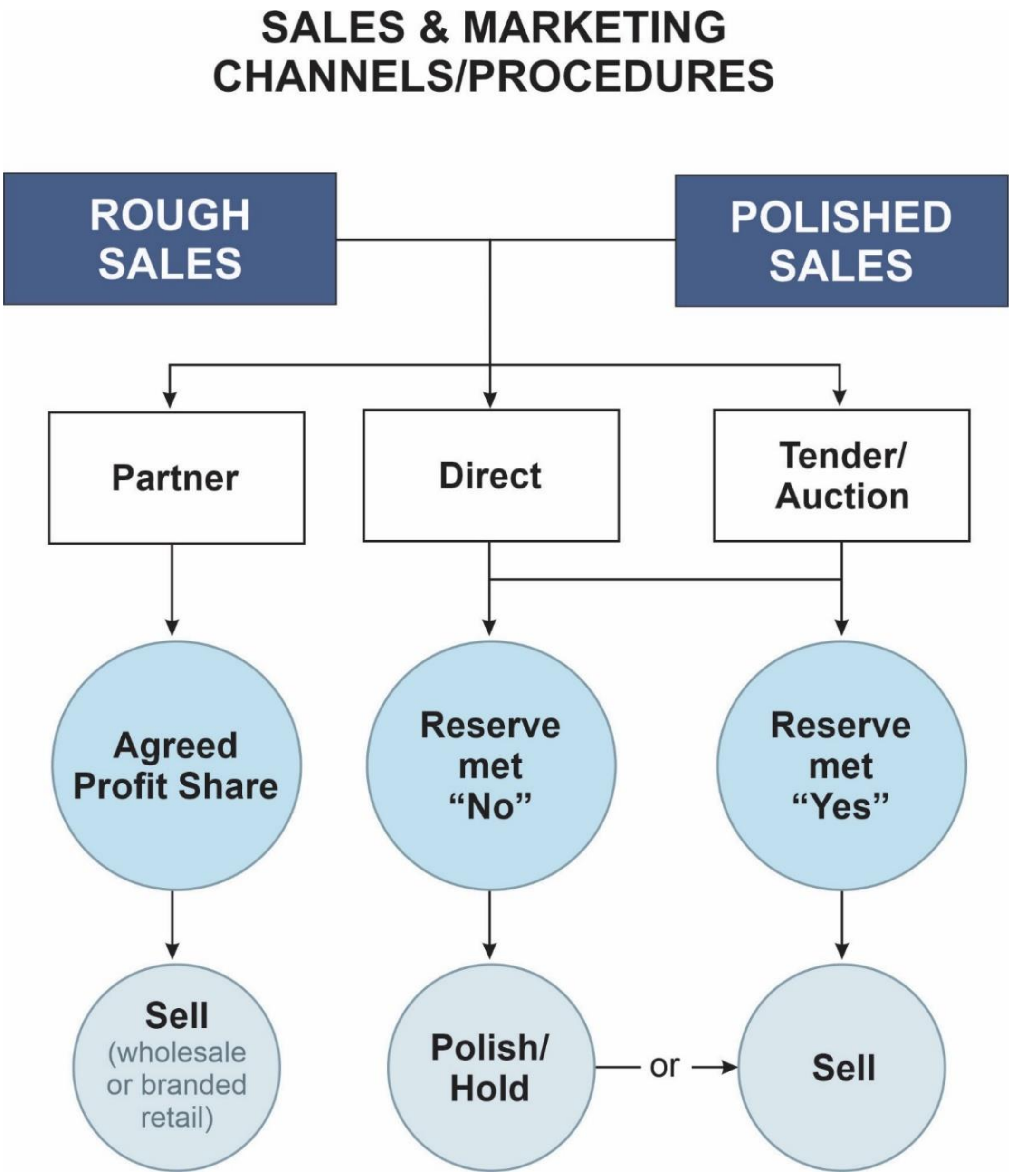
The Commissioner of Mines in Lesotho or his delegate signs off and issues a Kimberley Certificate for each of the eight scheduled annual exports (and any special export in between) from Letšeng to Antwerp.

Baobab Technologies BV (Baobab), another wholly owned subsidiary of Gem Diamonds Limited based in Antwerp, has the knowledge, expertise and technology to study the large, high-quality rough diamonds to assist with determining estimates that are used for reserve prices for the diamonds or parcels thereof on each tender.

Reserve estimates for smaller diamonds are determined by reference to a price book developed by GDMS over many years, based on actual sales prices achieved for such smaller diamonds.

Royalty payments are calculated on the actual sales price achieved during tenders. Royalties were set at 8% of sales prior to 2 October 2019, and at 10% since.

In addition to the tender/auction process described above, Letšeng obtained approval from the Ministry of Natural Resources in January 2011 to market and sell diamonds via direct and partnership channels (Figure 19-1).



Source: GDMS (2024)

Figure 19-1: Sales and marketing channels as of January 2011

Letšeng also obtained approval from the Ministry of Mining in July 2021 to enter into a supply agreement with two important high-value diamond manufacturers to manufacture diamond jewelry specifically for ultra high-end luxury brands, such as Louis Vuitton, Dior, Chanel and Bulgari.

19.1.2 Diamond Sales

Since 2007 more than 1.7 million carats from both the Main and Satellite pipes have been sold for US$3.5 billion at an overall average price of US$1,980 per carat.

Tender lots are prepared by GDMS employees in Antwerp. GDMS' facilities in the Antwerp Diamond Centre are modern, ultra-secure and comprise 14 viewing rooms for use by clients during tenders. Tender lots conform to industry standard size ranges and descriptions and have been consistent since 2011.

Letšeng's production includes a significant proportion of large, high value Type IIa diamonds on a consistent basis and infrequent coloured diamonds (pink, blue and yellow). Diamonds such as these produced at Letšeng are very rare and command a special niche within the rough and polished markets.

Typically, eight large tenders (including the +10.8 carat diamonds, the high value +4.8 carat diamonds and coloured diamonds) and four small tenders (including the <10.8 carat diamonds and larger, but lower-quality goods) are held annually with viewings in Antwerp. In 2018 and 2019 additional viewings were held in Tel Aviv, and in 2021 and 2022 additional viewings were held in Dubai. All 2023 viewings were held in Antwerp. Once all viewings are complete, tenders are automatically closed on the electronic tender platform.

Bidding on tenders is conducted by a custom-designed electronic tender platform. Results are announced at the close of the tender. Invoices are available to the winning bidders on the tender platform to avoid any cybersecurity risks with the emailing of invoices. Payment by each winning bidder is due within five business days and clients can collect their winning parcels or request it to be shipped (for their own account) once the funds are cleared in the bank account of GDMS.

Prospective clients undergo a rigorous "know-your-client" and anti-money laundering vetting process conducted by GDMS before they are onboarded and allowed to register on the electronic platform. Existing clients' information is reviewed from time to time. Clients can only attend tender viewings by invitation, and subsequent confirmation of an appointment for a scheduled time to view the tender goods. The terms and conditions of the GDMS tender are available on the electronic tender platform and clients are required to acknowledge and agree to such terms and conditions every time they log on to the platform.

19.1.3 Diamond Client Base

GDMS has developed a strong, loyal and geographically diverse client base. The tender viewings in Tel Aviv and Dubai also succeeded in securing additional clients. GDMS has in excess of 450 registered, active clients who regularly attend and actively bid on tenders. Using GDMS's electronic tender platform, clients can bid from anywhere in the world. The client bases for the large and small tenders are different, as these clients tend to have specific manufacturing requirements which are vastly different from each other.

19.1.4 Rough Diamond Market Outlook

2023 was a challenging year on a global scale with surging inflation and interest rates in major economies, two international conflicts and a subdued global economic outlook overall. The Israel / Hamas conflict in Gaza was detrimental to the diamond market as Tel Aviv is one of the world's most important diamond trading centres.

In the diamond industry, aggressive overstocking post-COVID led to high inventory levels, resulting in an inevitable oversupply of polished diamonds. As China is an important consumer of polished diamonds, the sluggish growth of its economy contributed to a decrease in demand, which was exacerbated by slow economic growth in other important consumer markets, such as the US and the rest of Asia. Uncertainty around the supply by other large-diamond producers was detrimental to the top end of the diamond market. All of these factors placed severe pressure on rough and polished diamond prices during 2023.

There is no doubt that pressure on the diamond market is expected to persist into early 2024. GDMS are cautiously optimistic that diamond prices will stabilise and anticipate some growth towards the end of 2024, in concert with anticipated decreasing reserve bank interest rates.

The global luxury market continued to grow in 2023 and remains poised to expand further in 2024. The luxury market appears well positioned to cope with economic turbulence, with a larger and more resilient consumer base.

In the medium to long term, rough diamond prices should be supported by favourable demand and supply fundamentals contrasted with a projected decrease in rough diamond supply. This dynamic of rising demand and constrained supply is expected to benefit high-quality rough diamonds in particular.

19.2 Current Contractors and Services

There are 57 contracts reported active at Letšeng Mine providing the following services, in summary:

- Three confidentiality agreements and for the whistleblowing platform;
- Two for medical and paramedic support services;
- Three for health, safety and environment, procurement and payroll information systems and support services;
- One for ISO certification service;
- Four for environmental monitoring services for water, bioremediation and waste management;
- Three for Information Technology support services;
- Two Gem Diamonds support and diamond distribution services (summarised above);
- Four Maseru office rental and sub-leases;
- One for recruitment support services;
- One for Personal Protective Equipment supplies;

- Three for fuel and power supply, rental and maintenance services;
- Two for power saving project;
- Four for blasting and downhole survey services;
- Two for maintenance services;
- Three for Process Plant support services including maintenance, operation, and procurement;
- Two for RSF management and monitoring services;
- One for catering, housekeeping, laundry and accommodation management services;
- Two for rental and operation of Earth Moving Equipment;
- Three for security services;
- Four for banking services comprising a master agreement, and employee benefits; and
- Seven for staff transport services.

As of 1 December 2023, Letšeng Diamonds insourced their mining activities and agreed to a mutual separation with Matekane Mining Investment Company (MMIC), a prime contractor, in order to maintain ethical governance and resolve conflict-related concerns.

Table 19-1 presents the contract services by number of personnel deployed as at 31 December 2023.

Table 19-1: Letšeng contract type and personnel deployed

Contract type	Permanent Staff	Full-time Contractors	Local	Expatriates
Mine Operator	246	7	248	5
General Mine Services	373	18	384	7
Treatment Plant Operations and Maintenance	212	21	232	1
Catering, Housekeeping	192	15	207	0
Tailings/Slimes Operations and Maintenance	39	0	38	1
Explosives Supply and Services	26	0	26	0
Power Generation	21	0	21	0
Health Services	19	1	20	0
Security Services	19	3	22	0
Site Waste Management	8	0	8	0
Blasting Services	2	0	2	0
Paramedic Services	2	0	1	1
Crane Operations	1	0	1	0
Totals	**1160**	**65**	**1210**	**15**

Source: SRK (2024) recompiled from Letšeng Diamonds data as of 31 December 2023

20 Environmental Studies, Permitting and Social or Community Impact

20.1 Permitting Requirements and Status

20.1.1 Permitting Requirements and Status Overview

Permitting and authorisation information is contained in Table 4.2 and summarised in Section 4.4. Additional information pertaining to existing environmental authorisations and management plans is presented below.

20.1.2 Environmental Impact Assessments and Environmental Management Plans

Environmental Impact Assessments (EIA)

The Letšeng Diamonds EIA and EMP were originally approved and granted by the National Environmental Secretariat (NES) in 2004 when under ownership by CAM.

In November 2006, an EMP for construction of process Plant 2 was submitted to the NES by Letšeng Diamonds, which was subsequently approved.

In July 2007, an EIA for new waste rock disposal sites was submitted to the NES. A new EIA for construction of the Patising Valley RSF dam was also prepared in 2007. At the time, the response from the NES indicated that all environmental aspects identified at Letšeng were adequately covered in the existing approved EIA and EMP.

In 2010, the Letšeng Mine EMP was updated to realign with operations and was approved by the Department of Environment (DoE).

Letšeng Diamonds EIA documentation includes:

- De Beers Valley EIA and mitigation assessment amendment to baseline soils land capability rating and pre-mining land use specialist studies for the Letšeng Mine expansion project: Kholo Project (ESS, 2012); and
- Letšeng Mine EIA incorporating expansions under the Kholo Project (ERM, 2013), including specialist studies on air quality, soils and land capability, vegetation, aquatics, avifauna, mammals, geochemistry, hydrology, social and archaeology.

Environmental Management Plans (EMP)

Letšeng Diamonds prepared a suite of management plans in 2013, which informed the 2013 SEMP. These included Integrated Water Management Plan; Integrated Waste Management Plan; Air Quality Management Plan; and Biodiversity Management Plan (ERM, 2013), which have been updated and expanded over the years. For example, GroundTruth (2015) originally produced a Nitrate Management Plan to guide the assessment of management options and strategies for mitigating pollution in catchments. A regional nitrate risk assessment was conducted (GroundTruth, 2020a) and informed the revision of the Nitrate Management Plan (GroundTruth, 2020b), which was updated in 2023 (Letšeng Diamonds, 2023).

The Lesotho Department of Environment approved the renewal of Letšeng Mine operations in July 2015, based on changes to the 2013 SEMP. In subsequent years, SEMPs have been revised in 2016, 2019 and 2022. The 2022 SEMP (Letšeng Diamonds, 2022b) was approved in a Record of Decision by Department of Environment on 16 November 2022 (Lesotho Ministry of Tourism, Environment and Culture, 2022).

20.1.3 Environmental and Social Monitoring

Environmental and Social Monitoring Status

Letšeng Diamonds undertakes regular monitoring relating to environmental and social aspects as set out in the mine's SEMP. The focus areas of the most recent SEMP (Letšeng Diamonds, 2022b) are socio-economic and cultural heritage management, community risk management, general and hazardous waste management, hazardous substances and dangerous goods management, water and mine waste residue management, biodiversity and ecosystem services management, climate change management, and rehabilitation and mine closure.

The 2022 SEMP commits Letšeng to "monitor, measure, analyse and evaluate its performance in compliance with the SEMP" (Commitment No. 1.8). The Environmental Manager is responsible for implementing Letšeng's performance measuring and monitoring procedure as well as Sector Plan No 8: Integrated Monitoring and Reporting. Monitoring data are recorded in databases, monitoring reports and internal audit reports. A monitoring tool is used to track progress on the implementation of the SEMP, which is presented and discussed internally and reported in HSE management review and quarterly review meetings. The Environmental and Social Action Plan (ESAP) and the external audits on SEMP compliance are used to monitor and track performance against the SEMP conditions.

The Annual SEMP Performance Audits (Shangoni, 2022) reviewed monitoring reports and results of measurements against Letšeng's Sector Plan No. 8 on Integrated Monitoring, Auditing and Reporting, which provides for all the aspects to be monitored, measured, analysed and evaluated. Monitoring records relating to groundwater, surface water, pit dewatering, rehabilitation, noise and vibration and dust were provided during the audit. It found that monitoring is being conducted in alignment with the SEMP monitoring and reporting procedure. The auditors also reviewed performance relating to implementation of various plans, procedures and associated monitoring requirements. For example, Letšeng implements a range of procedures relating to waste management such as the integrated waste management procedure and transport, handling and storage of hazardous substances and dangerous goods procedure, which references an associated waste monitoring protocol.

The recent audit (Shangoni, 2023) also reviewed a number of monitoring records and found that monitoring was being conducted as per the mine's approved procedures aligned with the environmental components of the 2022 SEMP. Furthermore, the auditors concluded that the ESAP and the external audits on SEMP compliance are used to track performance against the SEMP conditions.

The Letšeng Annual Environmental Performance Report (Letšeng Diamonds, 2023) also provides feedback on monitoring and reporting activities. In this report, Letšeng confirms ongoing monitoring of aspects including authorisations and permits, topsoil stockpiles, water (surface, groundwater and stormwater), mine waste residue, waste, ambient dust monitoring, rehabilitation trial sites, biodiversity and cultural heritage.

Ground Water, Water Quality and Aquatic Biomonitoring

Letšeng Diamonds conducts ground water and water quality monitoring and maintains detailed documentation. GCS Water and Environmental Consultants (GCS) has prepared annual groundwater quality monitoring reports since 2015. The most recent report was prepared for the period January to December 2022 (GCS, 2023). This report concluded that groundwater quality data in most areas, specifically the Patising RSF, Main Pit, WRD East and down-gradient from the RSF indicate an overall low impact from the mine. Groundwater levels fluctuated significantly at most sites between August and December 2022, which was attributed to rainfall recharge. A Groundwater Quality Monitoring Plan dated September 2022 is appended to the report. This plan sets out monitoring frequency, protocols and methodologies.

GroundTruth Water, Wetlands and Environmental Engineering (GroundTruth) have prepared the biannual water quality monitoring reports for Letšeng Diamonds since 2016. They conducted the routine aquatic biomonitoring (biannual SASS5 monitoring, and quarterly diatom interpretation) between October 2022 to March 2023 (GroundTruth, 2023a) and April to September 2023 (GroundTruth, 2023b) and interpreted monthly surface water chemistry results as per the mine's water quality monitoring protocol.

The 2022/3 biannual report (GroundTruth, 2023a) concluded that while nitrate concentrations are generally still high, the long-term trends in the Qaqa and Patising systems show that average concentrations are on a downward trend. The lower Khubelu system shows a fluctuating trend with sporadic increase in nitrate concentrations especially during the winter dry season, which is driven mostly by the nitrate-rich water from the RTZ system. However, it is important to note that the RTZ system since the end of 2020 has been showing a shift from an increasing trend to a decreasing trend, and this should be closely monitored going forward. Biological results have generally shown an improvement from the 2011 baseline conditions, and the most recent results from that last six months show that almost all of the sites are currently in a good to near-natural condition (GroundTruth, 2023a).

The 2023 biannual report (GroundTruth, 2023b) notes that Letšeng Mine continues to implement management measures to reduce nitrate concentrations in streams informed by specialist studies. Water quality analysis shows that the majority of chemical determinants sampled were within acceptable limit guidelines. Two determinants, namely nitrate and sulphate, exceeded the specified limits at various sites. Metals that exceed limits were aluminum, iron, selenium, mercury and zinc. Monitoring sites on the Patising stream showed good improvement.

Overall, the biannual reports (GroundTruth 2023a and 2023b) found that management of surface water resources requires a holistic and dedicated approach to effectively address water quality issues, of which nitrates are regarded as a parameter of concern. This should include interventions to deal with issues not only at source, but also within the receiving environments through enhancement of ecological infrastructure. As part of Letšeng Diamond's ongoing activities to manage environmental aspects of the mine, and in response to recommendations in previous reports, Letšeng is reportedly in the process of initiating or has already implemented a range of measures, which include a regional nitrate risk assessment (GroundTruth, 2020a) and Nitrate Management Plan (GroundTruth, 2020b), with a planned update in 2023/4. Additional management priorities were identified, namely to continue providing nearby villages such as Phuthalichaba with clean water from the mine, while Patising was provided a drinking water borehole (GroundTruth, 2023b).

Biodiversity and Ecosystem Systems

Letšeng Mine has areas within the lease boundary, but outside the footprint of mine expansions, that are designated as biodiversity protected areas (No-Go areas). These areas are maintained in optimal condition as they form critical refugee area for flora and fauna species. No disturbance is allowed to take place within these areas without prior approval. The total land disturbed in these areas in 2022 is 15.3 hectares due to WRD expansion, ore stockpile expansion and some new infrastructure developments based on the mine operational needs (Letšeng Diamonds, 2023).

Monitoring for avifauna was carried out successfully in 2022. The monitoring results show a positive and stable/increasing trend on total number of species, red data and restricted species over a period of five years of monitoring. Aligned with the Letšeng Diamonds Biodiversity Management Plan, the SEMP (2022) confirms the mine's commitment to pursue biodiversity offsets and strive to achieve no-net-loss of biodiversity.

Public Safety and Health

Letšeng through the SEMP has committed to undertake annual ambient noise and vibration monitoring. A noise and vibration study was conducted by Enaex in March 2023 at Phuthalichaba village and instruments did not trigger due to the low vibration and air blast readings. The mine has continued to implement, maintain and document a primary healthcare outreach project among the Project Affected Communities (PAC) through its health services provider. Medical emergencies that occur along the A1 Road between Mapholaneng and Oxbow continue to be attended to by the mine. Residue storage facilities are being managed in a manner that protects the employees' health and safety, community and the environment. Letšeng has developed and implemented Emergency Response and Evacuation Plans in order to adequately respond to emergencies that can occur on the mine (Letšeng Diamonds, 2023).

Management of Wastes

Letšeng has engaged the services of a waste contractor who manages general waste on site, with close supervision from the Letšeng Environmental Department. Letšeng operates the waste sort area (WSA) in line with a permit obtained from Department of Environment (DoE) and the area has controlled access. Waste reduction initiatives are continuously implemented. Hydrocarbon contaminated soil is treated onsite at a demarcated Soil Treatment Area while other types of waste such as hazardous wastes are removed, transported, and disposed offsite in line with the requirements of a Basel Permit. The management of hazardous substances and dangerous goods is governed by SEMP and is cascaded into the operational activities in the ESAP and various procedures to facilitate the proper management of this element at the operational level. Relevant documentation and permits are audited and kept on record.

The International Review Board continues to implement GISTM with regard to Letšeng's tailings facilities management and provide assurance that all the objectives are met as practicable as possible (Letšeng Diamonds, 2023).

Corporate Social Investment and Stakeholder Engagement

Letšeng Diamonds' Corporate Social Responsibility and Investment (CSRI) Policy is in place. In 2013, Letšeng developed a Corporate Social Investment Strategy (CSIS) (Sehoai Santho, 2013) to guide CSRI, Mokhotlong community projects and stakeholder engagement. Letšeng continues to implement a needs-based CSRI programme through rolling 5-year strategies in areas of infrastructure development, education, health, small-to-medium enterprise (SME) development and regional environmental projects where appropriate.

In terms of the Mine Lease Agreement: 2019, Letšeng Diamonds is required to allocate annually an amount equivalent to M5,000,000 (five million Maloti) or 1% (one percent) of the total dividends declared and paid in the relevant financial year, whichever is the greater, to CSRI projects including educational trust. The objective of the CSRI initiatives is to contribute to better the lives of Basotho by supporting sustainable community-based projects (Letšeng Diamonds, 2023).

The 2022 Sustainability Report (Gem Diamonds, 2022a) indicates that Letšeng focuses on projects that provide the greatest benefits to project-affected communities through continuous engagement and partnerships. SDGs are integrated in decision-making to identify and select projects that will receive support. They focused on the following SDGs: no poverty; good health and well-being; clean water and sanitation; and reduced inequalities. The mine has invested US$ 0.5 M in social projects in 2022 (e.g. water and sanitation project at Ha Moroke, construction of four classrooms at Ntlholohetsane Primary School and the Mapholaneng sanitation and fencing project) and US$ 134.1 M was spent on local procurement. Letšeng established an agricultural skills incubator and continues to integrate climate-related considerations into its corporate social responsibility strategy.

Stakeholder engagement at Letšeng is guided by a stakeholder engagement strategy and implemented through a stakeholder engagement master plan. Engagements with various stakeholders continued as planned in 2022. In 2022, there was only one grievance registered through the established grievance management procedure and this was addressed successfully (Letšeng Diamonds, 2023).

TCFD Roadmap

Gem Diamonds' sustainability strategy embeds United Nations SDG material along with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). The TCFD recommendations and framework were formally adopted by the Board in 2021. The TCFD framework, which is a three-year TCFD adoption roadmap, was completed over three phases. Progress is documented in the 2022 and mid-year 2023 Our Approach to Climate Change reports (Gem Diamonds, 2022b and 2023).

Phase 1 of the Group's TCFD Roadmap established the governance framework, strategy and risk foundations to support science-based decision-making. In 2022, Phase 2 was implemented to understand the climate-related risks being faced and reassess organisational resilience. Climate-related opportunities available to the Group were also identified and clear metrics and targets for decarbonisation established. The Group's internal carbon-pricing model was adopted in 2022, which underpinned its decarbonisation strategy. This model is used as a tool to guide decision-making when assessing climate change impacts, risks and opportunities (Gem Diamonds, 2022b). In 2023, the Group focused on monitoring and managing climate-related exposure and measuring against decarbonisation targets, which formed part of Phase 3. During 2023, the Board adopted a decarbonisation target to reduce its Scope 1 and 2 emissions by 2023 (Gem Diamonds, 2022b). Gem Diamonds' decarbonisation target forms part of the Group's decarbonisation strategy to reduce energy consumption, improve energy efficiency, and transition to renewable energy sources.

Letšeng has committed to setting clear Key Performance Indicators (KPIs) for year-on-year energy-saving initiatives. The KPIs for energy conservation in 2022 were all met (Letšeng Diamonds, 2023).

Gem Diamonds Sustainability

Gem Diamonds has the following Group policies in place: Social Responsibility, Health and Safety, Environmental, Climate Change, Water, Sustainability and Tailings Management. The Group has annually published a Sustainability Report since 2011. The most recent report (Gem Diamonds, 2022a) includes the following aspects: approach to sustainability; business model; working towards global goals; environmental; social; employees; governance and ethics. The report also features questions and answers on a range of pertinent issues with the executive management of the Group.

The 2022 Sustainability Report (Gem Diamonds, 2022a) indicates that there were zero major or significant community accidents, incidents of compromised dam integrity or incidents involving rights violations of indigenous communities.

20.2 Environmental and Social Management and Compliance

20.2.1 Environmental and Social Management and Compliance Overview

Letšeng Diamonds has developed the necessary management system to facilitate compliance with Lesotho legislation and permit conditions. This system is discussed below.

20.2.2 Management System and Structure

The operation has the following management system and structures in place to ensure that permit conditions and commitments are adhered to and mine-induced risks and impacts are mitigated and managed:

- Approved Group policies on environment, sustainability, social responsibility, water, climate change and health and safety dated 2022-2023.

- An integrated health, safety and environmental (HSE) management system comprising relevant polices, plans and procedures. The HSE Management System is compliant with ISO Standards 14001 (2015) and 45001 (2018). The latest surveillance audit was conducted in 2023.
- A dedicated HSE Department comprising an Environmental Manager and Health and Safety Manager is in place. The environmental management team is supported by Environmental Officers and a Land Management and Rehabilitation Officer. This function is responsible for overseeing the environmental management programmes mine wide. The Health and Safety Manager is supported by the Health and Safety Superintendent and HSE Training Officers and a few area-specific Health and Safety Officers.
- A dedicated CSRI and Communications Department reporting to the Chief Executive Officer based in Maseru.
- A programme to regularly monitor and report on the mine's environmental and social management aspects as set out in the approved SEMP.
- Internal and external audits of environmental and social compliance, including annual external audits of the SEMP and the mine's HSE legal compliance.
- Annual reporting for the period January to December on Letšeng Diamond's performance, which reflects risks facing the operation.
- A risk (aspect/impact) register that highlights the key environmental and social risks as well as a legal register of environmental permits.

20.2.3 Environmental and Social Compliance

Letšeng Diamonds undertakes regular internal and external audits to determine compliance with permit conditions relating to environmental aspects, including surface and groundwater, air emissions, noise and vibrations and biodiversity as well as socio-economic and cultural heritage management.

Annual Environmental Management Performance Report

Letšeng prepares annual environmental performance reports for submission to the Department of Environment. The 2022 Annual Environmental Performance Report documents aspects of: environmental planning and implementation; legal compliance and audits; incidents and non-conformances; socio-economic and cultural heritage management; public safety and health; waste management; hazardous substances and dangerous goods management; water and mine waste residue management; energy; climate change and air quality; soils land use and land capability; biodiversity and ecosystem services; noise and vibrations; and new developments/projects.

Reporting of environmental incidents declined in 2022 (290 incidents) compared to 2021 (521 incidents). There were no significant or major environmental incidents reported in 2022. Investigations were conducted for most of the incidents using a risk-based approach and corrective actions were implemented. Overall, trends indicate long-term continual improvement of the environmental management system (Letšeng Diamonds, 2023).

Annual External SEMP Compliance Audit

The external SEMP audit has been undertaken annually since 2017. The 2021 audit found a high level of compliance with SEMP conditions (Shangoni, 2022). One of the main areas of non-compliance related to seepage from waste rock dumps and overflows from dirty water containment facilities resulting in high nitrate and sulphate concentrations in the surface water environment.

In November 2023, an audit was conducted by reviewing compliance with conditions from the 2022 SEMP (Shangoni, 2023). In addition to assessing the conformance to commitments and conditions, the adequacy of the information was also assessed through evaluating site activities and verifying such against the descriptions and risk assessment provided in the SEMP. A high level of conformance to the SEMP conditions was observed during the audit site visit, with only one non-conformance finding regarding the ground water quality being made and a few areas for improvement identified.

The audit found that of the four surface water resources that drain from the mine lease area (i.e. Mokoalibane, Patising, Qaqa and RTZ streams) only Mokoalibane is compliant with the adopted water quality standards. The Patising stream is partially compliant and Qaqa and RTZ streams are non-compliant, with water entering the environment through seepage. The SEMP indicates that “all surface water seepage from the mine lease meets appropriate standards adopted by Letšeng”. As Lesotho does not currently have gazetted discharged water quality standards, Letšeng adopted the South African surface water quality standards as a guideline.

Mine Health, Safety and Environmental Legal Compliance Audits

Letšeng commissions external mine HSE legal compliance audits annually. These audits cover aspects including gaps in operational control in terms of statutory compliance, confirmation that the management system is designed to achieve the organisation’s policy objectives in terms of compliance to statutory requirements, and provides feedback to the organisation to facilitate improvement. Documentary evidence exists for audits between 2015 and 2023.

The most recent audit found that Letšeng Diamonds has implemented the legal arrangements necessary to satisfy the requirements of the HSE directives set by the legislator (RMI Legal Services, 2023). The auditors were of the opinion that Letšeng has demonstrated a strong commitment to promoting a culture of health and safety and sound environmental management.

Lesotho is a signatory of the Basel Convention, managing the cross-border disposal of hazardous and other waste. Approval for cross-border transport of oil, lead acid batteries and e-waste needs to be obtained from both the South African and Lesotho governments. Letšeng has however not obtained the appropriate approval from the competent authority in Lesotho prior to the transfer of hazardous substances (lead acid batteries) to South Africa (RMI Legal Services, 2023).

ISO 14001:2015 and ISO 45001:2018 audits

Letšeng conducts external audits of the ISO 14001:2015 and ISO 45001:2018 management systems to verify the effective implementation and identify corrective actions to fulfil the requirements of the applied standards across various aspects of the operation.

A surveillance audit was undertaken in August 2023 and concluded that existing certificates can be maintained. The ISO 14001:2015 management system was found to be mostly effective and fulfills the requirements of the applied standard(s), except for identified non-conformities that would be subject to corrective actions. Non-conformities included weaknesses regarding storage of hazardous waste, signage and record-keeping for chemical stores. Action plans were submitted to the auditors and the corrective actions were accepted, leading to maintaining of the certification. The audit further found that the ISO 45001:2018 management system is fully effective and fulfills the requirements of the applied standard(s) and no non-conformities were identified (DQS, 2023).

20.3 Letšeng Diamonds Mine Closure and Rehabilitation

Letšeng Diamonds updates its Integrated Rehabilitation and Closure Plan every three years and the mine closure liability estimates are reviewed annually. The Letšeng closure liability update was conducted by E-TEK Consulting Environmental Engineers (E-TEK) for the FY2023 as part of a 3-yearly update of the closure plan (E-TEK, 2023). This integrated closure planning process ensures a more accurate closure liability figure due to intensive processes that involve onsite investigations, workshops and meetings with management from both Gem Diamonds and Letšeng.

The Basis of Estimate Closure Liability Update FY2023, which has been approved and submitted to the Ministry of Mining as per Mining Lease Agreement requirements, includes:

- Closure components covering infrastructure, mining aspects, biophysical, social and general;
- Closure cost estimation procedure and methodology;
- Level of accuracy;
- General and site-specific assumptions;
- Aspects requiring additional actions; and
- Closure criteria.

The closure liability update for Letšeng (excluding P&Gs and Contingencies) has been estimated as follows:

- Premature Closure estimate - Year 1 (2023) - LSL 284,03 million;
- Closure Forecast estimate - Year 2 (2024) - LSL 280,30 million;
- Closure Forecast estimate - Year 3 (2025) - LSL 254,48 million;
- Closure Forecast estimate - Year 4 (2026) - LSL 239,42 million;
- Closure Forecast estimate - Year 5 (2027) - LSL 235,10 million; and
- LOM Closure estimate (2038) - LSL 148,51 million.

The report concludes that if closure measures are implemented as envisaged, the reflected costs provide good indication of the costs for the closure situations as calculated and should provide a good basis for making the required financial provision. The closure costs calculated will only be applicable to closure situations and do not cater for operational closure as this will require higher allowances.

Letšeng Mine is considering opportunities for concurrent rehabilitation during the operational phase on the waste rock dump, and fine and coarse residue storage facilities. These commitments and opportunities were taken into account in the liability and will affect the LOM closure liability should these obligations not be met. Based on the gap analysis undertaken as part of the detailed Rehabilitation and Closure Criteria sheets, a master action plan was developed for further / additional action that should be integrated into the closure planning process (E-TEK, 2023).

21 Capital and Operating Cost Estimates

SRK QPs' conducted various meetings with Letšeng Management to review both capital and operating costs related to the production supported by the reserves disclosed herein, which give a LOM from 2024 to 2037. Capital and operating costs are based on a specific budget prepared by Letšeng and reviewed by the QP for each month of production.

This section presents the capital and operating cost estimates for the mine and the assumptions used in their preparation.

21.1 Capital Costs

21.1.1 Basis of Capital Cost Estimate

The Letšeng Mine is currently an operating open pit diamond mine and therefore the estimate of capital includes only sustaining capital to maintain the equipment and all supporting infrastructure necessary to continue operations until the end of the projected production schedule.

All costs are presented in U.S. dollars (US$) unless otherwise indicated. The estimate has been prepared based on an exchange rate of LSL18.29/US$.

The base date of all estimates is the last quarter of calendar year 2023 (Q4 2023). No allowance has been included in the estimates for escalation beyond this date or for foreign exchange fluctuations.

The capital cost estimates in this report have an overall accuracy range of -10% to +15% for their scope.

Indirect costs have been factored from the direct costs, using percentages established from historical cost data performance at the mine.

21.1.2 Sustaining Capital Cost Estimate

The capital cost estimates developed for this study are based on budgetary estimates prepared by Letšeng and reviewed by the QP. All estimates are prepared from first principles or on recent site-specific actuals.

The budget and estimate indicate that the Letšeng Mine requires LOM sustaining capital of US$ 76.9 M based on the current production schedule/reserves.

Table 22-1 summarises the sustaining capital estimate.

Table 21-1: LOM sustaining capital cost estimate summary

Description	US$ 000s
Mining equipment	51,613
Closure cost	12,000
Processing plant equipment and tailings management	11,358
Information technology	668
Environment	535
Engineering	382
Finance	301
Total	**76,857**

Source: Letšeng (2024)

Totals do not necessarily equal the sum of the components due to rounding adjustments.

21.2 Operating Costs

The operating cost estimate is broken down by area including mining, processing and Other/ General and administration (G&A). The processing and G&A operating costs were estimated by Letšeng based on historical cost data and a cost reduction program developed by Letšeng in 2023 and have been reviewed by the QP. The operating costs are reported in US$.

21.2.1 Cost Reduction Program

In 2023, the mine initiated a cost reduction program that resulted in decreased operating costs in Q4 2023, and the program is expected to reduce operating costs in 2024 and beyond. The key drivers behind Letšeng's cost reduction program are a reduced reliance on the use of contractors, increasing process plant throughput by 6%, aligning headcount to operational requirements, and an across-the-board spending reduction of 19%.

The mine's objective is to reduce the unit cost of processed tonnes by 25% from 2024 onwards. The plan to improve the process plants' throughput will require an increase in overall utilization to 82.5% and a rate per tonne treated of 750 tph. The QP has reviewed these cost reduction initiatives and believes that they are realistic and achievable.

21.2.2 Operating Cost Summary

Table 21-2 shows the operating cost summary by major area, which amounts to US$20.80/t treated over the LOM.

Table 21-2: LOM site operating cost estimate summary (per tonne treated)

Item	Unit	Operating Cost
Mining	US$/t treated	11.41
Treatment	US$/t treated	4.81
Other / G&A	US$/t treated	4.58
Total	**US$/t treated**	**20.80**

Source: Letšeng, 2024
Totals do not necessarily equal the sum of the components due to rounding adjustments.

Table 21-3 shows the estimated total site operating costs for the LOM.

Table 21-3: LOM site operating cost estimate summary

Item	Operating Cost (US$ 000s)
Mining	715,670
Processing	301,401
Other / G&A	287,024
Total	**1,304,096**

Source: Letšeng, 2024
Totals do not necessarily equal the sum of the components due to rounding adjustments.

Table 21-4 shows the LOM total site operating costs by year.

Table 21-4: LOM total site operating costs by year

Year	Operating Cost (US$ 000s)
2024	91,579
2025	102,900
2026	116,584
2027	127,180
2028	129,977
2029	132,713
2030	130,471
2031	104,345
2032	77,472
2033	74,655
2034	73,071
2035	71,532
2036	70,098
2037	1,519
Total	**1,304,096**

Source: Letšeng, 2024
Totals do not necessarily equal the sum of the components due to rounding adjustments.

21.2.3 Mining Operating Costs

Mine operating cost estimates are summarised in Table 21-5.

Table 21-5: LOM mining operating costs

Operating costs	US$ 000s	$/t treated
Owner costs	190,104	3.03
Ore drilling	20,803	0.33
Ore blasting	38,841	0.62
Ore load, haul and dump	186,169	2.97
Waste drilling	17,205	0.27
Waste blasting	30,048	0.48
Waste load, haul and dump	232,500	3.71
Total	**715,668**	**11.41**

Source: Letšeng, 2024
Totals do not necessarily equal the sum of the components due to rounding adjustments.

21.2.4 Process Plant Operating Costs

Process plant operating cost estimates are summarised in Table 21-6.

Table 21-6: LOM process plant operating costs

Category	US$ 000s	$/t treated
Variable		
Power and diesel	96,551	1.54
Consumables	15,743	0.25
Plant equipment maintenance	35,535	0.57
Fixed		
Wages and salaries	14,671	0.23
Plant operator contract costs	106,322	1.7
Other fixed costs	32,580	0.52
Total	**301,402**	**4.81**

Source: Letšeng, 2024
Totals do not necessarily equal the sum of the components due to rounding adjustments.

21.2.5 G&A Operating Costs

The G&A operating costs were estimated to be $4.58/t by Letšeng based on historical cost data and a cost reduction program developed by Letšeng in 2023 and have been reviewed by the QP.

G&A operating cost estimates are summarised in Table 21-7.

Table 21-7: LOM general and administration operating costs

G&A	US$ 000s	$/t treated
Finance and IT and senior management	101,494	1.62
Human resources	11,642	0.19
Security	22,256	0.35
Health, safety and environment	21,573	0.34
Engineering and general maintenance	59,128	0.94
Catering and housekeeping	54,471	0.87
Corporate governance	11,127	0.18
Communications	102	0
CSRI	5,231	0.08
Total	**287,024**	**4.58**

Source: Letšeng, 2024

Totals do not necessarily equal the sum of the components due to rounding adjustments.

22 Economic Analysis

22.1 Summary

SRK has conducted an economic assessment of the Letšeng Mine. Over a remaining 13-year operating life and an average LOM production rate of 5.3 Mtpa (4.8 Mtpa on a Dry Basis), the mine is projected to generate approximately US$ 65.8 M pre-tax net present value (NPV) and US$ 42.0 M after-tax NPV at an 8% discount rate, with a pre-tax internal rate of return (IRR) of 25.0% and an after-tax IRR of 16.8%. Sustaining capital is estimated at US$ 76.9 M.

The economic analysis used cost and production data that were supplied by Letšeng Diamonds and reviewed by the QP as described in previous sections of this report. The production physicals were based on Letšeng's production schedule "Schedule 10" as provided to SRK on 20 February 2024. Key assumptions and results of the economic assessment are provided in Table 22-1 and yearly production data are shown in Table 22-2.

Table 22-1: Estimated LOM economic evaluation summary

Description	Value	Unit
Mine Life	13	Years
Market Prices (LOM Average)		
Diamond – Main Pipe	1,282	$US/carat
Diamond – Satellite Pipe	2,115	$US/carat
Diamond (site average)	1,532	$US/carat
Mine Production		
Ore (wet tonnes)	71	M tonnes
Ore (dry tonnes)	64.6	M tonnes
Waste	137	M tonnes
Treatment		
Ore (dry tonnes)	62.7	M tonnes
Diamond Production		
Main Pipe	812.9	k carats
Satellite Pipe	350.2	k carats
Total	**1,163.10**	**k carats**
Net Sales		
Sales	1,782.30	$US M
Gross Revenue		
Selling and Marketing Costs	26.7	$US M
Government Royalties	178.2	$US M
Gross Revenue After Selling and Marketing Costs and Government Royalties	**1,577.40**	**$US M**
Operating Costs		
Mine	715.7	$US M
Treatment	301.4	$US M
G&A	287	$US M
Total Operating Costs	**1,304.10**	**$US M**
Operating Cash Flow	**273.3**	**$US M**
Sustaining Capital Costs	**76.9**	**$US M**
Pre-tax Cumulative Cash Flow	**196.3**	**$US M**
Income Taxes	**44.8**	**$US M**
After-tax Cumulative Cash Flow	**151.6**	**$US M**
Discounted Cash Flow (Net Present Value)		
NPV @8% (pre-tax)	**65.8**	**$US M**
NPV @8% (after-tax)	**42**	**$US M**

Source: SRK (2024)

Totals do not necessarily equal the sum of the components due to rounding adjustments.

Table 22-2: Annual production schedule

		Total	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
MINE PRODUCTION																
Waste mined	k tonnes	136 963	8 972	12 925	18 183	21 177	21 058	21 244	19 520	10 191	2 000	1 038	452	186	18	-
Ore mined	k tonnes	64 568	4 700	5 014	5 151	5 205	5 140	4 938	4 946	4 880	4 915	4 920	4 915	4 898	4 881	66
Total waste and ore mined	k tonnes	207 251	14 137	18 435	23 843	26 897	26 706	26 670	24 955	15 553	6 734	6 445	5 853	5 569	5 381	72
Strip ratio	w:o	2.12	1.91	2.58	3.53	4.07	4.10	4.30	3.95	2.09	0.41	0.21	0.09	0.04	0.00	-
ORE PROCESSED																
Dry tonnes processed *	k tonnes	62 698	4 585	4 776	4 843	4 843	4 843	4 843	4 843	4 843	4 843	4 843	4 843	4 843	4 843	66
Grade	cpht	1.86	2.01	1.78	1.58	1.64	1.61	1.64	1.76	2.04	2.05	2.07	2.16	2.10	1.68	1.60
Carats recovered	k carats	1 163.1	92.3	85.0	76.7	79.6	77.8	79.4	85.2	99.0	99.3	100.4	104.6	101.6	81.3	1.0
CARATS RECOVERED																
Satellite																
NVK	k carats	74.4	8.9	5.1	-	-	-	-	0.5	10.9	17.5	10.0	11.8	9.8	-	-
SVK	k carats	136.6	8.6	2.8	-	-	-	-	5.4	28.2	20.0	24.5	24.4	22.7	-	-
GVK	k carats	61.1	12.0	4.3	-	-	-	-	-	5.0	11.0	7.1	8.7	12.9	-	-
GVK-SVK Mixed	k carats	51.7	17.3	10.7	-	-	-	-	0.0	1.4	1.7	8.8	5.1	6.7	-	-
Kimb7	k carats	26.4	2.4	0.0	-	-	-	-	1.1	6.3	4.1	5.0	5.0	2.6	-	-
Main																
K1A	k carats	151.7	22.2	22.6	15.4	11.7	10.7	13.9	10.0	3.2	7.2	10.5	5.7	4.2	14.2	0.2
K1B	k carats	234.4	13.8	20.4	31.9	36.6	37.6	31.0	14.7	5.0	4.3	8.4	4.9	7.2	18.4	0.1
K1C	k carats	16.0	0.5	2.7	4.5	1.3	0.7	1.2	0.0	0.2	0.5	0.5	0.4	0.6	2.7	0.1
K2	k carats	279.6	6.7	16.3	24.5	21.7	24.8	24.3	33.6	20.9	21.4	13.6	13.9	23.1	34.1	0.7
K6	k carats	131.2	-	-	0.4	8.2	3.9	8.9	20.0	17.9	11.5	12.0	24.5	11.9	11.9	-
Total Carats Recovered	k carats	1 163.1	92.3	85.0	76.7	79.6	77.8	79.4	85.2	99.0	99.3	100.4	104.6	101.6	81.3	1.0

** dry tonnes to wet tonnes conversion: dry/0.91*

Source: SRK (2024)

22.2 Methodology

Project economics were evaluated using an end of year discounted cash flow (DCF) method. The DCF method requires that annual estimated cash inflows and outflows be converted to equivalent dollars in the year of evaluation. Considerations for this analysis include the following:

- The cash flow model was prepared by SRK with input from Letšeng on taxes and on a cash basis;
- Diamond recoveries are assumed as constant on LOM Plan;
- All cash flow amounts are in US dollars (US$);
- All costs are based on a Q4 2023 base date;
- Inflation is not considered in this model;
- The IRR is calculated as the discount rate that yields a NPV of zero;
- The NPV is calculated by converting annualised cash streams to start of project (2024) at different discount factors. All cash flows are assumed to occur at the end of each respective year;
- The Foreign Exchange (FX) rate used is 18.29 ZAR: USD for all years;
- 100% ownership financing is assumed; and
- Sustaining Capital, Reclamation and Closure costs are included in the model.

The economic analysis is performed on a before and after-tax basis in constant dollar terms, with the cash flows estimated on a project basis.

22.3 General Assumptions

A description of the general assumptions for cost and revenue inputs, parameters, royalties, and taxes used in the economic analysis are included in the following subsections.

22.3.1 Project Timing

Letšeng Mine is currently an operating open pit mining operation and the financial analysis in this technical report is based on an effective date of 31 December 2023.

22.3.2 Prices and Revenues

Base (end of year 2023) diamond prices and a real price escalation were provided by Letšeng and reviewed by the QP. No real price escalation was applied from 2029 onwards. Section 15 provides further details regarding the diamond prices used in this economic analysis.

Table 22-3: Price escalation by year (Base Case)

Unit	2024	2025	2026	2027	2028	2029+
%	0.5	0.5	1	1.5	2	0

Source: Letšeng, 2024

The revenue from the diamonds recovered in the treatment plants is assumed to be realised in the year the ore was processed.

22.3.3 Estimated Operating Costs

Operating costs were developed on an annual basis based on the production schedule and other operating parameters. The LOM average operating costs per tonne of ore treated (on a dry basis) are: $11.41/tonne for mining, $4.81/tonne for treatment and $4.58/tonne for Other/G&A, for a total average site operating cost of $20.80/tonne. The specific annual operating costs as applied to the cash flow model are presented in Section 21.

22.3.4 Estimated Capital Costs

The distribution of the estimated LOM sustaining capital costs is shown in Table 22-4.

Table 22-4: Estimated LOM sustaining capital cost summary

Description	US$ 000s
Mining equipment	51,613
Closure cost	12,000
Treatment plant equipment and tailings management	11,358
Information technology	668
Environment	535
Engineering	382
Finance	301
Total	**76,857**

Source: SRK (2024)

Note: Totals do not necessarily equal the sum of the components due to rounding.

22.3.5 Royalties and Taxation

The Lesotho Government has various taxes, duties and levies that may be applicable to mining operations depending on profit margin established at the time of exploitation and laws applicable at the time. Some of the taxes, duties and fees that could be applicable are listed in Table 22-5.

Table 22-5: Royalties and taxation

Royalties and taxation	Unit	Value
Government royalty	%	10
Corporate taxation	%	25

Source: SRK (2024)

22.3.6 Reclamation and Closure Costs

Letšeng Diamonds updates its Integrated Rehabilitation and Closure Plan every three years and the mine closure liability estimates are reviewed annually. Letšeng's closure liability update was conducted by E-TEK Consulting Environmental Engineers for FY2023 (E-TEK, 2023). An allowance of $12 M was included in the economic analysis for mine closure and reclamation.

22.4 Financial Model and Results

A DCF method was used to evaluate the economics of the Letšeng Mine. The DCF method measures the NPV of future cash flow streams. This financial model has been developed by SRK with input from Letšeng for the taxation.

The key financial parameters derived from the cash flow analysis are:

- Discount rate of 8%;
- LOM average diamond grade of 1.86 cpht for both pits combined;
- A 10% government royalty based on gross sales revenue;
- Corporate tax rate of 25.0%; and
- Numbers are presented on a 100% ownership basis and do not include financing costs.

The after-tax NPV (8%) for the project is estimated to be US$ 42.0 M.

22.5 Sensitivity Analysis

A sensitivity analysis was performed to analyse the impact of change on the main drivers: diamond grade; mining, treatment, and Other/G&A operating costs (opex); sustaining capital costs (capex); exchange rate and diamond prices.

An additional sensitivity analysis was performed to determine the impact of the change on after-tax NPV (8%) using different diamond price escalation scenarios.

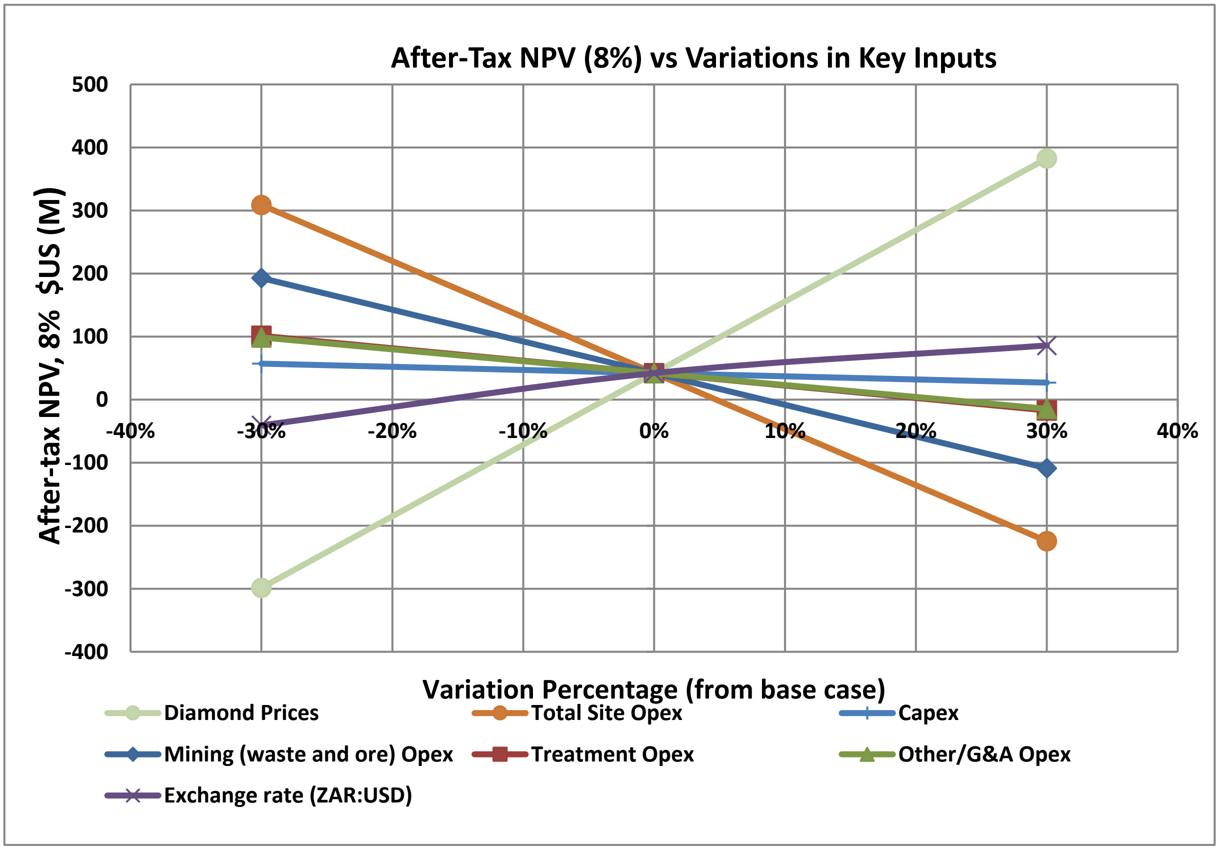
The sensitivities are based on +/- 30% of the base case value. The after-tax sensitivity analysis is presented in Table 22-6, and in Figure 22-1 and Figure 22-2.

The sensitivity analysis indicates that although the project has positive economics, it is highly sensitive to changes in the diamond price. A 10% increase in the diamond prices increases the after-tax NPV (8%) to US$ 155.6 M, whereas a 10% decrease in diamond prices makes the project uneconomic. The project is also very sensitive to total site opex and mining opex, and moderately sensitive to changes in the ZAR:USD exchange rate, treatment, and Other/G&A opex. The project is relatively insensitive to changes in capex.

Table 22-6: Sensitivity analysis – after-tax NPV (8%) (US$ M)

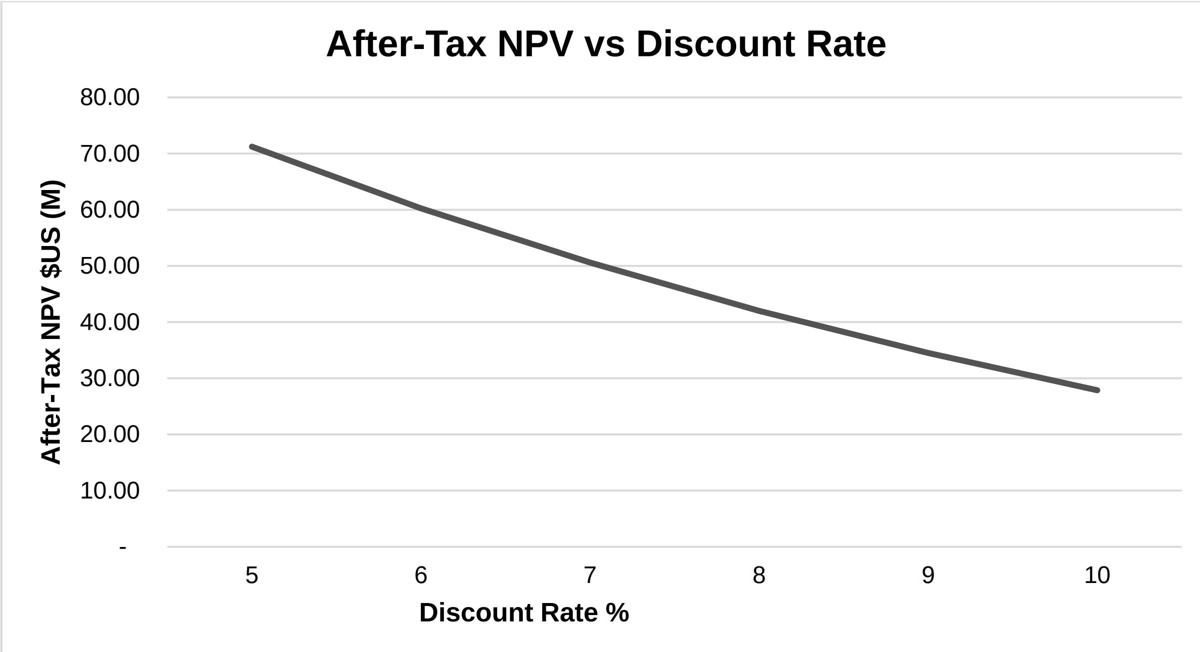
	After-tax NPV (8%) US$ (M)						
Sensitivity	**-30%**	**-20%**	**-10%**	**0%**	**10%**	**20%**	**30%**
Mining Opex	192.9	142.6	92.3	42	-8.2	-58.5	-108.8
Treatment Opex	101.2	81.5	61.8	42	22.3	2.6	-17.2
Other/G&A Opex	98.7	79.8	60.9	42	23.2	4.3	-14.6
Total Site Opex	308.7	219.8	130.9	42	-46.8	-135.7	-224.6
Capex	57.1	52.1	47.1	42	37	32	27
Diamond Prices	-298.6	-185	-71.5	42	155.6	269.1	382.7
Exchange rate (ZAR: USD)	-40.8	-13.2	14.4	42	56.7	71.3	85.9

Source: SRK (2024)



Source: SRK (2024)

Figure 22-1: Sensitivity analysis of after-tax NPV (8%) vs variations in key inputs



Source: SRK (2024)

Figure 22-2: Sensitivity of after-tax NPV vs discount rate

Additional sensitivity analysis was performed to determine the impact of the change on after-tax NPV (8%) using different diamond price escalation scenarios. Table 22-7 shows the different diamond price escalation scenarios that were evaluated and how sensitive project NPV is to each scenario.

Table 22-7: Sensitivity of after-tax NPV vs select diamond price escalation scenarios

	Diamond Price Escalation						
Scenario	**After-tax NPV (8%) $US (M)**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029-2037**
FS Base Case	42	0.00%	0.50%	1.00%	1.50%	2.00%	0.00%
#1	69.7	0.00%	0.50%	1.00%	1.50%	2.00%	1.00%
#2	4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
#3	152	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

23 Adjacent Properties

The adjacent properties reported are five diamond properties located approximately 5 to 30 km west of the Letšeng Mine (Figure 23-1). The kimberlites comprise part of the northwest-southeast trending Lemphane – Robert kimberlite belt (e.g., Rapopo, 2017; Ward, Bowen and Fourie, 2017) in which the kimberlite pipes are associated with an extensive kimberlite dyke swarm.

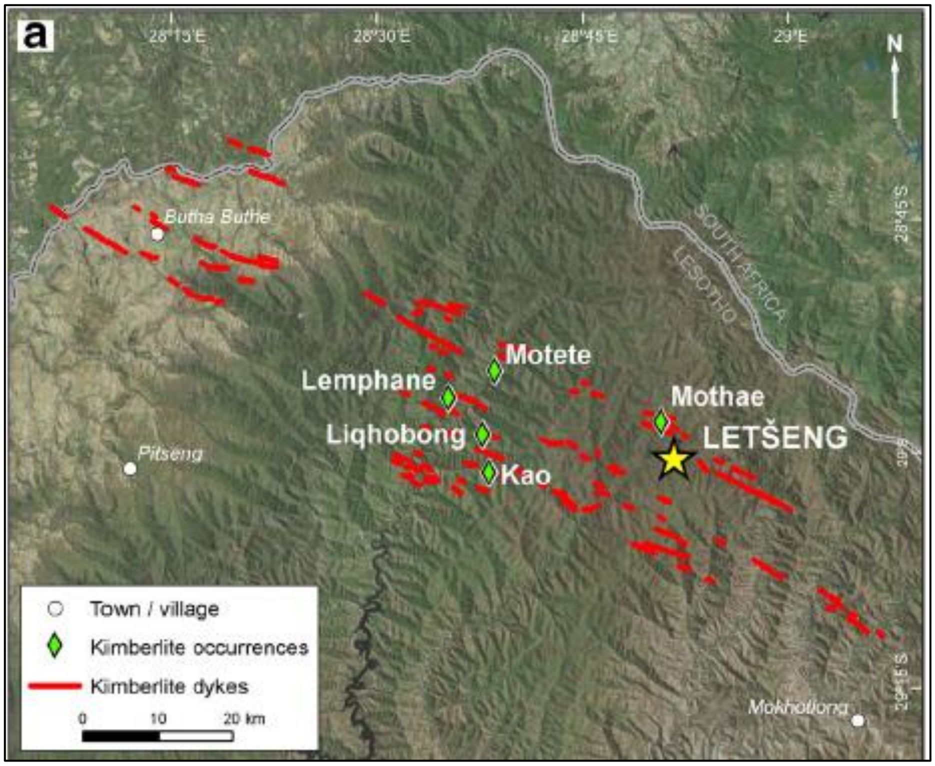
Three diamond properties are reported being active mines:

- Mothae Diamond Mine (active): operated by Mothae Diamonds (Pty) Ltd (Lucapa Diamond Company Ltd and Government of Lesotho).
- Kao Diamond Mine (active): operated by Storm Mountain Diamonds (Pty) Ltd (Namakwa Diamonds Ltd and Government of Lesotho).
- Liqhobong Diamond Mine (active): operated by Liqhobong Mining Development Company (Pty) Ltd (Firestone Diamonds plc and Government of Lesotho).

Two diamond properties are reported being in development and exploration stages:

- Lemphane diamond resource (development): Letlaka Mining Group (Paragon Diamonds Ltd).
- Motete dyke diamond resource (exploration): Northern Fissures (Pty) Ltd Lesotho (British Virgin Islands based enterprises).

The QP has been unable to verify the information presented for these properties and notes that the information is not necessarily indicative of the mineralisation on the Letšeng Mine property.



Source: Hetman et al. (2018)

Figure 23-1: Locations of diamond mines and projects adjacent to Letšeng Mine

24 Other Relevant Data and Information

The authors of this Technical Report have ensured that all relevant scientific and technical information has been disclosed in the appropriate sections of the report. The data and information presented in this Technical Report is, to the best of the authors' knowledge, complete and accurate as of the effective date of the report.

25 Interpretation and Conclusions

25.1 Geology

A considerable amount of pit mapping, diamond drilling, geological logging, petrographic work, and quantitative measurements of various components/parameters has been undertaken at Letšeng in support of kimberlite geology development, resulting in relatively high confidence geological models and the recognition of new kimberlite units and domains not previously identified. The production results align well with the new geological domains that have been established for both pipes.

The QP is of the opinion that the drilling, geological sampling, and analytical work completed in support of the geology development of the Main and Satellite Pipes is representative in the areas of the bodies classified at an Indicated level. Drilling and sampling were completed using standard industry practices. The updated 3D geological models for both pipes comprise several new kimberlite domains that are characterised by different diamond contents, as confirmed by production and sampling data.

The geology development at Letšeng is challenging because many of the standard tools typically used to discriminate different kimberlite units and demonstrate geological continuity within geological domains are ineffective. Specifically, microdiamonds and groundmass spinel compositional data were ineffective in differentiating different kimberlite phases. The comprehensive systematic petrographic investigation of drill core samples (polished slabs and thin sections) combined with pit mapping proved to be the most useful of the various studies. The various kimberlite units display contrasting petrographic features and variations in the juvenile components and the xenolith populations which aid in identification. The polished slabs were instrumental in defining phase boundaries and confirming the continuity of geology within the geological domains.

The density and spatial distribution of drill holes is sparse outside of the zones classified at Indicated and Inferred levels. Due to the complex geology and presence of new kimberlite types at depth in both pipes, the geology established in the Indicated and Inferred zones cannot be projected further to depth without additional drilling and sampling. The geological models will evolve as additional drilling and pit mapping are completed.

25.2 Mineral Resource Estimate

The QP notes that the mineral resource estimate is based on robust geology models developed following multiple phases of drilling and sampling by Letšeng. The grade and diamond values for the various geology domains have been established from several years of production data and diamond sales. Microdiamond data was not utilised in the estimation process because the Letšeng rocks are characterized by extremely low microdiamond counts.

25.3 Mineral Processing and Metallurgical Testing

Through knowledge gained from all the historical sampling for supporting mineral resource estimation work, metallurgical test work, plant operations and historical ODS, the mine has acquired extensive experience regarding the metallurgical qualities and behaviour of the run-of-mine ore in the process plants. It is therefore not anticipated that the reserved in the LOM Plan will behave significantly differently and cause complications in the various plant unit processes. The historical operating data and diamond recovery results give the best indication of the effectiveness of the existing plant design, supported by the prevailing site operational practices and production plans. The current drive to minimise diamond damage to large stones is imperative and will go a long way to maximizing value, thus potentially improving the revenue for the mine.

25.4 Mineral Reserve Estimate

The Letšeng mineral reserves can support the profitable mining of the two open pits. The mineral reserve is estimated using the latest mineral resources and updated designs as presented in this report. Letšeng contains 63.2 Mt of Probable reserves at an average grade of 1.85 cpht. The mineral reserve comprises three sources: the Main Pipe, the Satellite Pipe and the kimberlites stockpiles as of 31 December 2023.

25.5 Mining Methods

The Letšeng mine is a traditional open pit, truck-excavator, owner-based operation. It employs a mixed fleet of 100-tonne rigid trucks and 45-tonne articulated trucks with matching excavators. Ore and waste are mined in 14 m high benches.

The mine life is about 13 years with a LOM average ore production rate of approximately 5.3 Mtpa (4.8 Mtpa on a Dry Basis). The total mining capacity varies by year and the mining fleet capacity at peak (years 4 to 7) reaches a maximum of 26 Mtpa.

25.5.1 Hydrogeology and Hydrology

The hydraulic gradient for the deeper regional aquifer has been dewatered to the north supported by the observation that the depressurisation holes drilled into the northern wall were dry and only shallow seepage from the historic RSF seeps into the higher walls of the Satellite Pit, as indicated by the hydrochemistry results. The outflows from the BH10, BH08 and BH07 implies that a steeper hydraulic gradient persists south of the Satellite Pit with the shear zone creating a zone of relaxation due to higher permeability and the section between the shear sone and open pit being slightly dewatered due to the depressurisation from the outflows over time. The drilled depressurisation holes indicated this possible zone of relaxation due to different pressures and outflows at different drilling intervals into the southern wall. There may be a shallow seepage component from the waste rock dumps south of the Satellite pit that may link up with the increased hydraulic head to the south (Knight Piésold, 2023).

25.5.2 Geotechnical

The Letšeng Geotechnical Model comprises two primary geotechnical domains based on lithology, namely the basalts and the kimberlites. The main basalt domain has been further sub-divided into different geotechnical sectors (or pit design sectors) based on litho-structural setting, major geological structures, and contact zones, rockmass fabric (i.e., jointing) and pit slope geometry and orientation.

Several geotechnical design studies have been carried out in optimisation of the pit slopes, which has resulted in significant steepening of inter ramp multi bench stacks in both the basalts and kimberlites in the current LOM plan. The design reviews generally concur that the slope designs adopted are very aggressive, and leaves little (if any) room to manoeuvre if – for example:

- Adverse geotechnical conditions are encountered – e.g., if the kimberlite pipe/basalt contact ‘moves outward’ into a very steep multi bench stack in basalts.
- The stability of an access ramp is compromised by adverse geology or structure, especially in the Satellite Pit where only single ramp access is planned.

Considering the above, any adverse geotechnical conditions encountered, such as:

- an adversely oriented or positioned kimberlite pipe/basalt contact;
- poor rock mass conditions in the kimberlite pipe/basalt contact zone;
- fractured, weak kimberlite between the pipe contact and the basalt raft in Satellite Pit;

are likely to adversely impact implementation and execution of Letšeng’s LOM plan given that the only viable remedy/mitigation generally may be to step out at- and/or flatten off the pit slope below such adversely affected area – as had to be done on the west wall of Satellite Pit in the current pushback. That said, the possibility that the LOM plan will not be achieved in full must be recognised.

It is furthermore recognised that the key to achieving the LOM plan, is in operational implementation and execution, which requires significant emphasis and dedicated focus on mining procedures and controls including QA/QC to mitigate rockfall risks to acceptable levels, by:

- Ensuring adequate rockfall retention is achieved, by continually improving pit limit blasting practices at Letšeng, by minimising breakback and edge loss on benches mined along final pit perimeter walls, and good housekeeping to ensure all loose materials is loaded out and removed before blasting the next bench.
- Regular inspection of working areas including detailed and ongoing mapping of geological, structural geological, hydrogeological, rock mass and geotechnical conditions, on operational bench faces and along final pit wall perimeters, to allow continuous characterisation of ground conditions and stability controls encountered, identification of areas of potential instability, with implementation of appropriate interventions to mitigate associated geotechnical risks.
- Maintaining real time monitoring of open pit highwalls in the Letšeng pits in general, and above active working areas specifically, with real time evaluation and interpretation of monitoring data, and adoption of suitable alarm thresholds for early evacuation should any significant instability develop.

Finally, and as noted in Section 16 ‘Mining Methods’:

- Bullnose pit slope geometries as noted in the northeastern highwall of Satellite Pit, is bound to give rise to significant rockfall hazards which cannot be accommodated considering the aggressive, very steep inter ramp slope angles in basalt and the overall height of this bullnose slope. It is therefore recommended that the pit geometry be amended locally to remove this bullnose, and to make provision for minimum 26.0 m wide geotechnical berms at the specified height intervals given the absence of ramps on this part of the slope.

- Letšeng and Gem Diamonds management acknowledges and accepts the significant risk associated with providing only single ramp access into Satellite Pit, notwithstanding the aggressive, very steep inter ramp angles adopted in pit slopes in both the basalts and kimberlites at Letšeng.

25.6 Recovery Methods

Both Plant No. 1 Plant No. 2 Plant are generally operating well, within their original design parameters and the various modifications made since commissioning.

The Recovery Plant has been modified to include XRT machines to treat the coarse fractions of the DMS concentrates from both Plants. This will be an improvement on the old Flowsort machines.

The production levels of both Plants indicated that they are underperforming. The engineering availabilities are generally acceptable, and therefore the issues lie in the metallurgical utilisation. The analysis of the metallurgical accounting information was not able to define exactly where the problems lie and therefore the updating of this system needs to be addressed urgently.

The Tailings and Slimes disposal systems are considered adequate for the currently defined LOM.

The manpower levels in the Processing Section are considered to be high and should be optimised.

The Processing unit costs are high when benchmarked against similar operations and these need to be brought under better control.

Letšeng has already set in motion a plan to address both of these issues. This was discussed during this study, and it is considered that, if the corporate will is there to undertake these necessary planned changes, then there should be no reason why the Treatment Plant production and cost forecasts for 2024 and beyond cannot be met.

The Capital Expenditure five-year forecast is considered realistic for the operations.

25.7 Infrastructure

The infrastructure is well developed and functioning as would be expected for a mature operation. The tailings facility continues to develop and will require ongoing monitoring to assure the construction of the next lift is timely to support the operation. Ongoing monitoring of the stability of the embankment and operations practices is recommended to conform to industry best practices.

Potable water is sourced from the Mothusi Dam water storage facility and is pumped to the Potable Water Dam. Potable water is first treated in the potable water treatment plant, prior to it being used for recovery processes and domestic consumption. It is our opinion that the supply of water is met via the Mothusi dam.

Stormwater from the plant area is captured in the Old RSF dam and reused.

Fine tailings within the RSF and coarse tailings deposited within the headwaters of the Patising system contain nitrates from explosive residues. Dirty water is not released to the Patising catchment, however seepage water from the tailings is shown to have an impact down the Patising catchment. Elevated nitrates are also measured within the RTZ system.

There is one operational WRD, extending from the west to the east of the existing mine pits, encompassing a large southern area. The current WRD footprint is approximately 220 ha and varies in height from a few metres to more than 110 m in deep valley areas. Generally, the WRD is advancing in a southerly and southeasterly direction as the western area is now restricted. The historical nitrate removal wetland located west of the WRD adjacent to the national A1 road remains operational.

The process plants produce two residue streams:

- Coarse kimberlite tailings (+2.0 mm to 40.0 mm) 70% split, primarily used for wall building and placed dry using bulldozers and secondary use as dressing to the operating surfaces of the WRD. Coarse kimberlite tailings are transported to the Patising Valley using a conveyor belt transport system.
- Fine kimberlite tailings stream (-2.0 mm) 30% split, permanently disposed of in preformed RSF basin/s as a slurry and deposited via multiple open-ended spigots.

25.7 Environmental Studies and Permitting

Based on the review, the following can be concluded regarding Letšeng Diamonds:

- Several EIAs have been conducted since the original impact assessment in 2004 for various project expansion activities; and all have been approved by the Lesotho government.
- The mine is in possession of all relevant permits required to legally operate and tracks their status on an ongoing basis through a tracker system.
- There is an up-to-date Social and Environmental Management Plan (SEMP), dated 2022, which is used to monitor and manage a range of aspects, including cultural heritage, general and hazardous waste, water and mine waste residue, biodiversity and ecosystem services, climate change and rehabilitation and mine closure, all of which are regularly monitored and audited.
- There are established integrated health, safety and environmental (HSE) management systems, which are compliant with ISO Standards 14001 (2015) and 45001 (2018). The latest surveillance audit was conducted in 2023 and found that the mine's systems are mostly effective and fulfill the requirements of the applied standards, except for identified non-conformities that would be subject to corrective actions.
- The company has the relevant structures, staff and resources to manage its environmental and social management obligations and ensure ongoing compliance. This includes fulfilment of its corporate social responsibility and investment commitments.
- The company's systems are regularly audited internally and externally. The most recent external audits found a high level of compliance with the SEMP. The auditors concluded that the mine's Environmental and Social Action Plan (ESAP) and the external audits on SEMP compliance are used to proactively track performance against the SEMP conditions. It noted that efforts are underway to

ensure compliance with appropriate water quality standards. The most recent SHE legal audit has implemented the legal arrangements necessary to satisfy the requirements of the HSE directives set by the legislator.

- Based on the Letšeng Annual Environmental Performance Report there has been a decline in environmental incidents, with no significant or major environmental incidents reported in 2022.
- Gem Diamonds is committed to implementing recommendations of Task Force Climate-related Financial Disclosures (TCFD), which was formally adopted by the Board in 2021. Progress on the phased implementation of the TCFD Roadmap is documented in the 2022 and mid-year 2023 Our Approach to Climate Change reports.
- The mine focuses on projects that provide the greatest benefits to project-affected communities through continuous engagement and partnerships. US$ 0.5M were invested in CSI projects in 2022.
- Stakeholder engagement is guided by a stakeholder engagement strategy and implemented through the stakeholder engagement master plan. Engagements with various stakeholders continued as planned, with only one grievance registered and addressed through the established grievance management procedure in 2022.
- The Integrated Rehabilitation and Closure Plan is updated every three years and the mine closure liability estimates are reviewed annually. The Basis of Estimate Closure Liability Update FY2023 has been approved and submitted to the Ministry of Mining as per Mining Lease Agreement requirements.

25.8 Capital and Operating Costs

Based on average mining/processing rate of 5.4 Mtpa, the Letšeng reserves should support the project for 13 years until 2037. The capital cost estimates developed for this study include the costs associated with engineering, procurement, acquisition, construction, and commissioning. The cost estimate is based on budgetary estimates prepared by Letšeng and reviewed by SRK. All estimates are prepared from first principles or are based on recent site cost data.

The Letšeng Mine requires LOM sustaining capital of US$ 76.9 M based on the current production schedule /reserves.

26 Recommendations

26.1 Recommended Work Programs

Qualified Persons note that the Letšeng Mine is currently in operation and has an extensive past production history. Thus, the following recommendations are aimed at improving operational and financial performance.

26.2 Geology and Mineral Resource

Mr. Hetman and Mr. Revering make the following recommendations to continue to advance the understanding of the geology and mineral resource at Letšeng:

- Continued discrete production and processing of individual kimberlite domains to improve the understanding of the distribution of Type IIa diamonds within the various geological domains.
- Continued pit mapping will greatly increase the understanding of the geology of both pipes, and this information should be incorporated into quarterly geological model updates.

26.3 Mining

Mr. Ebrahimi makes the following recommendations for mining at Letšeng:

- The Inferred resources at the bottom of the pit need to be upgraded to Indicated resources as soon as possible. This is necessary for making a final decision about the final pit expansion and the stripping associated with that work.
- Letšeng Mine is in transition from a contractor-based operation to an owner-based operation, and the progress of this transition must be monitored closely. The optimisation and the mine design must be revised using the updated and verified operating cost after the transition has been completed later in 2024 using actual cost data.

26.4 Geotechnical and Hydrogeological

Mr. Keyter makes the following recommendations pertaining to the geotechnical aspects of Letšeng:

- Delineation drilling to confirm the location of the kimberlite pipe/basalt contact and its intersection with the LOM pit shell is essential considering the potential impact an adversely positioned contact may have on the stability of very high multi bench stacks in basalt (if such contact ‘moves outward’ into such multi bench stack) and where an adversely oriented contact may compromise the stability of an access ramp – especially in the Satellite Pit where only single ramp access is planned.
- Additional geotechnical drilling, sampling, field and laboratory testing must be carried out as required and in accordance with international best practice (e.g., applicable ISRM Suggested Methods) and design guidelines (e.g., Wyllie et al., 2004; CSIRO, 2009) to augment Letšeng’s geotechnical

database and to allow ongoing design review and verification during implementation of the LOM design.

- Inter-ramp angles should be reduced in weaker geotechnical sub-domains in kimberlite where adverse ground conditions comprising more friable, fractured, and weaker ground are typically experienced.
- As noted in Section 16 'Mining Method' and in Section 25 'Interpretation and Conclusions', the key to achieving the LOM plan for Letšeng, is in operational implementation and execution, which will require significant emphasis and dedicated focus on mining procedures and controls including QA/QC to mitigate rockfall risks to acceptable levels (Itasca, 2018 and 2022; SRK, 2021 and 2023a) – including:
  - Ensuring adequate rockfall retention within inter ramp multi bench stacks and overall slopes, including:
    - Operationally stepping out to leave a wider berm where required because of adverse ground conditions encountered, or where LOM design geometries were not achieved.
    - Continually improving pit limit blasting practices to minimise breakback and edge loss along final pit perimeter walls.
    - Scaling of bench faces and removal of all loose material on bench crests before the next bench is blasted.
    - Removal of hard toes, before the next bench is blasted.
  - Regular inspection of working areas including safe declarations at the start of shifts.
  - Detailed and ongoing mapping of structural geological, hydrogeological, rock mass and geotechnical conditions, on operational bench faces and along final pit wall perimeters, to allow continuous characterisation of ground conditions and stability controls encountered.
  - Identification of areas of potential instability, with implementation of appropriate interventions to mitigate associated geotechnical risks, including:
    - Installation of draped mesh to retain loose rock in areas of elevated rockfall risk.
    - Installation of ground anchors, rockbolts, dowels, mesh and/or shotcrete where required to ensure the stability of key blocks and wedges in areas where multi-bench stability is critical, e.g., the stability of a ramp accessway.
    - Installation of other rockfall retention measures such rockfall barriers and fences.
  - Maintaining real time monitoring of open pit highwalls in the Letšeng pits in general, and above active working areas and areas of elevated rockfall risk specifically – including:
    - Real time evaluation and interpretation of monitoring data.
    - Maintaining an updated Ground Control/Hazard Management Plan.

    - Adoption of suitable alarm thresholds and developing suitable Trigger Action Response Plans (TARPs) for early evacuation should any significant ground movement or instability develop.
    - Maintaining an updated Emergency Response and Evacuation Procedure.
  - Implementation of appropriate pit slope dewatering and groundwater monitoring, to ensure adequate depressurisation of pit slopes in general, and of the kimberlite pipe/basalt contact zone specifically.
  - Ensure regular external review of the geotechnical performance of the Letšeng pit slopes, including an evaluation of the adequacy or otherwise of the pit slope designs adopted.
  - Adoption of Safe Highwall Practices (e.g., stand-off distances, approaching highwalls, inspection requirements, etc.).
  - Ensuring the Letšeng Geotechnical Department is adequately resourced and organised to meet the day to day demands and challenges that will arise because of the aggressive, very steep inter ramp multi bench stack designs adopted, to allow management of the Letšeng mining operation in a safe manner.

Mr. Shepherd makes the following hydrogeological conclusions and recommendations as described by Knight Piésold:

- An advanced dewatering program can be employed to depressurize the open pit walls in advance prior to the deepening of the open pits.
- The opportunity exists to save on costs involved to rather apply advanced dewatering than to drill multiple depressurization holes into the open pit walls at each level with depth.
- The water that gets abstracted can be used for mining process directly as this water will be of good quality.
- The coring holes drilled in and around the open pits need to be deepened to the proposed future mining depth (2654 masl) and equipped with VWT sensors to monitor the groundwater level drop during the advanced dewatering program and to confirm the hydraulic gradient and seepage faces are within a safe working distance for stability requirements for the mine workings.

26.5 Infrastructure

The Letšeng Mine has been operating for many years and has all of the infrastructure necessary to support the economic extraction of its reserves. Sufficient sustaining capital has been estimated for the remaining 14 years of mine production in order to replace aging infrastructure as required, and to keep the mine operating at an average LOM production rate of 5.3 Mtpa. The careful management of sustaining capital expenditures will be important to achieving the mine’s profitability goals. SRK recommends that the mine considers the salvage value of any saleable equipment at the end of mine life.

The ongoing project to mitigate the elevated nitrates needs to continue.

The EoR RSFs Annual Performance review states, “There are sufficient fines storage capacity available to accommodate the LOM tonnage profiles to full supply levels provided that the LOM design is implemented" and also “Additional coarse storage capacity will be required in 2026 in order to accommodate the LOM tonnage profiles”.

26.6 Costs and Economics

In 2023, the mine initiated a cost reduction program that resulted in decreased operating costs in Q4 2023 and the program is expected to reduce operating costs in 2024 and beyond. The key drivers behind Letšeng’s cost reduction program are a reduced reliance on the use of contractors, increasing plant throughput by 6%, aligning headcount to operational requirements, and an across-the-board spending reduction of 19%.

The QP reviewed these cost reduction initiatives and believes that they are realistic and achievable. SRK recommends that Letšeng Mine continue to drive down costs in order to improve the mine’s economics.

26.7 Recovery Methods

Gem Diamonds and Letšeng Mine should implement the planned management, production, and financial changes to the operations in order to reduce the processing unit costs and bring them in line with similar operations.

The potential use of XRT machines to recover large diamonds earlier in the Plants’ flowsheets should be reconsidered. This has the potential to reduce diamond damage and hence improve revenues. This could be linked to improved diamond liberation technology at the Front End of the Plants.

The Recovery Plant equipment should be improved so that the need for the Recovery Tailings Retreatment Plant is removed. This will improve recovery efficiency and security, as well as reduce overall operating costs. The Capital Expenditure 5-year forecast caters for this project.

26.8 Environmental Studies and Permitting

Letšeng Diamonds should maintain its legal licence to operate, through ensuring compliance with permit conditions and monitor and report on the mine’s performance to the approved Social and Environmental Management Plan (SEMP).

The mine should continue to fulfill its CSI commitments and proactively engage communities and other stakeholders to stay abreast of issues and concerns thereby retaining its social license to operate.

26.9 Recommended Work Program Costs

The QPs has not recommended any work programs as part of this Feasibility Study and has assumed that any costs associated with the recommendations made in this section will be covered under existing departmental budgets.

27 References

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28 Date and Signature Page

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.