TECHNICAL REPORT

Initial Mineral Resource Estimate for the North Target of the Banio Potash Project, Mayumba Permit, Republic of Gabon

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1 EXECUTIVE SUMMARY

Introduction

Millennial Potash Corp. (MLP or the "Company"), a Canadian registered company, has the option to acquire 100% of Equatorial Potash thereby acquiring up to 100% of Mayumba Potasse Sarl, (Mayumba Potashse) a Gabonese registered company, which holds the rights to the "permis de recherché minière pour la potasse et sels connexes n° G5-595 dènommé Mayumba" (Mayumba Permit or Property) in the Republic of Gabon (ROG).

MLP has requested ERCOSPLAN Ingenieurgesellschaft Geotechnik und Bergbau mbH (ERCOSPLAN) to evaluate the available exploration data on the property and to estimate potash Mineral Resources. ERCOSPLAN should provide the results of their investigations and recommendations for further work in the form of a NI 43-101 Technical Report**.**

Property Location and Status

The Mayumba Permit is located in the S of Gabon close to the border with Republic of Congo (ROC) on the Atlantic Ocean. The original Mayumba Permit was granted in 2016 and extended for a period of 3 years the first time on February 4, 2022. A further extension of the validity of the Permit again for 3 years can be applied for if necessary.

Available Data

For the evaluation of the potash prospects of the Mayumba Permit the information available is from historical hydrocarbon exploration work including a seismic survey and the drilling reports and geophysical logging data (at minimum a natural gamma ray log) from 6 drill holes (Banio-1 to Banio-5 and BATC-1). Furthermore in 2017 Mayumba Potasse drilled 3 further potash exploration drill holes (Ba-001 to Ba-003) through most of the evaporite sequence within the permit area in the vicinity of historical hydrocarbon drill hole BATC-1, which were cored and assayed as well as geophysically logged. After evaluation of the original assays by ALS that suggested that this laboratory had problems with the determination of the K-content, it was decided to have a re-analysis of the pulps of samples with over 5 % KCl. The re-analysis was done by SRC and K-UTEC laboratories with experience in analysis of Carnallite samples. Cross check samples were provided to allow comparison of these two laboratories. The results of these laboratories showed that ALS tended to overestimate K and Mg contents, especially at higher grade samples. Where available the re-analysis of the pulps have been used for the Mineral Resource estimate. In 2023 MLP extended the drill hole Ba-002 from 516 m to 552 m depth. The information from the cores and the assays from the potash bearing sections by the SRC laboratory were also supplied for evaluation.

The Mayumba Permit is located in the northern part of the Congo Coastal Basin of Aptian age (Late Cretaceous) which has been explored for potash for over 60 years in the ROC. Publicly available information and results of the potash exploration that has taken place in the ROC over the last 60 years have also been used for the evaluation.

Geology and Mineralisation

The evaporite stratigraphy in the Congo Coastal Basin is well-defined with 10 depositional cycles in the evaporite sequence, and within each cycle between 1 and 14 potash seams. The interlayering of rock salt with potash seams with typical thickness patterns allow determine from the gamma ray log, which cycle and seams are encountered in a drill hole. Within the salt sequence, these cycles (and seams) can be correlated over distances over more than

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60 km within the basin and even single seams could be correlated between the new Ba-wells and the historically Banio-wells, which are more than 15 km apart.

On the seismic sections faults off-setting the base and top of the salt have been interpreted. By connecting faults with similar conditions over several seismic sections a pattern of faults has been constructed. These faults divide the deposit into blocks bounded by NW-SE striking normal faults (locally reversed) and by NE-SW striking strike slip or transform faults that facilitate movement along the normal faults. This interpretation is supported by the observations on the stratigraphy of the salt section from the available drill holes, which with the exception of Ba-001 at least show 4 typical evaporite Cycles that can be correlated over the whole Congo Coastal basin. For the geological model it is assumed that the layering within each block is near horizontal. The drill hole Ba-001 was discontinued after penetrating about 20 m in the salt section, because steep layering in carnallitite rocks was observed and interpreted as drilling into a fault zone. The author, from experience in the basin, interprets the steep layering in the carnallitite as a large disturbed block of carnallitite that floats in a matrix of Tachyhydrite, with the normal potash bearing sequence continuing further down. This kind of structure is known from other projects. In Ba-001 the top of cycle VII, typically Tachyhydrite rich has been encountered directly below the Anhydrite capping the top of the salt section.

All Ba drill holes and the hole BATC-1 are present on an uplifted block, which allowed circulation of brines in the top of the deposit and some of the Carnallite seams have been transformed to Sylvite. Hole Ba-003 shows a nearly complete Cycle VIII with the boundary between Sylvite and Carnallite transformation in the lower part of potash seam 4. In the Cycles V to VII the Ba-003 potash seams can be correlated with similar seams regarding thickness and grade with seams in Ba-002 and regarding thickness with seams in BATC-1, as well as well as with the same seams in the Banio holes. At hole Ba-002 a few tens of meters of the upper part of Cycle VIII are missing and the boundary of Sylvite to Carnallite transformation is present at the top of Cycle VII. This hole was extended in 2023 and confirmed further potash seams in Cycle IV and Cycle III that due to interlayering of rock salt, clay dominated layers and potash seams were not unequivocally identified from the geophysical logging of nearby hole BATC-1. Similar potash seams were identified from the geophysical logging data of the Banio holes with exception of Banio-3 and Banio-2 (Cycle III potash seam). The extension confirmed that as in BATC-1 the Cycle II at Ba-002 contained no significant potash seams, contrary to the Banio holes, which show significant thickness of a Cycle II potash seam. On the uplifted bock the elevation of the top of Cycle VII in the Ba-holes and the BATC-1 hole suggest near horizontal layering with a minimal dip to the SW. The Carnallite/Sylvite transformation boundary dips steeper, indicating that the block has a more complex movement history.

Besides the Cycle II to Cycle VIII and their potash seams, the Banio drill holes also show complete Cycle IX in all holes and complete Cycle X with further potash seams/horizons in all holes except Banio-4, where the carnallitite seams/horizon at the top of Cycle X are missing. Based on the faults constructed from the seismic sections, Banio-4 seems to be located on a block separated by a NW-SE fault from a block with the other Banio holes.

Presently a total of 19 seams or horizons (combined seams) have been identified in the available drill holes. Eventually further seams/horizons might be present in the Cycles VIII, IX and X, but could not be unequivocally identified in the Banio holes, because the geophysical logging data did not allow a reliable estimate about average KCl grade over the thickness of

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potential seams consisting of an interlayering of rock salt and Carnallite dominated layers.

Mineral Resources

Only the drill holes Ba-002 and Ba-003 have adequate information about thickness and grade (assays) of the potash seams/horizons required for a Mineral Resource Estimate. Mineral Resources in the categories Indicated and Inferred have been estimated for the area surrounding these drill holes using the ROI methodology. Because Carnallite is considered the primary potash mineral in the deposit and Sylvite a secondary reaction product of Carnallite with circulating brines and therefore less regular in distribution, different ROI's for the Carnallite and Sylvite mineralisation have been used.

For the Carnallite Mineralisation,

- Indicated resources occur in a radius of 1000 m for a seam with known thickness and grade of the drill holes. This ROI is not extended beyond the faults interpreted from the seismic sections,
- Inferred resources occur in a radius of 2000 m of an eligible drill hole, minus any Indicated resources in this area. This ROI is extended beyond the faults interpreted from the seismic sections, if the extension is on the downthrown block.

For the Sylvite Mineralisation,

- Indicated resources occur in a radius of 500 m for a seam with known thickness and grade of the drill holes. This ROI is not extended beyond the faults interpreted from the seismic sections,
- Inferred resources occur in a radius of 1000 m of an eligible drill hole, minus any Indicated resources in this area. This ROI is not extended beyond the faults interpreted from the seismic sections.

The estimated Indicated Mineral Resources over each Cycle for different mineralogy (Min., Mineralisation, Sy, Sylvite or Ct, Carnallite) are as follows:

Hole	Min.	Summed Thickness	Summed Tonnage [1]	Average Grade	Total KCl
		(m)	(million t)	(% KCl)	(million t)
Ba-002	Sy	4.8	7.73	24.9	1.93
Ba-002	Ct	72.8	279.69	15.3	42.86
Ba-003	Sy	7.5	12.38	19.5	2.41
Ba-003	Ct	70.1	356.84	16.1	57.36
Total	Sy		20.12	21.6	4.34
Total	Ct		636.53	15.8	100.23

The estimated Inferred Mineral Resources over each Cycle for different mineralogy (Min., Mineralisation, Sy, Sylvite or Ct, Carnallite) are as follows:

[1] Due to rounding of the numbers in the tables, minor discrepancies of results shown within and between tables are possible

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Hole	Min.	Summed Thickness	Summed Tonnage	Average Grade	Total KCl
		(m)	(million t)	(% KCl)	(million t)
Ba-002	Sy	4.8	13.94	24.9	3.47
Ba-002	Ct	72.8	531.95	15.5	82.17
Ba-003	Sy	7.5	29.85	19.5	5.81
Ba-003	Ct	70.1	583.40	16.1	93.87
Total	Sy		43.79	21.2	9.28
Total	Ct		1115.35	15.8	176.04

Conclusions and Recommendations

Millennial Potash Corp. (MLP or the "Company"), a Canadian registered company, has the option to acquire 100% of Equatorial Potash thereby acquiring 100% of Mayumba Potasse Sarl, (Mayumba Potasse) a Gabonese registered company, which holds the rights to the "permis de recherché minière pour la potasse et sels connexes n° G5-595 dènommé "Po-tasse et sels connexes Mayumba" (Mayumba Permit) in the Republic of Gabon (ROG).

Based on the available data for the southern part of the Property a geological model for the distribution of up to 19 potash seams or horizons has been developed. Based on this model mineral Resources have been defined for the area surrounding the drill holes Ba-002 and Ba-003.

The Indicated Mineral Resources for the Carnallite mineralisation amounts to 636.5 million tonnes of mineralized material at an average grade of 15.8 % KCl (58.7 % Carnallite). The Total Indicated Mineral Resources for the Sylvite Mineralisation are estimated at 20.1 million tonnes of mineralized material at an average grade of 21.6 % KCl (Sylvite).

The Inferred Mineral Resources for the Carnallite mineralisation amounts to 1,115.3 million tonnes of mineralized material at an average grade of 15.8 % KCl (58.8 % Carnallite). The Total Inferred Mineral Resources for the Sylvite Mineralisation are estimated at 43.8 million tonnes of mineralized material at an average KCl grade of 21.2 % KCl (Sylvite).

It is the opinion of the author that the Mayumba Permit is a property of merit and warrants additional exploration.

MLP is executing the exploration program over the Mayumba Permit using a targeted and phased approach, which is, in the opinion of the author, the accepted method for exploring for basin type potash deposits. In the first phase of the exploration work MLP will test the concept for the presence of the mineralisation. The exploration program is split into Phase 1 NW, focused on the location of the Ba drill holes, and Phase 1 SW, focused around the location of the Banio drill holes. Results from the Phase 1 NW and Phase 1 SW programs will then be reviewed to enable planning of Phase 2 of the exploration program and selection of the optimal area for more detailed exploration.

The Phase 1 NW exploration program aims to carry out further exploration drilling within the NW (Ba Block) to identify,

- The carnallite content of the cycles II to VII in existing drill hole Ba-001 by extending drilling depth by 350m;

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- The extension of the potash mineralisation towards the SE by drilling of a new hole (Ba-004) at E 731685, N 9585314 with a depth of about 700 m (top of salt at top of cycle IX).

In parallel to the phase 1 NW exploration it is recommended to develop a preliminary economic assessment for a solution mining and brine processing operation on the outlined Mineral Resources to confirm that the mineralized material can be economically mined and to better define minimum thickness and grade criteria for definition of mineable potash seams. It is estimated that the phase 1 NW exploration with ~ 1,050 m of drilling and the PEA will take about 3 months and will cost in the range of 1.9 million USD$ including camp support and logistics.

The Phase 1 SW exploration program aims to confirm the thickness and grade of the potash seams in the cycles II to X around the area of the Banio drill holes. For a Mineral Resource estimate additional drilling at 3 localities in the SW fault block is required. To minimize disturbance of the primary forest the drill hole locations are proposed along existing tracks and forest clearings at the following sites.

Phase 1 SW drilling requires a fly camp or relocation of the main camp. It is estimated that the phase 1 SW exploration with ~3,000 m of drilling will take about 4 months and will cost in the range of 4.5 million USD including camp support and logistics.

Conditional upon a favourable outcome of phase 1, phase 2 can be initiated which consists of drilling 5 to 6 exploration drill hole in the NW-block between the town of Mayumba and the Ba drill holes (present main camp location) either on the headland between lagoon and Atlantic Ocean or on the east side of the lagoon. Results of phase 2 will assist in defining the best location for project development taking into account thickness and grade, as well as accessibility of the deposit, and the best conditions for the development of a potash mining and processing operation, taking into account the presence of the nature reserve areas. It is estimated that this phase 2 will cost about 8 million USD$ and take another 10 months. With the results of phase 1 and phase 2 the best option for further exploration to define a Mineral Resource base with Measured and Indicated Mineral Resources can be selected for phase 3 exploration

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2 Introduction and Terms of Reference

Millennial Potash Corp. (MLP or the “Company”), a Canadian registered company, has the option to acquire a 100% interest in the Banio Potash Project through the acquisition of Equatorial Potash Pty Ltd, and its 100% owned in-country subsidiary Mayumba Potasse Sarl, (Mayumba Potasse). Mayumba Potash a Gabonese registered company, holds the rights to the exploration permit “permis de recherché minière pour la potasse et sels connexes n° G5-595 dènommé “Potasse et sels connexes Mayumba“ in the Republic of Gabon (ROG), herewith referred to as Mayumba Permit or Property. The terms of the Definitive Agreement, entered into by MLP and Equatorial Potash (owners of Mayumba Potasse) are further detailed in Section 4.

MLP is interested to develop the Mayumba Permit as a project for the production of Muriate of Potash (MOP) and has requested ERCOSPLAN Ingenieurgesellschaft Geotechnik und Bergbau mbH (ERCOSPLAN) to evaluate the available exploration data on the property (section 2.3) till November 7, 2023, and to estimate potash Mineral Resources. ERCOSPLAN should provide the results of their investigations and recommendations for further work in the form of a NI 43-101 Technical Report.

2.1 Terms of Reference

This Technical Report was prepared by Qualified Persons (QP) following the format of the National Instrument (NI) 43-101 Standards of Disclosure for Mineral Projects, NI 43-101 CP Companion Policy, and NI 43-101 Technical Report of the Canadian Securities Administrators, effective June 30, 2011 and in accordance with Canadian Institute of Mining (“CIM”), Metallurgy and Petroleum Best Practices and Reporting Guidelines and CIM Definition Standard for Mineral Resources and Mineral Reserves”, effective date May 10, 2014 (CIM, 2014 /3/).

The effective date of this Technical Report is November 7, 2023.

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ERCOSPLAN or ERCOSPLAN personnel do not have, at the date of this Technical Report, and have not had within the previous years, any shareholding in or other relationship with the Company and consequently consider themselves to be independent of MLP. ERCOSPLAN will receive a fee for the preparation of this Technical Report in accordance with normal professional consulting practices. This fee is not contingent on the conclusions of this Technical Report and ERCOSPLAN will receive no other benefit for the preparation of this Technical Report. ERCOSPLAN does not have any pecuniary or other interests that could reasonably be regarded as capable of affecting its ability to provide an unbiased opinion in relation to the Company’s Project.

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2.2 Qualified Persons

The present Technical Report has been prepared by Dr. Sebastiaan N.G.C. van der Klauw of ERCOSPLAN. The author is a Qualified Persons as defined in NI 43-101 (the "Qualified Person").

The author for this Technical Report on behalf of ERCOSPLAN is EurGeol Dr. Sebastiaan van der Klauw. Dr. van der Klauw is a Senior Mining Geologist at ERCOSPLAN. Dr. van der Klauw has more than 20 years of experience in the potash mining industry. His mining experience includes salt (halite), carnallitite, and sylvinite. Dr. van der Klauw's expertise is in the evaluation of the structure of potash deposits and the possible interactions between salt rocks and fluids. Dr. van der Klauw holds a Degree as Geologist from the Rijksuniversiteit Utrecht in the Netherlands and a PhD in Natural Sciences from the University of Bochum in Germany. Dr. van der Klauw has practiced in the area of potash mining since 1996 and has been associated with ERCOSPLAN since 1999. Dr. van der Klauw is a registered European Geologist with the EFG. He is a member of the Solution Mining Research Institute.

Dr. van der Klauw visited the Mayumba Permit and reviewed the core of the exploration drill holes Ba-001 and Ba-003 on October 16, 2022.

Dr. van der Klauw is responsible for all the relevant Sections of the Technical Report.

2.3 Available Data

For the evaluation of the Property in this Technical Report, the author has relied on the information from the 2017 potash exploration drill holes:

- Ba-001
- Ba-002
- Ba-003

as discussed in Section 10.2. Furthermore, the information about the extension of drill hole Ba-002 from 516.25 m to a depth of 552.50 m in August 2023 has been used. Further information from or near the Mayumba Permit is available from hydrocarbon exploration drilling in the 1970's by Elf Gabon (Banio-1 to Banio-4), in 1991 (Banio-Tchigana 1, BATC-1) and in 2010 by Maurel and Prom (Banio-5). The available information from these drill holes is discussed in Section 10.1.

From the geological drilling reports for the 1970 Banio wells, it is evident that seismic exploration in the 1970's was carried out, but these seismic data, probably paper prints, are not available. The available seismic data consists of 34 lines (datasets) of about 411 line kilometres and covers an area of approximately 600 km² over the southern part of the Property (Figure 1). The data were gathered in 3 different campaigns (BAN90, TMP90, and MNPM11) between 1990 (BAN and TMP) and 2012 (MNPM) and are discussed in Section 9.

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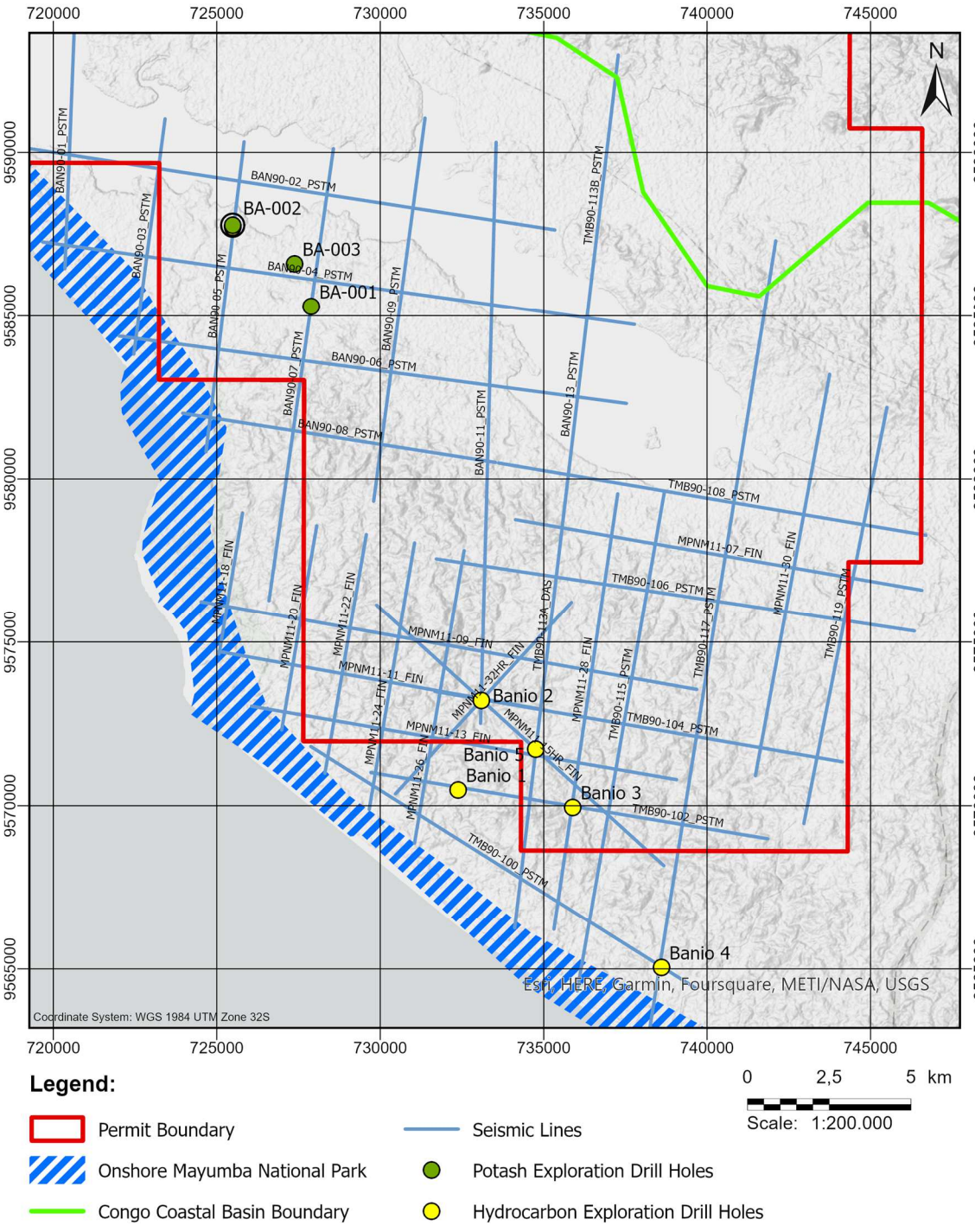


Figure 1 Location of existing Drill Holes and the available Seismic Sections within the Southern Part of the Mayumba Permit

The author has also relied on various sources of information obtained from exploration carried out in the same basin towards the south in the Republic of Congo (ROC), which has a longer history of potash exploration. Information used for comparison includes reports about the Hole Potash Mine (Feuga et al., 2005, /7/), the MagIndustries Corp. Mengo

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Project (Rauche & van der Klauw, 2015, /18/), the Kola project (SRK et al., 2012, /20/), the Dougou Project (Kore, 2015 ,/10/) and the DX Project (Kore, 2020, /12/) all 3 of Kore Potash, as well as from the Kanga potash project (Strauss & Rigny, 2022, /21/). The position of the other areas where recent exploration has been carried out with respect to the Mayumba Permit, is shown in Figure 2. A non-public archive holds all the information of the potash exploration campaigns carried out by Mines de Potasse d'Alsace) MDPA from the 1960's till the 1990's in the Congo Coastal Basin. Some non-public reports from the MDPA archive have been cited in other reports, and if no independent verification was possible, these reports have been cited as "report" in "other report", and are listed as unpublished in the reference list. Some literature that cites sources from this database include e.g. de Ruiter, 1974, /6/, van der Klauw & Grüschow, 2007, /21/, Pedley et al., 2016, /16/, van der Klauw et al., 2019, /24/. Where possible, all available historical information has been used to develop the geological model of the Banio Potash Project area.

The stratigraphy of the Congo coastal basin and the processes of evaporite precipitation, diagenesis, dissolution, and preservation, are topics of both historical and on-going research by numerous industry, academic, and government bodies and are listed in the reference section. The detailed stratigraphic correlations that are presented herein are based upon these reports; however, they have been modified as to the authors' personal experiences with the potash deposits of the basin.

Property description was obtained from the license document issued by the Ministry of Mines and Geology of the ROG.

The reader is reminded that the term "ore" should not be used, disclosed, or implied unless reserves have been estimated on the property. To be called ore, economic factors must be taken into account, and it must be possible to extract metals or minerals profitably from the ore. Where the term "ore" is used in this Technical Report, it is in the context of a direct quote taken from third-party reports or papers and as such is not compliant with recommendations set forth in NI 43-101.

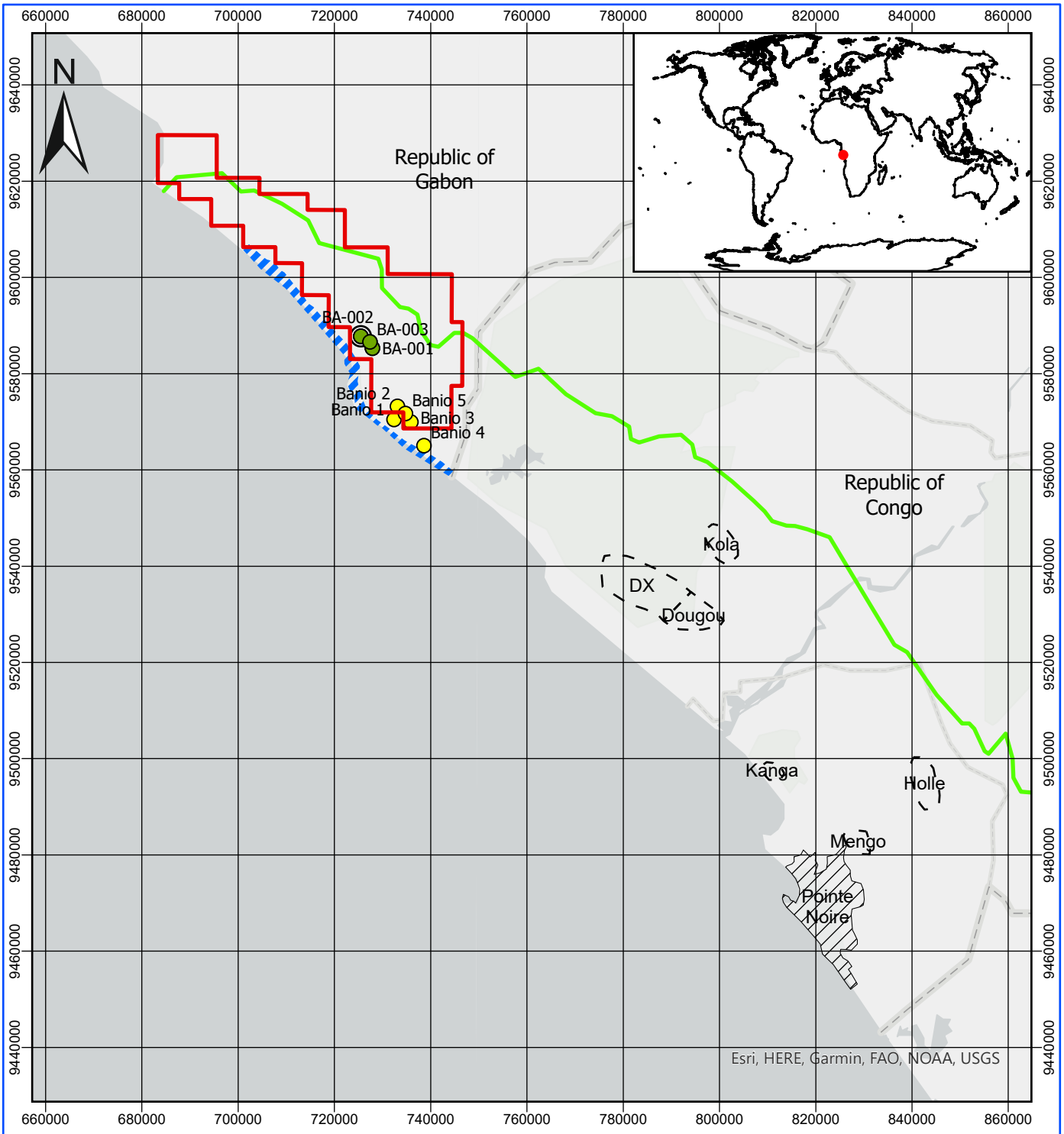
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Legend:

- Permit Boundary
- Onshore Mayumba National Park
- Congo Coastal Basin Boundary
- Potash Exploration Drill Holes
- Hydrocarbon Exploration Drill Holes

Millenial Potash

Figure 2

Property Boundaries of the Mayumba Permit and other Areas within the Congo Coastal Basin explored intensively for Potash

Scale: 1:1.200.000

0 25 50 Kilometers

Coordinate System: WGS 1984 UTM Zone 32S

Datum: 13.11.2023
Z:\@ArcGIS_Pro\23-006_MillennialPotash_PotashExpl_Banio\23-006_MillennialPotash_PotashExpl_Banio.aprx

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3 Reliance on Other Experts

The Consultants have not reviewed the property tenure, nor independently verified the legal status or ownership of the properties or underlying surface land option agreements. The results and opinions expressed in this Technical Report are based on the Consultants' field observations and the geological, legal and technical data listed in the References and Appendices. While the Consultants have carefully reviewed all of the information provided by the Company and believe the information to be reliable, the Consultants have not conducted an in-depth independent investigation to verify its accuracy and completeness.

The results and opinions expressed in this Report are based upon the aforementioned legal, environmental information or tax matters being current, accurate, and complete as of the date of this Report, and the understanding that no information has been withheld from the author that would affect the conclusions made herein. The Consultants reserve the right, but will not be obliged, to revise this Report and conclusions if additional information becomes known to the Consultants subsequent to the defective ate of this Report. The Consultants will not be responsible for MLP's actions in distributing this Report.

Except for the purposes legislated under provincial securities laws any use of this Report by any third party is at that party's sole risk.

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4 Property Description and Location

In the following sections the official location of the Mayumba Permit will be given together with further background about the Property as well as the Gabonese mining legislation.

4.1 Location and Tenure

The 1,238 km² area covered by the Mayumba Permit is located about 460 km south of Libreville the capital of the Republic of Gabon (ROG) and is located directly to the south of the small port city Mayumba. The Mayumba Permit (APPENDIX 1), lies in the Nyanga province and its boundaries are given by the following coordinates (official datum in ROG, WGS-84) in the decree No. 006/MPGM/SG/DGMG/DLMEM. In this decree the boundaries are defined by the corner points as given in Table 1.

Table 1 Corner Points Defining the Mayumba Permit Boundary in Decimal Degrees (negative degrees are on the southern hemisphere, Lon. Longitude, Lat. Latitude)

Point	Lon.	Lat.	Point	Lon.	Lat.	Point	Lon.	Lat.
A	10.65	-3.35	**M**	11.20	-3.70	**Y**	10.97	-3.65
B	10.76	-3.35	**N**	11.22	-3.70	**Z**	10.92	-3.65
C	10.76	-3.43	**O**	11.22	-3.82	**AA**	10.92	-3.59
D	10.84	-3.43	**P**	11.20	-3.82	**AB**	10.87	-3.59
E	10.84	-3.46	**Q**	11.20	-3.90	**AC**	10.87	-3.56
F	10.93	-3.46	**R**	11.11	-3.90	**AD**	10.81	-3.56
G	10.93	-3.49	**S**	11.11	-3.87	**AE**	10.81	-3.52
H	11.00	-3.49	**T**	11.05	-3.87	**AF**	10.75	-3.52
I	11.00	-3.56	**U**	11.05	-3.77	**AG**	10.75	-3.47
J	11.08	-3.56	**V**	11.01	-3.77	**AH**	10.69	-3.47
K	11.08	-3.61	**W**	11.01	-3.71	**AI**	10.69	-3.44
L	11.20	-3.61	**X**	10.97	-3.71	**AJ**	10.65	-3.44

The original Mayumba Permit G5-595 was granted to Mayumba Potasse SARL by decree No. 0161/MMI/SG/DGPEM/DCMAE dated 23 February 2016. Mayumba Potasse SARL is a 100 % subsidiary owned by Equatorial Potash, which itself was a 100% subsidiary of Plymouth Minerals Limited at that time. Appendix 1 shows the first extension of the Mayumba Permit to Mayumba Potasse SARL which was granted by the Decree No. 006/MPGM/SG/DGMG/DLMEM on February 04, 2022. Mayumba Potasse SARL is a 100% owned Gabonese subsidiary of Equatorial Potash Pty Ltd.

No attempt to independently verify the land tenure information was made by the author.

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4.2 Property Title in the Republic of Gabon

Mining activities in Gabon are governed by the law No 037/2018 from 11 June 2019 regulating the mining sector in the Gabonese Republic (JORG, 2019, /10/). This law was established to stimulate the development of mining and to guarantee the property rights of both, local and foreign investors. According to the law, the state owns all Mineral Resources, but exploration and exploitation of these resources by private parties is permitted through different types of mining permits, which are granted by decrees. The permit holders have both rights and obligations, as defined by the law No 037/2018 from 11 June 2019. For different commodities and scales of mining (artisanal, small-scale, large scale) the law defines different ways to obtain mining rights. For a commodity like potash in the ROG the mining rights are obtained in two stages:

(1) The Exploration Permit ("Permis de recherches minières") gives the holder exclusive prospecting and exploration rights in a defined area to unlimited depth for the mineral substances it is issued for. The maximum size for an exploration permit is 1,500 km². The permit is valid for 3 years and can be extended twice for a period of 3 years each time upon application by the holder. The operational modalities of the exploration (and also exploitation) activities are specified and formalised by a mining convention that is negotiated between operator and the ministry responsible for mining. Depending on the results of the exploration activities carried out under the exploration permit, the permit holder shall have priority as regards to the granting of an exploitation permit for the mineral substances covered by the exploration permit. This requires that a feasibility study and an environmental impact assessment have been prepared and have been accepted by the ministries responsible for mining, economics and the environment.

(2) The "large scale Exploitation Permit" ("le Permis d'Exploitation Minière à grande échelle") gives the holder exclusive right to carry out exploitation activities in an area defined by the license, to an unlimited depth and in respect of those mineral substances for which the exploitation permit is granted. The validity of the permit depends on the lifetime of the project reported in the official feasibility study and is either 10 years which can be extended upon request by the permit holder for a period of 5 years per extension, or 20 years which can be extended upon request by the permit holder for a period of 10 years per extension. When the license expires and no request for extension is filed, a mine closure plan must be submitted. The operational modalities of the exploitation are specified and formalised by a mining convention that is negotiated between operator and the ministry responsible for mining.

At each stage of the mining rights acquisition process several steps are required (e.g. application, "publication", registration/filling payments, notarization, tax payments) before the application is converted to a permit. A full description of the process is documented in the law No 037/2018 from 11 June 2019 (JORG, 2019, /10/).

The registration payments to obtain an exploration permit amount to 1.5 million FCFA, with payments for the first extension amounting to 2.5 million FCFA and for the second extension 3.0 million FCFA. When the exploration permit is leased or sold to another company a payment of 10% of the transaction value is due. An annual payment of 1,000 FCFA/km² of the permit area is due every year during the first validity period of the permit, 3,000 FCFA/km² is due every year of the second validity period of the permit and 5,000 FCFA/km² is due every year of the third validity period of the permit.

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The registration payments for a “large scale exploitation permit” depend on whether the permit has a validity of 10 or 20 years and amount to 15 respectively 30 million FCFA with for every extension of the permit registration payments of 30 resp. 60 million FCFA. When the exploitation permit is leased or sold to another company a payment of 15% of the transaction value is due. Annual payments based on the surface area of the exploitation permit are due as listed in Table 2.

Table 2 Annual Payments Due for a “Large Scale Exploitation Permit” for the Original Validity Period and for Extension Periods

	10 year validity		**20 year validity**	
	Initial 10 year	**Annually during 5 year extension**	**Initial 20 year**	**Annually during 10 year extension**
Area (km²)	**million FCFA**	**million FCFA**	**million FCFA**	**million FCFA**
≤ 10	5.0	6.0	6.0	7.0
> 10 ≤ 20	6.0	7.0	7.0	8.0
> 20 ≤ 30	7.0	8.0	8.0	9.0
> 30 ≤ 40	8.0	9.0	9.0	10.0
> 40 ≤ 50	9.0	10.0	10.0	11.0
> 50 ≤ 70	10.0	11.0	11.0	12.0
> 70 ≤ 90	11.0	12.0	12.0	13.0
> 90 ≤ 100	12.0	13.0	13.0	15.0
> 100	0.1 x area /in km²)		0.12 x area in km²	

Within a year after obtaining an exploration or exploitation permit the owner has to sign a mining convention with the ministry responsible for mining. The mining convention is valid for the time period of the permit and can be re-negotiated for an extension.

In case of the exploration permit the mining convention describes the minimum obligations the owner of the permit has made regarding exploration work in the permit area as well as special legal, fiscal, economic, customs and financial conditions negotiated between owner and ministry. If the owner of the permit does not comply with the minimum obligations regarding the exploration work or within 12 months of signature of the convention, sanctions can be issued by the ministry ranging from fines over reduction of the permit area to withdrawal of the permit. The mining convention between Mayumba Potasse and the Gabonese government of 2017, remains in effect allowing exploration activities to continue on the project.

In case of a “large scale exploitation permit” the mining convention describes the investment schedule of the owner of the permit to construct the mine as well as special legal, fiscal, economic, customs and financial conditions negotiated between owner and ministry. This can also affect the free carried interest of 10 % in the project that is stipulated in the law No 037/2018 from 11 June 2019 (JORG, 2019, /10/). Sanctions can be issued by the ministry when the exploitation development work has not started 48 months after signature of the mining convention and range from fines to withdrawal of the permit.

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4.3 Royalties and Taxes

For an exploration license no special royalties or taxes are due beyond what has been described in the previous sections. Royalties and taxes are due to the Gabonese Government during commercial production, requiring an exploitation license. These consist of:

- a levy of between 5 and 10 % on the gross value of the product, less processing, transportation and insurance costs (mining royalties), to be settled in the mining convention;
- a 35 % tax on the income of the company. The amount of corporate tax to be paid is affected by a number of items that have to be negotiated in the mining convention.

In order to obtain an exploitation license a mining convention has to be negotiated with the Gabonese government. This convention can regulate for example the percentage of free carried interest that the Gabonese government attains in the project (10 % according to the law No 037/2018 from 11 June 2019 (JORG, 2019, /10/), but negotiable), and what further % in the company the Gabonese government might obtain as any other investor. It is also used to negotiate a relation between income tax and royalties (income tax not below 35 % and royalty not below 5 %) as well as eventual tax exemptions for the Company during construction and initial operation.

Further royalties and taxes due are not known to the author of this Report.

4.4 Property Status

MLP has entered into an option agreement with Equatorial Potash to acquire up to a 100 % interest in Equatorial Potash. Equatorial Potash holds the Mayumba Exploration Permit via its Gabonese subsidiary, Mayumba Potasse SARL. MLP can acquire 100% interest through staged cash payments, MLP share payments and by making minimum work expenditures on the project as outlined in Table 3.

The initial payment on the signing of the MOU and the second payment on the signing of the Definitive Agreement have been made.

4.5 Environmental Liabilities, Permits, and Risks for the Property

Part of the Mayumba Permit lies within the Mayumba National Park or the protection zone around the park. To the knowledge of the author no work for MLP has been planned or performed within the area of the park, but exploration work will take place in the protection zone around the park, which is allowed.

MLP complies with the requirements permitting access to the surface without restriction assuming adherence to the ROG Mining law (JORG, 2019, /10/) as well as with decree No 007/14 of August 01 2014 regarding the protection of the environment of the Republic of Gabon. As Plymouth Minerals did in 2017, MLP will engage environmental consultants (e.g. BICE) to manage the preparation of Environmental Impact Assessments (EIA) for the

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exploration program according to No 007/14 of August 01 2014 regarding the protection of the environment of the Republic of Gabon. The EIA, completed by Plymouth/Mayumba Potasse and accepted by the Gabonese government in 2017, remains in effect allowing MLP to continue on the project in the general area of the 2017 exploration activities. For Phase 2 drilling further to the south MLP is preparing the EIA documentation.

Within or close to the Mayumba Permit the French company Maurel & Prom has, between 2007 and 2010, conducted oil and gas production tests on the drill hole Banio 2, but to the knowledge of the author of this report no permanent production infrastructure has been installed.

Table 3 MLP Share Payments and Project Ownership with Minimum Exploration Expenditures for the Different Project Development Phases

Milestone	Cash	Shares	Minimum Exploration Expenditure	Earned Ownership in Project
signing of the MOU	$ 25,000 CDN	0		
Signing and TSXV approval of the definitive agreement	$257,000 USD	650,000		25 %
Resource estimate completion of phase 2 drilling	$300,000 USD	550,000	$2,500,000 USD	51 %
Completion of PEA/Scoping Study	$300,000 USD	1,000,000	$1,500,000 USD	70 %
Completion of Phase 3 drilling, revised resource estimate	$500,000 USD	1,500,000	$3,000,000 USD	
Completion of feasibility study	$3,000,000 USD	2,500,000	$5,000,000 USD	100 %
Totals	$4,375,750 USD	6,200,000	$12,000,000 USD	100 %

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5 Accessibility, Physiography, Climate, Infrastructure, and Local Resources

5.1 Accessibility

Access to the Mayumba Permit can be gained by unpaved track or by boat using the lagoon from the town of Mayumba. Access by road is controlled and limited by the park rangers of the Mayumba National Park, who restrict the use of the unpaved tracks that run parallel to the ocean along the NW boundary of the Mayumba Permit. Boat is the preferred option to access the exploration site in the southern area of the Mayumba Permit.

The town of Mayumba has a sealed air strip, however no regular flights. The town also has small ports and there have been recent plans to significantly extend the Mayumba port to facilitate export of resources from southern Gabon. Access to Mayumba is via ~650 km of road from Libreville, mostly good quality paved roads, with two unpaved sections each a few km in length. Libreville the capital of Gabon has several direct international flights from Europe and several African capitals daily.

Within the Mayumba Permit itself there are no transecting roads. A small network of unpaved roads exists around the Banio Potash Project drilling camp, and a separate network of roads connects the historical hydrocarbon exploration drill holes in the SW as well as a further network present near the village of Ndindi in the southern part of the Mayumba Permit.

It is also possible to access the southern part of the Mayumba Permit by car (~300 km) from the city of Pointe Noire in the Republic of Congo, which is also serviced by several direct international flights from Europe and Africa. Only about 50 km of the route from the ROC are paved roads in reasonable condition. The remaining 250 km consist of unpaved roads that can be used in the dry season with a 4x4 vehicle but are sometimes inaccessible during the wet season. This southern route involves crossing the Kouilou River by bridge, and two additional large rivers that must be crossed by ferry.

5.2 Physiography, Vegetation and Fauna

The Mayumba Permit can be divided in 2 parts. The SW part of the Property consists mostly of a low lying (maximum ~ 30 m above sea level) sand ridges, up to 3 km wide, which separates the lagoon and Atlantic Ocean. This area is relatively flat and in lower parts swampy. The NE and E parts of the Mayumba Permit rise relatively steeply to a maximum ~ 85 m from the S and then slopes gradually towards the NE to elevation levels of around 40 m. This sloped area is intersected by steep sided and sometimes deep gullies at an elevation of around 20 to 30 m above sea level. The area is covered with primary jungle dotted with areas of open grassland clearings that may reach a few 100 m² in size (e.g. camp area, Figure 3).

The fauna of the area reportedly consists of large mammals including elephant, gorilla, chimpanzee, hippopotamus, and antelopes, as well as numerous small mammals, reptiles, and birds. In the swampy parts of the property small amphibians can also be found.

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Figure 3 Open Area Between Mayumba Potash Camp Site and Landing Stage at the Lagoon

5.3 Climate

The Mayumba Permit is located in the Congo coastal basin which has a tropical climate characterised by high humidity and heat. The average temperature is about 25 °C and is up to 2 °C higher at the end of the wet season and 2 °C lower in the mid dry season. The dry season occurs from mid-May until mid-October with virtually no precipitation. The wet season is from mid-October until mid-May with an average over 150 mm of precipitation per month, mostly falling as short but strong showers.

5.4 Local Resources and Infrastructure

The Mayumba Permit is remote and to carry out the exploration work it will be necessary to have nearly all technical equipment and personnel available at the site. An independent exploration camp has previously been constructed and run by Mayumba Potasse between 2017 and 2018 in the southern part of the Mayumba Permit. This camp has been modernised and refurbished to support the ongoing exploration work.

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The town of Mayumba with about 5,200 inhabitants and nearby villages have previously provided labourers for the exploration work. Technical personnel will have to come from either Port Gentil or Libreville and for specialized tasks expatriate personnel will need to be brought in. Food and fuel can be obtained locally in Mayumba or from the provincial capital Tchibanga however most other materials as well as spares for equipment will have to come from Libreville or out of country.

Mobile phone connection covers large parts of the northern part of the Mayumba Permit, how-ever limited mobile phone connection exists in the southern part of the property. There are mobile phone towers in nearby villages in the south that can eventually be upgraded to allow mobile phone connection to cover most of the property, including access to the internet. For emergency back-up, satellite telephone connection is available.

For an eventual exploitation stage project, energy will be a major requirement. The hydrocarbon exploitation company PERENCO have recently agreed to bring a pipeline to the port area in Mayumba to provide gas to a proposed 20 mW power station that will be operated by the Gabon Power Corporation. The additional capacity for natural gas could be used by MLP, either for co-generation of steam and electrical power or just for steam generation and for product drying. Even though it is not yet clear whether and where a plant will be constructed, shipment of the final product (several 100,000 to million tonnes per year (tpy)), will require the construction of adequate port facilities near the town of Mayumba. MLP are in discussions with the operators of the future port facility in Mayumba, to ensure that there is adequate place for a potash facility and mooring of Panamax size ships at the future port.

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6 History

Potash was discovered in the coastal Gabonese-Congolese Basin during oil prospecting in Gabon in 1935. In the early 1950's, SPAFE (Société Petrolière de l'Afrique Française Equatoriale), a predecessor company to Elf Aquitaine, was granted the Mabora petroleum concession in an area around the town of Lambaréné. In 1954, SPAFE drilled hole Mabora Mamana-1 (MM-1) near Lake Azingo targeting oil below the salt layers. The MM-1 drill hole encountered the first ever indication of potash mineralization in central West Africa by intersecting a high grade sylvinite potash seam that reportedly graded 29 % K_2O. Several more holes were drilled also intersecting potash, however, potash exploration and hydrocarbon exploration concentrated on the Congo coastal basin further to the south. The Mayumba Permit in Gabon covers the northernmost on-shore extension of the Congo Coastal Basin.

The Congo Coastal basin has been intensively explored by numerous off-shore and on-shore drill holes and seismic surveys carried out since the 1950's. Most exploration was done for hydrocarbons and information is available from some of the drill holes from either the archive of Mines de Potasse d'Alsace (MDPA) or from published sources. There have also been several exploration campaigns specifically focused on potash, with relevant locations shown in Figure 2:

In the 1960's the MDPA drilled for the Syndicat de Recherches de Potasse au Congo (CPC) about 88 on-shore holes for potash exploration in the ROC part of the basin (historical drill holes with numbering K xx). Many of these drill holes were concentrated near the later Holle mine to define the Sylvite Resource there, but this campaign also provided a general outline of the potash deposit in the ROC part of the basin. This campaign ended with the opening of the Holle mine in 1969, which flooded in 1977 (Feuga et al., 2005 /7/). The information from this drilling campaign is not publicly available from the MDPA archive, but at least information from some drill holes are summarized in technical reports or literature for specific areas.

In the early 1990's MDPA drilled another series of 18 on-shore exploration holes (KOU xx) to delineate potential Sylvite resources at specific locations within the basin. This was combined with geophysical investigations near Lake Youbi, but this did not result in further works or definition of an area with Mineral Resources. The information from this drilling campaign is not publicly available from the MDPA archive.

Between 2005 and 2010, MagIndustries Corp. ran an exploration program and drilled 12 exploration holes and about 20 production holes for a carnallitite solution mining project near Mengo. The results of all drilling are summarized in technical reports (e.g. Rauche & van der Klauw, 2015 /18/).

Kore Potash Limited (former Elemental Minerals Limited) has carried out exploration and development work in their Sintoukola Exploration License area and have within this license defined a Sylvite Reserve for their Kola project (SRK et al, 2012, /20/). The report contains locations, depth intervals and analysis of the 44 new drill holes used for resource definition. Further drilling has taken place near Dougou (2 holes) that in combination with historical holes resulted in the definition of a Carnallite Resource and for the Dougou extension (DX 18 holes) which resulted in the definition of a Sylvite Resource. The location of these holes can be obtained and also whether Carnallite or Sylvite is present from reports, but no exact thickness and grade information is available from these 20 drill holes (Kore, 2015, /10/, 2020 /11/).

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Further potash exploration work has been carried out between 2010 and present within the Congo Coastal Basin, but the results are not publicly available or accessible. The company African Potash Limited has drilled 2 exploration drill holes in 2014 at their Lake Dinga prospect, but no information about location, depth, thickness and grade of the potash seams is provided (African Potash, 2017, /1/). The Chinese company Zhengwei Technique Congo, drilled an exploration hole south of the Lake Dinga area, but except for coordinates no information is available about this hole.

Kanga Potash drilled 3 exploration drill holes within their Kanga License area south of the Kouilou River (Strauss & Rigny, 2022, /21/). This summary does not provide detailed information about location and mineralisation of these holes.

There is no public information available about the ownership of the Mayumba Permit for potash and related salts prior to Mayumba Potasse Sarl. On-shore exploration for oil drilling as described in section 2.3 has taken place near and within the property and provides some information about the potash potential of the permit. This information was used by CSA (2016, /4/), to define exploration targets for the Mayumba Permit area consisting of Carnallite and Sylvite mineralisation. Mayumba Potasse drilled 3 potash exploration drill holes (Ba-001, Ba-002 and Ba-003) in 2017 to better define the Sylvite mineralisation.

A Mineral Resource Estimate on the Property according to JORC has been announced in a press release in 2018 by Infinity Lithium Corp. (Infinity) with Inferred Resources amounting to 1.7 billion tonnes of salt at an average 16.1 % KCl (Infinity, 2018, /8/). This mineral resource estimate used the ALS assays for the potash samples of Ba-002 and Ba-003 (see section 11.1) and applied a Radius of Influence of 1,600 m around these 2 drill holes.

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7 Geological Setting and Mineralisation

This section presents the regional geology of the area (section 7.1), a geologic model of the potash distribution (section 7.2), and the interpreted results of the exploration work, including definition of the potential extent of the mineralisation (section 7.3).

7.1 Regional Geology

Geologically, the Mayumba Permit is at least partly located in the Congo Coastal Basin which extends from Equatorial Guinea in the North, to Angola in the South (Feuga et al., 2005, /7/). The basin is of Aptian age (lower Cretaceous), and represents the eastern flank of the pre-Atlantic continental rift basin which continues on the opposite coast of the South Atlantic Ocean in the Sergipe Basin, Brazil (e.g. Davidson, 2007, /5/), where a potash deposit is being exploited. To the east, the Congo Coastal Basin is bordered by Pre-Cambrian crystalline rocks, known as the Mayombe basement (e.g. De Ruiter, 1974, /6/).

7.1.1 Lithostratigraphy

Because of intensive exploration for oil and potash in the ROC, the stratigraphy of the basin is well known. In general, the thickness of the sedimentary strata changes from larger thicknesses along the coast to less thick strata towards the east, close to the Mayombe basement boundary. From the bottom (older strata) to the top (younger strata), the following formations have been differentiated (Figure 4):

On top of the **Crystalline Basement** a series of grey-green sandstones with interbedded pyrite bearing green claystones, known as **Cocobeach Formation** (Série du Cocobeach, or Chela Formation) occurs. The contact between the Cocobeach Formation and the overlying evaporites is an unconformity.

The overlying evaporite sequence contains three individual formations,

- the Salt Formation at the bottom,
- the Anhydrite Formation

and

- the Dolomitic Limestone Formation at the top of the evaporite sequence.

The **Salt Formation** (Série Salifère, Loeme Formation) is divided into ten large depositional cycles, numbered by roman numbers (from bottom to top). Each of these cycles consists originally of several alternations of the sequence of rock salt, carnallitite and sometimes with layers rich in Bischofite and/or Tachyhydrite. Locally, the Carnallite has been transformed to a secondary Sylvite (see Section 8). A thicker layer rich in insoluble material “clay” or clay rich rock salt defines the base of each cycle.

The Salt Formation is overlain by the **Anhydrite Formation** (Série Anhydritique, also Loeme Formation), which consists of alternating anhydrite and marls each of up to 5 m thickness. The anhydrite is variable in

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appearance varying from nodular, brecciated, or laminated to massive. The marls are blue-grey to black in colour and are locally very clay rich.

The Anhydrite Formation is overlain by the **Dolomitic Limestone Formation** (Sendji Formation), which consists of several kinds of more or less dolomitised limestones with some layers of marl. The contact to the overlying strata, the Grey-Blue Claystone Formation, is gradational.

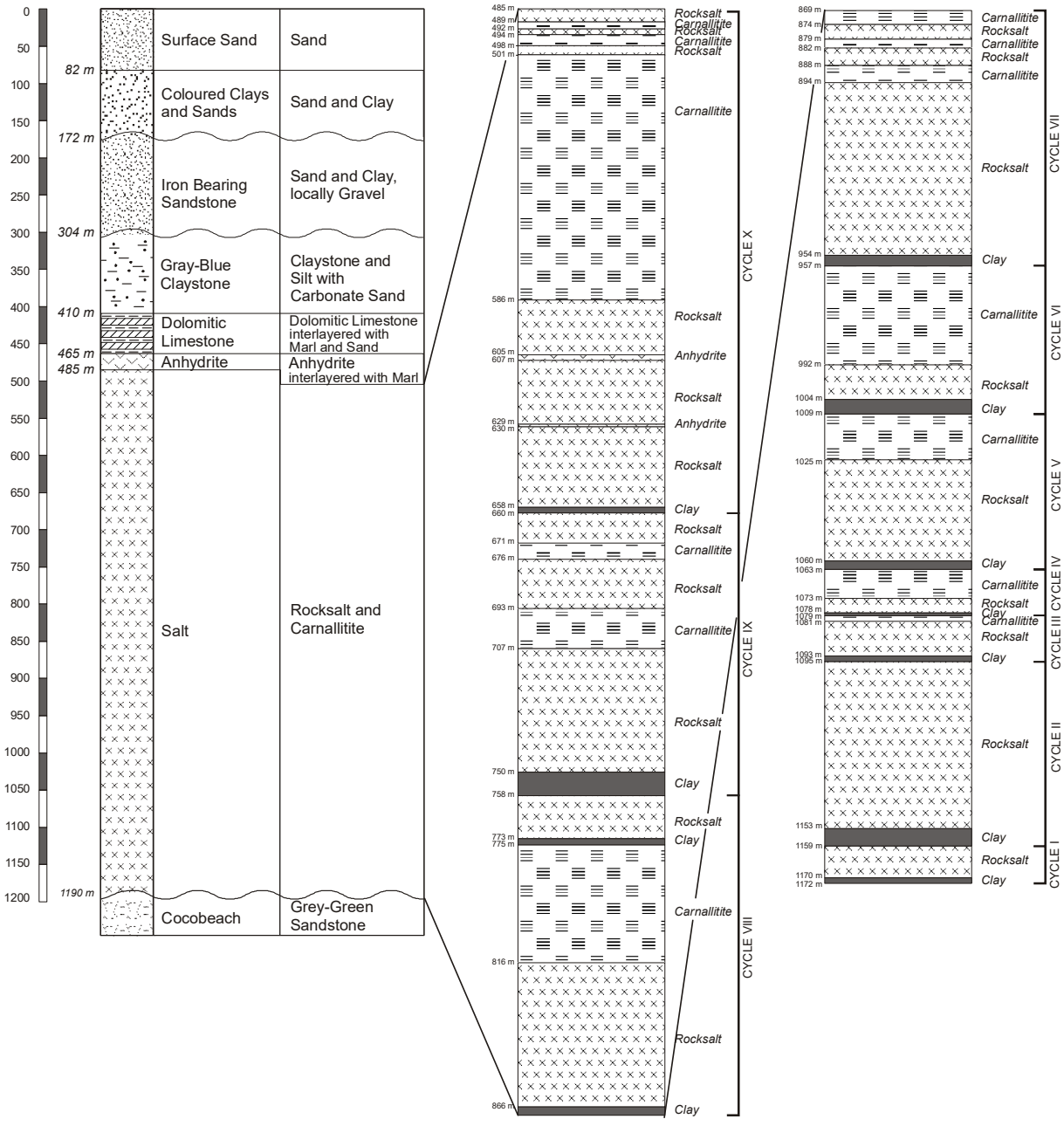


Figure 4 Stratigraphy of the Congo Coastal Basin simplified after Exploration Drill Hole K3 (Schlund & VandenBroucke, 1960, /19/ in van der Klauw & Grüschow, 2007, /21/)

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The **Grey-Blue Claystone Formation** (Série Argilo-Gréso-Dolomitique, Sendi Formation) consists of grey-blue to grey-green claystones to siltstones and fine grained sandstones with a dolomitic cement and some layers/lenses of limestone. The contact to the overlying Iron Bearing Sandstone Formation is an unconformity.

The **Iron Bearing Sandstone Formation** (Sables Grossiers Ferrugineux, Paloukou Formation) consists of layers of relatively coarse grained sandstones, locally with iron concretions and is separated by layers of plastic red clay strata. Occasionally, thin discontinuous lenses of gravel are observed. In the top of this series, phosphate horizons can be present. The unconformable contact of this series to the overlying Coloured Clays and Sands Formation suggests that the region has been tectonically active and that locally the phosphate horizons have been removed through erosion.

The **Coloured Clays and Sands Formation** (Série de Cirques) consists of alternating layers of sand and clay, which through lateritisation range in colour from yellow, over pink to dark red. If the phosphate horizons are missing, it is not always possible to distinguish between the Coloured Clay and Sands and Iron Bearing Sandstones and all are then referred to as Iron Bearing Sandstones.

Traditionally the **surface sands** are distinguished as a separate unit, but since they are just washed out or weathered Coloured Clays and Sands, they are often not separately mentioned.

It is not possible to precisely establish the boundaries for the 4 upper formations from drill hole cuttings and/or geophysical wireline logs only.

7.1.2 Tectonics

The evaporite rocks in the Congo basin are generally flat lying with a slight (<< 5°) dip to the Southwest. Typically, towards the E the top of the salt is relatively shallow and only the lower cycles of the sequence are preserved, or upper cycles have not been deposited, whereas towards the W the top of the sequence occurs deeper and all 10 cycles are completely preserved.

The basin is divided into large blocks by approximately NW-SE striking fault zones that are usually interpreted as normal faults (MDPA, 1989, /14/ in van der Klauw & Grüschow, 2007, /21/). Locally, as for example at the former Holle mine, uplifted blocks between relatively closely spaced NW-SE striking fault zones can occur (MDPA, 1987, /13/, 1989, /14/, in van der Klauw & Grüschow, 2007, /21/). Similar structures are responsible for the sylvinite mineralisation in the Kola permit held by Kore Potash (Pedley et al., 2016, /16/). The interpretation of the seismic data (Section 9), suggest a similar uplift structure for the block with the drill holes Ba-001, Ba-002 and Ba-003 (Figure 5).

The basin is further subdivided into smaller blocks by subordinate and less pronounced NE-SW striking faults (e.g. at Mengo, Rauche & van der Klauw, 2015, /18/). These faults seem to have been active during the opening of the South Atlantic in the Cretaceous and divide the basin in blocks with similar stratigraphy, but different thickness of formations (e.g. Brownfield & Charpentier, 2006, /2/). Such faults also have also been interpreted from the seismic data from the southern part of the Mayumba Permit (Figure 5).

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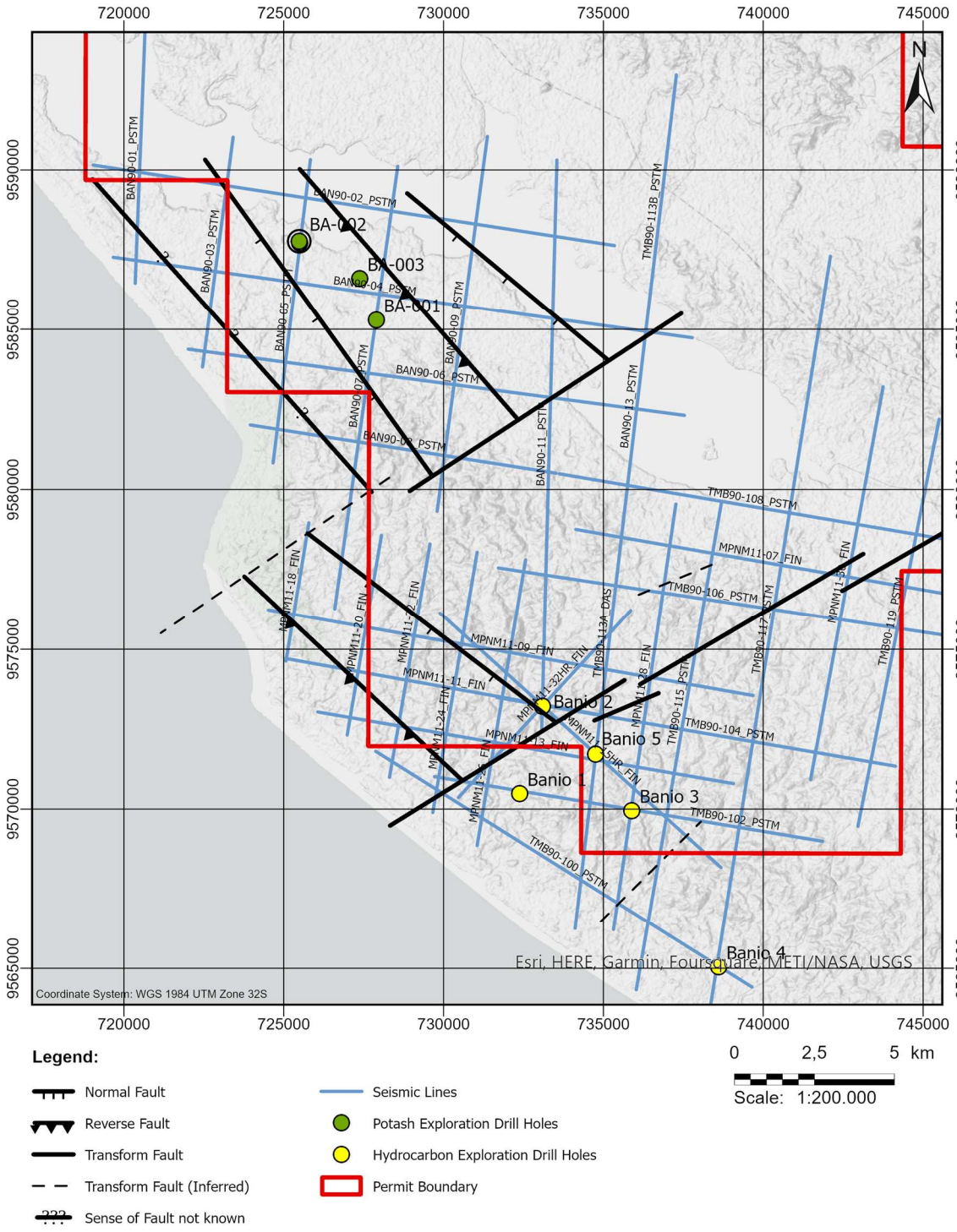


Figure 5 Fault Structures constructed from the Offsets of Top and Bottom of the Evaporite Section Interpreted from the Seismic Sections

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7.1.3 Hydrogeology

In the Congo Coastal Basin, the Coloured Clays and Sand Formation is the first potential aquifer, with direct contact to surface water and usually has hydrostatic pressure. Further down, groundwater is pressurized and can be encountered in coarse sand lenses of the Iron Bearing Sandstone Formation and also in the coarse grained parts of the Gray Blue Clay Formation. In this formation, especially towards the Dolomitic Limestone Formation, the base of the strongly jointed Dolomitic Limestone Formation should also be considered as a potential aquifer in the succession (MDPA, 1987, /13/ in van der Klauw & Grüschow, 2007, /21/). In contrast to other evaporite basins, experience from the different drilling campaigns in the areas has shown that the contact of the Salt Formation to the Anhydrite Formation is generally dry.

7.2 Stratigraphic Potash Distribution in the Congo Coastal Basin

The potash in the Congo Coastal Basin is present as single seams of varying thickness ranging between a few cm up to 20 m (e.g. Rauche & van der Klauw, 2015, /18/). The potash seams are separated by rock salt with clay layers that also vary between a few cm thickness to over 100 m thickness. The carnallitite cycles (e.g. Figure 4), as well as single carnallitite seams within these cycles can be correlated over large areas of the basin (e.g. Pedley et al., 2016, /16/). Depending on the position within the basin during deposition and of course development after deposition, the thickness of the seams or the cycle can vary between zero (not deposited or removed near the rim of the basin), to the largest thickness in central parts of the basin. Even if potash seams do not have a constant thickness or even disappear, the thickness of the rock salt layers between the seams varies only gradually over the basin and allows correlation of the potash seams (or their positions within the sequence) over the entire basin.

The original subdivision of the evaporite cycles has been made by MDPA geologists (e.g. Schlund & Vandenbroucke, 1960, /19/) and within the cycles different potash seams have been assigned. An interlayering of potash and Halite dominated rocks with thickness of the Halite dominated layers below about 1 m have been grouped together as a single potash seam, but the boundaries of such seam are not unequivocal. The MDPA geologists have divided the evaporite sequence into 10 cycles containing numerous potash seams as summarized in Table 4.

A natural gamma ray log is the best tool to correlate cycles and seams between drill holes from the basin, however, the seams near the top of cycle VI and cycle VII can be extremely variable depending on the extent of Tachyhydrite mineralisation present at this level.

7.3 The Mineralisation in the Mayumba Permit

This section presents the interpretation of the available exploration data in and near the Mayumba Permit area to define the mineralisation in the Mayumba Permit and discusses first the interpretation of the exploration data (section 7.3.1). This will follow in part the seam concept of the MDPA geologists, but combine some seams to horizons, especially where the boundary of seams cannot be unequivocally defined. This is followed by a discussion about the grade and thickness of the potash seams and horizons of the different cycles

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(section 7.3.2) and what is known about the tectonics in the investigated area (section 7.3.3). The final section describes the concept of the geological model of the deposit (section 7.3.4).

Table 4 Cycles with Potential Number of Potash Seams and Some Typical Patterns

Cycle	Seams	Remarks
X	9	Seam 1 is a thin high grade Carnallite seam present 3 to 5 m below the remaining seams. The seams 2 to 6 consist of interlayers with variable thickness dominated by Carnallite or Rock Salt. Seam 7 is a 15 to 20 m thick high grade Carnallite seam, with a ~ 0.5 m thick clay rich barren zone near the middle. Typically, there is at least about 80 m rock salt between the first seam of cycle X and the last seams of cycle IX
IX	10	Seam 1 and 2 are high grade but thin and sometimes absent. Seam 3 typically has 6 to 10 m thickness at very high grade Carnallite, the upper seams are high grade, but thinner and may be mineable where the rock salt between the upper seams is relatively thin
VIII	8	Seam 3 typically has over 8 m thickness at high grade Carnallite. Seam 4 is variable in thickness between 1 and 15 m, with high grade Carnallite. Higher seams are usually relatively thin and separated by several meters of rock salt. Typically. there is 35 to 50 m rock salt between the first seam of cycle VIII and the last seam of cycle IX
VII	14	The lowermost 7 seams have a very typical thickness pattern (e.g. Figure 6) of Carnallite and rock salt dominated layers. Seam 8 to seam 13 consist of interlayering of rock salt and Carnallite dominated layers, near the top Carnallite and Tachyhydrite dominated layers are interlayed. Seam 14 can occur on top of a variable thickness Tachyhydrite.
VI	12	seam 12 can occur on top of a variable thickness Tachyhydrite bearing section, the remaining seams are not very typical
V	9	The base of cycle V is relatively thick (5-10 m) clay rich rock salt layer, the upper 5 seams can be grouped to a single thick seam, whereas the relatively thin lower 4 seams have a typical thickness pattern (e.g. Figure 6)
IV	1	the single seam is typically high grade Carnallite in the lower part and consist of cm to dm scale interlayers of Halite and Carnallite in the upper part
III	2	seam 1 is thin and low grade and often absent, seam 2 is a relatively thick homogeneous seam and readily recognisable
II	3	the two upper seams are low grade and often absent or thin, the lower seam is usually relatively thick with high grade Carnallite
I	0	not basin wide developed

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7.3.1 Discussion and Interpretation of the Available Data

To evaluate the extent of mineralisation within the Mayumba Permit, the 3 potash exploration drill holes (Ba-001, Ba-002 and Ba-003) and the 6 historical hydrocarbon exploration drill holes (Banio-1, Banio 2, Banio 3, Banio 4, Banio-5 and BATC-1) have been evaluated. The position of these holes is shown in Figure 1. The evaluation of the geophysical logs for the drill holes Banio-1 to Banio-5, and Ba-001 to Ba-003 allowed to distinguish between, overburden, clay and Anhydrite dominated rocks and within the evaporite section between rock salt, Carnallite dominated rock, Interlayering of rock salt and Carnallite dominated rocks, Tachyhydrite dominated rocks, Interlayering of Carnallite and Tachyhydrite dominated rocks. Probably due to the use of an inadequate mud over the evaporite section (see section 10.1), the quality of the geophysical logging data of the Banio holes was insufficient to obtain a robust estimate about the Carnallite content of the seams, even for the drill holes for which at least a natural gamma ray, a density and a caliper log were available. The lithological and stratigraphic interpretation and correlation from the geophysical logs and if available core data of the drill holes Ba-001 to Ba-003 and BATC-1 are shown in Figure 6 and for the drill holes Banio-1 to Banio-4 in Figure 7 (see Figure 1 for drill hole locations).

Figure 6 indicates that for Ba-002 drilled and cored in 2018 and extended in 2023 there is a good correlation with the geophysical log of nearby hole BATC-1, except for the cycles III and IV where due to interlayering of relatively thin potash and rock salt seams as well as clay seams a resolution of potash seams from the geophysical logs was uncertain. The Figure also indicates that the top of the salt section is located within Cycle VIII at Ba-002 and BATC-1 around 245 m depth, near the top of Cycle VIII at Ba-003 around 235 m depth and at Ba-001 near the top of Cycle VII at 311 m depth. The top of the salt (a potential erosion surface) dips with a few degrees towards the SW, whereas the stratigraphic boundary (bottom cycle VIII) dips also towards the SW, but at a lower angle. Because there is no information about the Sylvite/Carnallite interface in Ba-001, there is no information about the dip of this interface. For the Cycles V to VII Ba-002 and BATC-1 correlate very well with Ba-003 and suggest that in Cycle VII:

- The top section consists of rocks dominated by Tachyhydrite followed by a section where Carnallite dominated layers are interlayered with rock salt. The single Carnallite layers within the interlayering might locally have an adequate grade and thickness to be considered for mining. The drill hole Ba-001 was stopped in this Tachyhydrite dominated layer. The lowermost 7 seams can be grouped together in 4 horizons that regarding thickness of the Carnallite dominated layers and the rock salt layers can be correlated very well between the drill holes.

These drill holes suggest for Cycle VI:

- That no Tachyhydrite is present and that the 12 potash seams can be grouped in 2 horizons dominated by Carnallite with interlayers of rock salt, with similar thickness between the wells that are separated by about 1 m thickness of rock salt.

These drill holes suggest for Cycle V:

- That the upper seams together form a Carnallite dominated Horizon. The 4 thinner lower seams can also be readily identified from the geophysical logs and in the core.

The core data from the extension of Ba-002 confirm that:

- for Cycle IV that the Carnallitite dominated seam is high grade at the bottom and is lower grade due to numerous rock salt intercalations in the upper part;
- for Cycle III that only a single seam with few rock salt intercalations is present;

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- at this location in the basin no potash seams are present in Cycle II.

The observations from Cycle VIII for these wells are more difficult to interpret, since in Ba-002 all Carnallite has been completely transformed to Sylvite, which depending on intensity of the overprint can reduce the thickness of the seams by 65 % or even to zero meters. In Ba-003 only the upper seams are transformed to Sylvite. In Ba-003 the 2 lowermost Carnallite dominated seams separated by nearly 2 m of rock salt, are correlated with seam 3 of MDPS, whereas the seam with Carnallite at the bottom and transformation Sylvite at the top is considered to represent seam 4. The actual top of this seam 4, which is easy to define when it is developed as Carnallite, is more difficult to pinpoint in Ba-003, because the Sylvite transformation reaction resulted in an interlayering on a ~ 0.5 m scale of rock salt layers with layers consisting of rock salt with up to 25 % Sylvite. Further gamma ray peaks higher in the section are interpreted to represent the transformed thin Carnallite seams, no present as low grade Sylvinite seams- near the top of Cycle VIII. At Ba-002 seam 3 and seam 4 seem to be present as relatively low grade Sylvinite interlayered with rock salt. There are no clear indications that that upper seams from Cycle VIII are present in Ba-002 or BATC-1.

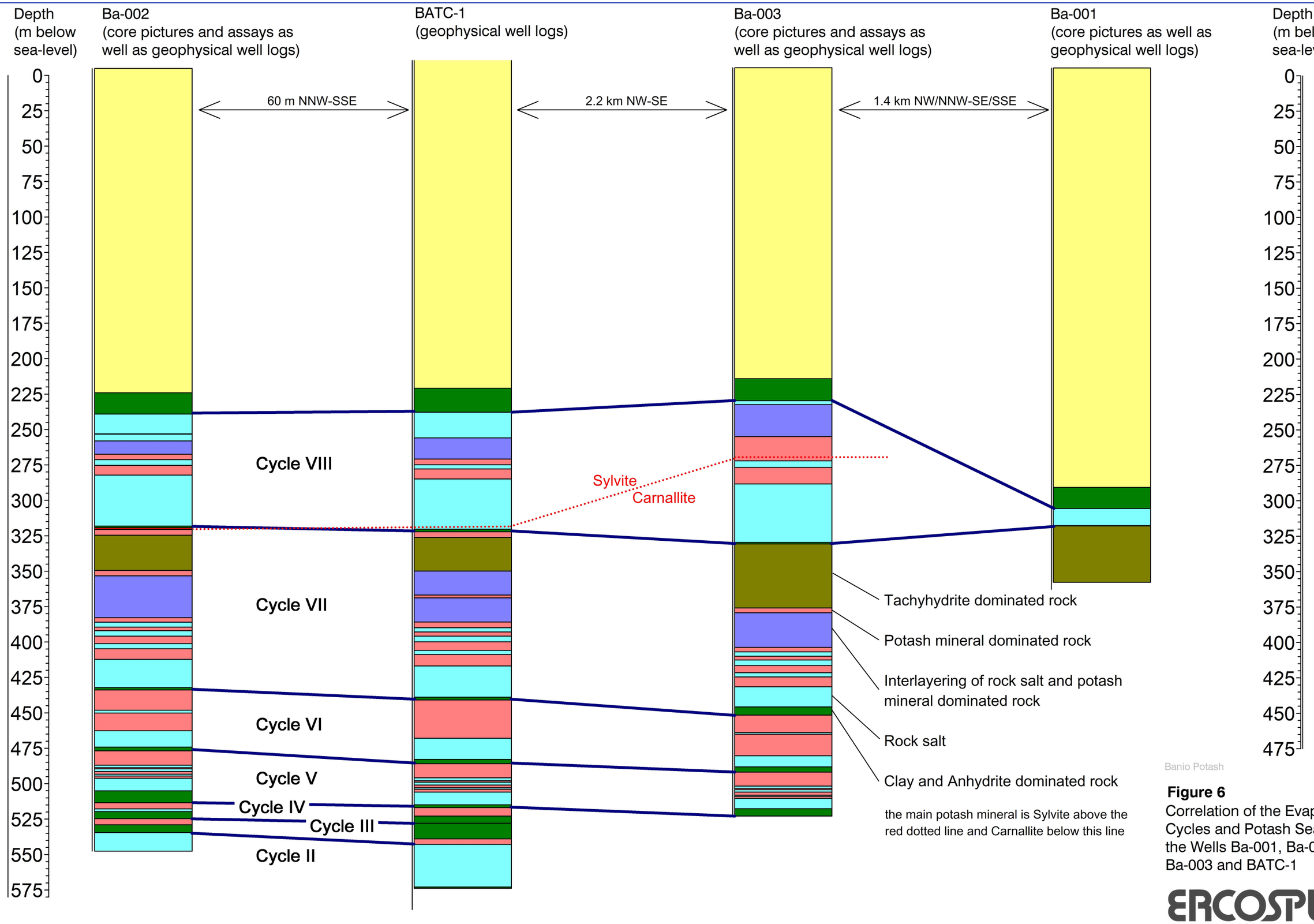
Figure 7 indicates that at least for the Cycles V to VII the observations on the thickness distribution of most the potash seams or horizons from the Banio drill holes are comparable to the drill holes Ba-002 and Ba-003. Differences in overall thickness of Cycle VII are mainly due to differences in the thickness of the Tachyhydrite sections at the top of Cycle VII. The Banio holes also have generally somewhat thicker lower rock salt sections in each cycle. The carnallitite in Cycles III and IV from Ba-002 have been identified in Banio-4 and Banio-5, but in the other Banio holes either only one carnallitite (Banio-3) or no carnallitite of reasonable thickness could be identified in these cycles. Comparable to Ba-002, Banio-1 shows only very thin carnallitite in Cycle II, whereas all other Banio drill holes show appreciable thickness of a Cycle II carnallitite.

The Banio holes do not show any indication that Carnallite has been transformed to Sylvite and with exception of Banio-5 (probably due to problems with the measurement while drilling technique for the natural gamma log), all show several carnallitite seams or horizons in the Cycles VIII to X. In Cycle VIII seam 3 and seam 4 can be identified and a few higher seams are present interlayered with thicker rock salt seams. In Cycle IX seam 3 can be identified, but in contrast to the ROC another thicker Carnallite seam can also be identified. Above this second seam the thin upper seams interlayered with rock salt can also be identified. The Cycle X carnallitite seams as identified in Table 4 are present in the wells Banio-1 to Banio-3, but not in Banio-4, where the top of the salt section appears to cut off these seams. Banio-4, is different in other respects too, since for Cycle VIII to X, it has a thicker rock salt sequence between the basal clastics and the first carnallitite seam than the other Banio holes.

The available exploration drill hole results and the seismic interpretation enable to define a potash deposit consisting mainly of Carnallite over most of the southern part of the license area (e.g. Figure 8), since the very good correlation of potash seams and horizons between the Ba-holes in the NW and the Banio holes in the SE for the cycles VII to V, combined with the knowledge from the ROC that similar seams and horizons occur there too, suggest that wherever the seismic interpretation shows a reasonable thickness of the salt bearing section (> 300 m), there is a reasonable prospect of finding similar seams or horizons when drilling within this area.

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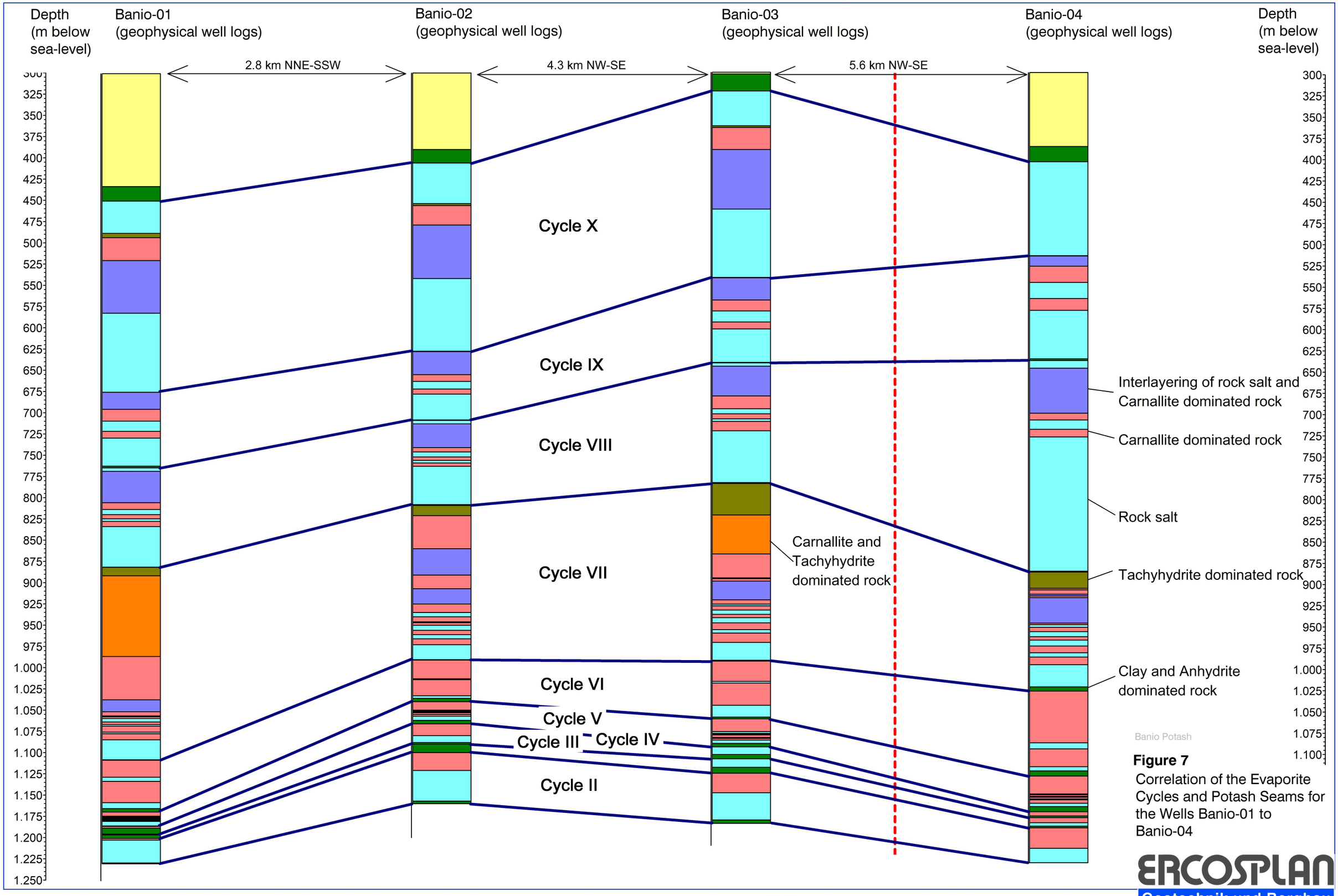


Banio Potash

Figure 6
Correlation of the Evaporite Cycles and Potash Seams for the Wells Ba-001, Ba-002, Ba-003 and BATC-1

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Banio Potash

Figure 7
Correlation of the Evaporite Cycles and Potash Seams for the Wells Banio-01 to Banio-04

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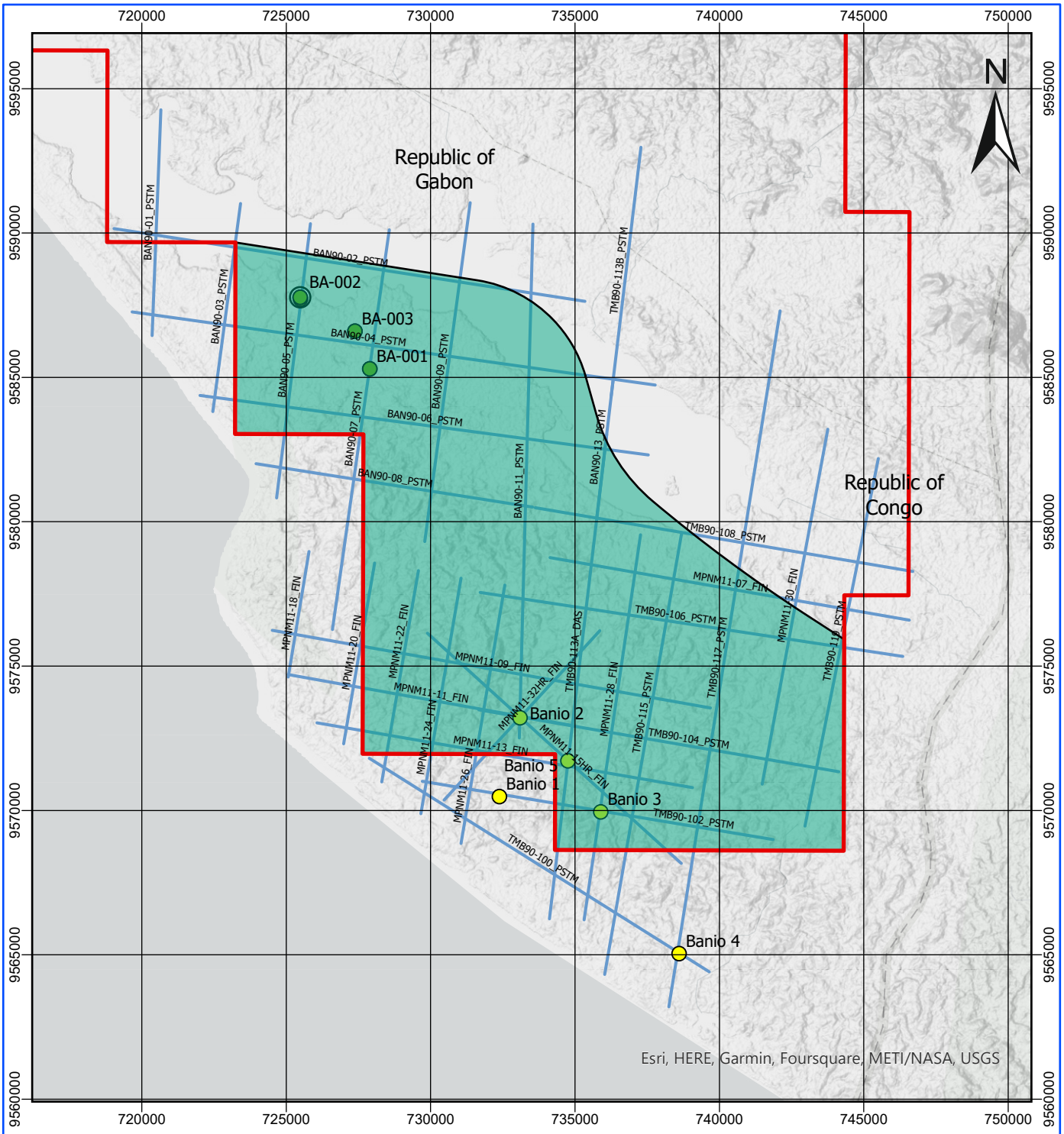
Date: 28.06.2023
Z:\23-006_MillennialPotash_PotashExpl_Banio\05_Geologie\06_Drawings\Correlation_Banio_wells_evap.pdf

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Legend:

- Seismic Lines
- Permit Boundary
- Potential Potash Deposit
- Potash Exploration Drill Holes
- Hydrocarbon Exploration Drill Holes

Millenial Potash

Figure 8

SE Corner of the Mayumba Permit with the Positions of Drill Holes and Seismic Surveys defining an Area with potential Potash Deposit

Scale: 1:200.000

0 5 10 Kilometers

Coordinate System: WGS 1984 UTM Zone 32S

Datum: 26.10.2023
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7.3.2 Thickness and Grade of Potash Seams

Although numerous potash seams and horizons have been identified in the previous section it is only possible to provide accurate information about thickness and grade of the seams and horizons that are present in the drill holes Ba-002 and Ba-003. These drill holes have beside assay information from cores high resolution natural gamma ray logs that have been used to verify depth and thickness of the seams and horizons identified from the assaying of core samples. For the other drill holes only an approximation of the thickness of the seams and horizons from the geophysical logs (see APPENDIX 2 and section 10.1) and information about grade as “extrapolation” from Ba-002 and Ba-003 or from published data from projects located in the ROC (e.g. Rauche & van der Klauw (2016, /18/) for carnallitite seams in cycles VIII to X from Mengo, SRK et al. (2012, /20/), for sylvinite seams in cycle VIII and IX from Kola and Rauche & van der Klauw (2010, /17/), for carnallitite seams in cycles II to VII from Makola).

Taking into account that the seams and horizons defined might be used for Mineral Resource Estimations, only seams that are potentially mineable and can be processed to a MOP product will be discussed. For a carnallitite seam or horizon from Ba-002 or Ba-003 to be considered mineable by solution mining it has to be > 2.5 m when single and > 1.25 m when other seams are present within 5 m vertical distance and have a Carnallite content > 47 %. For conventional or solution mining of Sylvinite in Ba-002 and Ba-003 the thickness has to be > 2 m and the Sylvite content > 16 %. Combined Sylvite/Carnallite seams (e.g. Cycle VIII seam 4 in Ba-003, Cycle VII seam 14 in Ba-002) have been considered as separate seams. For the Banio drill holes with no assay information the minimum thickness of a seam or Horizon to be considered as mineable has to be ≥ 2 m, with an average natural gamma reading over the section considered over 65 - 90 API, depending on the maximum intensity measured over the well. The potential mineable potash seams and horizons will be discussed from top to bottom.

For Cycle X a thick and potentially mineable potash seam (7) is present in several of the Banio drill holes (Table 5). For a seam in a similar position at the Mengo project in the ROC an estimated composition of about 68 % Carnallite (18.2 % KCl), 23 % Halite, 9 % Tachyhydrite with traces of clay and Anhydrite, with a thickness in the range of 15 to 21 m has been reported (Rauche & van der Klauw, 2016, /18/). In the same report (Rauche & van der Klauw, 2016, /18/) a further combined horizon has been identified in Cycle X consisting of an interlayering of rock salt and Carnallite dominated layers with an average Carnallite content of 44 % (11.8 % KCl). It is possible that such a horizon can also be identified in the Banio drill holes, but with only the historical geophysical logs for these holes a definition of its thickness at a reasonable KCl grade for this horizon is not possible. This horizon, therefore, is not further considered.

Table 5 Estimated Thickness based on Geophysical Logging Data for the Cycle X Carnallitite Seam in the Banio Drill Holes within and near the Mayumba Permit, x is not present, - no information available.

Drill Hole	**Banio-1**	**Banio-2**	**Banio-3**	**Banio-4**	**Banio-5**
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 7	27	23	26	x	-

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For Cycle IX the uppermost seams can be identified from the Banio drill holes, but again with only historical geophysical logging data it is not possible to confidently define a thickness by combining the thin seams in a horizon with a reasonable KCl grade for mining. The data, however, suggest that some of the middle seams (6 and 7) at least can be combined to a mineable horizon not present in the ROC and that the seam 3 is definitely mineable (Table 6). There is no information about Carnallite grade of the combined middle horizon, but at the Mengo project seam 3 consists of on average of 90 % Carnallite (~ 24 % KCl), 10 % Halite and trace amounts of Bischofite, Anhydrite and clay and has a thickness in the range of 8 to 12 m (Rauche & van der Klauw, 2016, /18/). The seam 3 is called the Hanging Wall Sylvite Seam (HSS) in the Kola area and there attains a thickness of about 3 m and can consist of up to 55 % Sylvite (SRK et al., 2012, /20/).

Table 6 Estimated Thickness based on Geophysical Logging Data for the Cycle IX Carnallitite Seams in the Banio Drill Holes within and near the Mayumba Permit. - limited information available

Drill Hole	**Banio-1**	**Banio-2**	**Banio-3**	**Banio-4**	**Banio-5**
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 6-7	14	8	13	12	-
Seam 3	8	6	8	14	-

Based on the assay data and the geophysical logging data the potentially mineable potash seams 2, 3 and 4, presented in Table 7 have been identified in Cycle VIII of drill holes Ba-002 and Ba-003. Based on the historical geophysical logging data the same seams can also be identified in the Banio drill holes (Table 8). Additionally, the logs of the Banio drill holes suggest that seam 8 might have an adequate thickness and grade for solution mining (Table 8). Regarding seam 8, no thickness and grade information has been reported from any ROC projects. Seam 4 has been described from the Mengo Project (Rauche & van der Klauw, 2016, /18/), with a thickness increasing from less than 1 m to 15 m. at an average Carnallite grade of 65 % (~17 % KCl). This combined seam is called the Upper Sylvite Seam (USS) in the Kola area, where it has 4 to 5 m thickness at a Sylvite (KCl) grade of 40 % to 50 % (SRK et al., 2012, /20/). From the assays of Ba-002 and Ba-003 as well as from the gamma ray logs of the Banio holes, the seam 4 within the Mayumba Permit, might be relatively thick, but seems much more inhomogeneous regarding grade distribution than further south in the ROC. The combined seam 2 and seam 3 for the Banio and Ba drill holes separated by 2 to 3 m of rock salt have also been described in the Mengo area with a rock salt layer between them in the range of 1 m only (Rauche & van der Klauw, 2016, /18/). The average grade over the combined seams and the rock salt is reported as an average of 65 % Carnallite (~17 % KCl). This combined seam is called the Lower Sylvite Seam (LSS) in the Kola area, where it has 4 to 5 m thickness at a Sylvite (KCl) grade of 40 % to 50 % (SRK et al., 2012, /20/). Compared to the Ba-002 and Ba-003 data in the Mayumba Permit these combined seams seem to have a higher KCl grade in the ROC to the south than in the Permit area

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Table 7 Summary of Seams considered mineable in Cycle VIII in Drill Holes Ba-002 and Ba-003

	Ba-002	KCl		Ba-003	KCl	
	thickness (m)	grade %	mineral	thickness (m)	grade %	mineral
Seam 4a				2.7	18.4	Sy
Seam 4b				2.3	19.0	Sy
Seam 4c				2.5	21.1	Sy
Seam 3	2.1	24.6	Sy	4.6	17.0	Ct
Seam 2	2.7	25.2	Sy	5.1	14.5	Ct

Table 8 Estimated Thickness based on Geophysical Logging Data for the Cycle VIII Carnallitite Seams in the Banio Drill Holes within and near the Mayumba Permit. – no information available

Drill Hole	Banio-1	Banio-2	Banio-3	Banio-4	Banio-5
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 8	3	3	4	7	-
Seam 4	8	5	15	8	-
Seam 3	5	4	6	10	-
Seam 2	6	4	11	9	-

Based on the assay data and the geophysical logging data the potentially mineable potash horizons/seams 1-2, 3-4, 5, 6-7 and 8 as well as 9 and 10 presented in Table 9 have been identified in Cycle VII of drill holes Ba-002 and Ba-003. Especially the seams 8 to 13 consist of a highly irregular interlayering of rock salt and Carnallite dominated layers (e.g. Figure 9), where the definition of top and bottom of the different seams is somewhat arbitrary. Even using the assay data it is often just a matter of a few cm, or a few 0.1 % of average KCl grade that make the difference whether or not a seam is considered potentially mineable and shown in Table 9 (e.g. seam 9 and 10 in Ba-002) or not (e.g. seam 9 and 10 in Ba-003). At the top of cycle VII, the drill hole Ba-002 shows a relatively high-grade potash seam (seam 14), containing 2 m sylvinite with 30.8 % Sylvite at the top and 2.9 m carnallitite with 62.8 % Carnallite at the bottom. This seam overlies a thick sequence of Tachyhydrite and was only observed in this single drill hole. Extrapolation of this potash seam over a larger area is not possible and with the seam directly on top of the Tachyhydrite mining of this seam is technically not feasible. With only historical geophysical logging data it is not possible to eventually define a thickness with a reasonable KCl grade for mining for seams 8 to 13 for the Banio holes. The seams/horizons 1 to 7 can be readily identified in the logs of the Banio holes and the thicknesses of these seams/horizons are given in Table 10. No information about grade of these seams/horizons is available from the projects in the ROC, but grades are considered to be comparable to the results of Ba-002 and Ba-003.

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Table 9 Summary of Seams considered mineable in Cycle VII in Drill Holes Ba-002 and Ba-003

	Ba-002	KCl		Ba-003	KCl	
	thickness (m)	grade %	mineral	thickness (m)	grade %	mineral
Seam 10	1.3	13.4	Ct			Ct
Seam 9	1.5	14.0	Ct			Ct
Seam 8	1.6	12.6	Ct	1.4	14.5	Ct
Seam 6-7	3.1	13.2	Ct	3.3	15.0	Ct
Seam 5	2.6	15.5	Ct	2.6	16.8	Ct
Seam 3-4	5.4	14.6	Ct	5.0	15.0	Ct
Seam 1-2	7.5	16.2	Ct	7.0	16.7	Ct



Figure 9 Core of Cycle VII at Drill Hole Ba-002 Showing Banded Rock Salt with Carnallite Growth at the Layers Rich in Insoluble Material, Resulting in an Irregular Carnallitite Rock Salt Interlayering (Core Box length 1.0 m)

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Table 10 Estimated Thickness based on Geophysical Logging Data for the Cycle VII Carnallitite Seams in the Banio Drill Holes within and near the Mayumba Permit

Drill Hole	**Banio-1**	**Banio-2**	**Banio-3**	**Banio-4**	**Banio-5**
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 6-7	2	6	5	5	6
Seam 5	3	3	4	4	4
Seam 3-4	7	5	8	8	9
Seam 1-2	7	7	11	9	11

Based on the assay data and the geophysical logging data the potentially mineable potash horizons (combined seams) 2-5 and 6 to 11 presented in Table 11 have been identified in Cycle VI of drill holes Ba-002 and Ba-003. The 2 horizons are separated by about 1.5 m of rock salt with only traces of Carnallite. Although the horizons also consist of an interlayering of Carnallite dominated rocks with rock salt, the Carnallite dominated sections are generally thicker and the rock salt dominated section thinner than in the upper part of Cycle VII (compare Figure 10). Therefore, it is possible to define the thickness of the horizons from the geophysical logs of the Banio drill holes (Table 12). No information about grade of these horizons is available from the projects in the ROC, but grades are considered to be comparable to the results of Ba-002 and Ba-003.

Table 11 Summary of Seams considered mineable in Cycle VI in Drill Holes Ba-002 and Ba-003

	Ba-002	**KCl**		**Ba-003**	**KCl**	
	thickness (m)	**grade %**	**mineral**	**thickness (m)**	**grade %**	**mineral**
Seam 6-11	13.8	14.7	Ct	11.8	15.9	Ct
Seam 2-5	13.8	15.6	Ct	15.7	16.9	Ct

Table 12 Estimated Thickness based on Geophysical Logging Data for the Cycle VI Carnallitite Seams in the Banio Drill Holes within and near the Mayumba Permit

Drill Hole	**Banio-1**	**Banio-2**	**Banio-3**	**Banio-4**	**Banio-5**
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 6-11	20	22	24	61	16
Seam 2-5	25	19	16	21	33

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Figure 10 Core of Cycle VI at Drill Hole Ba-002 Showing Banded Rock Salt with Carnallite Growth at the Layers Rich in Insoluble Material combined with more massive Carnallite, Resulting in a Carnallititite dominated interlayering with Rock Salt (Core Box length 1.0 m)

Based on the assay data and the geophysical logging data the potentially mineable potash seams/horizons 2, 3 and 5 to 9 presented in Table 13 have been identified in Cycle V of drill holes Ba-002 and Ba-003. Because the seams in the lower cycles (III to V) all consist of layers dominated by nodular Carnallite with minor insoluble material and rock salt, which are separated by an interlayering of rock salt and insoluble material (compare Figure 11), it is possible to define similar seams/horizons based on the geophysical logging data from the Banio holes (Table 14). No information about grade of these seams/horizons is available from the projects in the ROC, but grades are considered to be comparable to the results of Ba-002 and Ba-003.

Table 13 Summary of Seams considered mineable in Cycle V in Drill Holes Ba-002 and Ba-003

	Ba-002	**KCl**		**Ba-003**	**KCl**	
	thickness (m)	**grade %**	**mineral**	**thickness (m)**	**grade %**	**mineral**
Seam 5-9	10.1	13.6	Ct	9.8	14.6	Ct
Seam 3	1.9	21.6	Ct	2.2	20.1	Ct
Seam 2	1.6	16.2	Ct	1.6	19.1	Ct

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Table 14 Estimated Thickness based on Geophysical Logging Data for the Cycle V Carnallitite Seams in the Banio Drill Holes within and near the Mayumba Permit. * is not considered mineable

Drill Hole	**Banio-1**	**Banio-2**	**Banio-3**	**Banio-4**	**Banio-5**
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 5-9	5	10	15	21	10
Seam 3	*	2	3	2	2
Seam 2	*	2	2	4	*



Figure 11 Core of Cycle IV at Drill Hole Ba-002 (extension), Showing thick Layers dominated by nodular Carnallite, separated by an Interlayering of Rock Salt and Insoluble Material. (Core Box length 1.0 m)

For Cycle IV and Cycle III only core and assay data are available for drill hole Ba-002. Based on this drill hole the following carnallitite seams have been identified:

Cycle IV, seam 1 with thickness of 4.2 m at an average KCl grade of 17.1 %;

Cycle III, seam 1 with thickness of 4.8 m at an average KCl grade of 18.7 %.

Ba-002 was extended to a depth where any potash mineralisation present in Cycle II as known from ROC should have been intersected. Therefore, at the location of Ba-002 there is no carnallitite mineralisation in Cycle II. As discussed in the previous section for BATC-1 the sequence from the base of Cycle V towards the base of Cycle III with relatively thick clastic (clay) dominated sections, often with Carnallite mineralised veins, carnallitite sections with similar thickness and separated by relatively thin rock salt sections make an unequivocal interpretation of the geophysical logs over this section difficult. The thickness numbers for seam 1 in Cycle IV reported for the Banio holes in Table 15 and seam 1 in Cycle III in Table 16 should be considered indicative only. No information about grade of these seams is available from the projects in the ROC, therefore grades are considered to be comparable to the results of Ba-002. For the relatively thick carnallitite seams that are present near the top of Cycle II it is possible to separate the clays from the bottom of Cycle III, reasonably well from the carnallitite. Therefore, the results from interpretation of the thickness of seam 1 in Cycle II carnallitite (Table 17) can be considered more reliable than

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for the carnallitite seams in Cycle III and Cycle IV. Because no data are available about the grade from the Ba holes, it is assumed that the grade can be compared to the average KCl grade of 17 % estimated for this seam within the Makola permit in the ROC (Rauche & van der Klauw, 2010, /17/).

Table 15 Estimated Thickness based on Geophysical Logging Data for the Cycle IV Carnallitite Seams in the Banio Drill Holes within and near the Mayumba Permit, x is not present.

Drill Hole	**Banio-1**	**Banio-2**	**Banio-3**	**Banio-4**	**Banio-5**
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 1	2	14	x	5	5

Table 16 Estimated Thickness based on Geophysical Logging Data for the Cycle III Carnallitite Seams in the Banio Drill Holes within and near the Mayumba Permit, x is not present, o is not considered mineable.

Drill Hole	**Banio-1**	**Banio-2**	**Banio-3**	**Banio-4**	**Banio-5**
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 1	o	x	x	6	6

Table 17 Estimated Thickness based on Geophysical Logging Data for the Cycle II Carnallitite Seams in the Banio Drill Holes within and near the Mayumba Permit

Drill Hole	**Banio-1**	**Banio-2**	**Banio-3**	**Banio-4**	**Banio-5**
	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)	Thickness (m)
Seam 1	2	21	23	24	18

The single potash seams and combined seams as horizons over all cycles are summarized in Table 30 in section 25.

7.3.3 Tectonics in the Investigated Area of the Permit

This section discusses the tectonic situation and its implications for the extent of the mineralisation at the Mayumba Permit area. The discussion will combine the overall tectonic setting of the deposit area, the interpretation of the seismic data (section 9) and the observations from the available drill holes.

Based on the assumption that that the opening of the South Atlantic controlled the structure of the basin, the general trend of the coast should be the strike direction of the main

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structures. Normal faults with potentially a significant vertical offset are expected parallel to the coastline, with a general minimal dip of the layering towards the coast in these fault blocks. This general trend with an overall dip towards the SW is confirmed by the map (Figure 12) showing the base of the evaporite sequence constructed from the interpreted seismic sections.

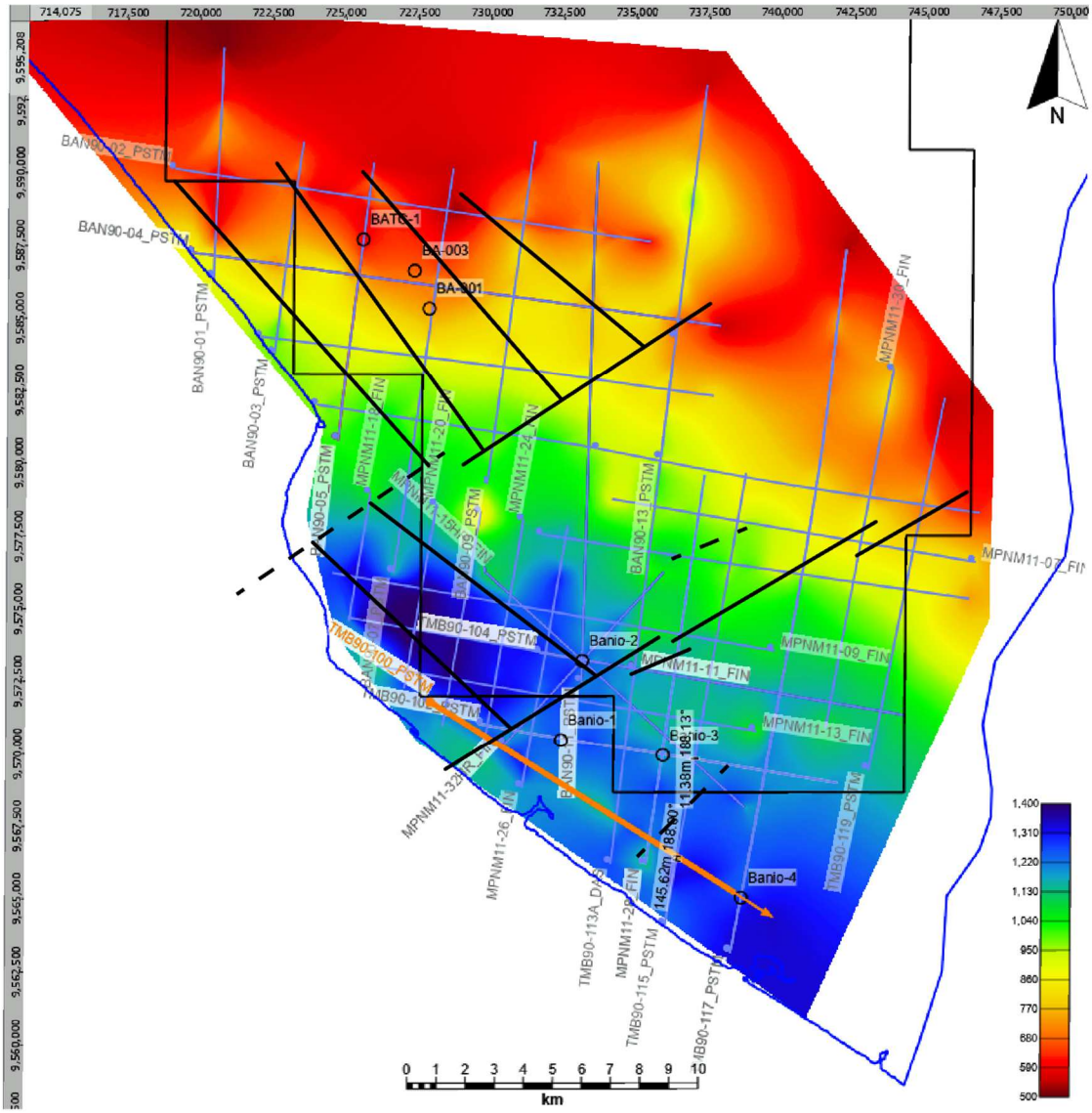


Figure 12 Depth Contours for the Base of the Salt from the Seismic Interpretation (SW Geophysics, 2023, /22/), overlain by the interpreted Faults of Figure 5

The fault pattern constructed from the interpretation of the seismic sections combined with the depth contours (Figure 5 and Figure 12) indicates that the fault bounded block with the Ba und BATC-1 drill holes has experienced a reversal of movement along the NE boundary fault whereas the other NW-SE trending faults in the northern block are normal faults (see Figure 13). The NW-SE trending faults in the northern block are cut-off by a NE-SW striking

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fault, which either acts as a strike slip fault off-setting the normal faults from the northern block towards the south (e.g. interpretation shown in Figure 13), or acts as a transform fault that facilitates movement along the short normal fault sections between these transform faults. Based on the available data there is no definite interpretation yet, since the position of the faults in Figure 5 should be considered approximate only and Figure 5 shows hardly any faults for the area between the Ba-wells and the Banio-wells. This is attributed to a gap in the seismic data. This gap exists, because only a few seismic lines actually cover this area. It cannot be excluded that further normal or reverse faults are present in this area.

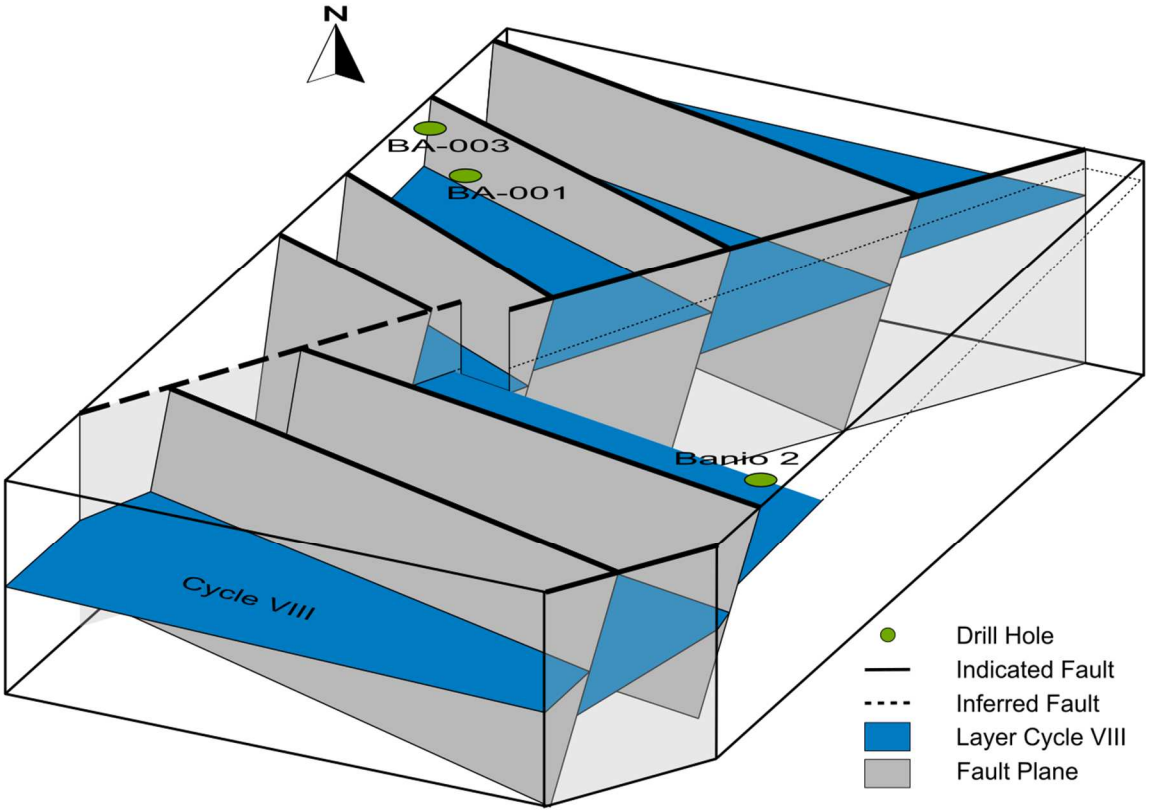


Figure 13 Interpreted relative Movements of the Faults interpreted from seismic Investigations, through a Visualization of the Position of the base of Cycle VIII stratigraphic Boundary for the Area between the Drill Hole Ba-003 and Banio-02

The relative uplift of the Ba-block in the north to the block in the south from Figure 12 is estimated to be in the range of 150 to 200 meters, which fits with the observation that on the northern block the complete Cycle VIII carnallitite (~ 100 m thickness) of Ba-002 has to be brought above the paleo groundwater level to initiate the Carnallite to Sylvite transition (see section 8). The relative position of this transition in the other Ba-wells (compare Figure 6) suggest a complicated uplift and subrosion history of the northern block containing the Ba drill holes.

A further NE-SW trending near vertical fault is required, as Figure 7 suggests, between the Banio-4 and the other Banio drill holes. This fault must have been already active during salt deposition, because Banio-4 compared to the other Banio wells shows (i) an increased

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thickness of the complete Cycles VIII and IX and (ii) the absence of the potash bearing part of Cycle X. The faults constructed from the seismic interpretations in Figure 5 indicate the presence of a NE-SW striking transform fault that could explain these observations. Also south of this postulated transform fault, it cannot be excluded that further unidentified normal faults are present, that have not been identified due to gaps in the seismic data.

7.3.4 Concept Geological Model for the Investigation Area

The basis for the concept of the geological model is that all potash seams originated as Carnallite seams and are present within three fault blocks separated by two NE-SW trending near vertical “transform faults”. Within each block the Carnallite seams were originally deposited as near horizontal layers with eventually a minimal dip towards the SW. The well correlation diagrams of Figure 6 and Figure 7 confirm that this is a reasonable interpretation. The horizontal seams after deposition have been offset by NW-SE trending normal faults (locally reversed) with a dip in the range of 65-70°, as interpreted from the seismic investigations. The Carnallite seams can be offset along these dipping faults, but all seams present in the relative upthrown block are present in the downthrown block too. If a drill hole on a downthrown block shows the presence of stratigraphic higher seams these are only extended over a relative upthrown block, when there is independent information about the magnitude of the vertical movement along the fault structure. The transformation of the Carnallite deposit to a Sylvite deposit, requires fluid infiltration and only takes place in uplifted blocks (Pedley et al., 2016, /16/). Therefore, seams with Sylvite mineralisation are not extended over faults in downthrown blocks. These seams are probably present as Carnallite seams, but are only modelled if they have actually been shown to be present in a drill hole in a downthrown block.

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8 Deposit Type

The Congo coastal basin contains 2 potash bearing minerals;

- Sylvite, chemical formula KCl
- Carnallite, chemical formula $KMgCl_3 (H_2O)_6$

A rock consisting mainly of Sylvite together with Halite is called sylvinite. Subordinately anhydrite, clay and or dolomite can occur. The latter two are taken together as insoluble material in the assays.

A rock consisting mainly of Carnallite, together with Halite is called carnallitite. Subordinately the highly soluble salt minerals Tachyhydrite and/or Bischofite as well as anhydrite, clay and/or dolomite can occur.

In general, sylvinite deposits consist of relatively thin beds, with KCl content between 20 and 35 %, whereas carnallitite deposits usually consist of relatively thick beds with KCl content between 8 and 24 %.

The sylvinite in the Congo coastal basin is secondary (e.g. Pedley et al., 2016, /16/) and requires that the original carnallitite deposit type has reacted with water according to the reaction:

Carnallite + Water = Sylvite + $MgCl_2$ rich brine.

The presence of water in the carnallitite salt rocks is a consequence of fault zones or other disturbances present. The sylvinite deposits in the Congo coastal basin, therefore, occur only locally and are mostly structurally controlled (Pedley et al., 2016, /16/).

The carnallitite in the Congo Coastal Basin, which is the more common deposit is considered a primary sedimentary rock. Single carnallitite seams can be traced over more than 40 km (MDPA, 1992, /15/, in van der Klauw & Grüschow, 2007, /21/; Pedley et al., 2016, /16/) and a stratigraphic correlation of carnallitite seams over the whole basin is possible. This conforms with the geological model for the deposit that considers that the carnallitite occurs in sub-horizontal layers, extending over large areas, which are eventually only locally disturbed by NW-SE or NE-SW striking faults, resulting in thinning and thickening of single carnallitite seams. The continuity of the potash seams is comparable with the potash seams in the Elk Point basin in Saskatchewan, Canada.

The large number of potash seams in the sequence that can be considered for mining sum up to a potential economic thickness of the deposit of well over 100 m. This is larger than the 3 seams totaling 30 m to 50 m that are mined by solution mining in the Saskatchewan deposits and also significantly larger than the combined 3 seams that are conventionally mined in the Upper Kama basin in Russia.

Carnallitite was the main potash mineral at the start of potash fertilizer production in Germany in 1865. It is still used for the production of KCl fertilizer in Germany at two locations. It is mined using solution mining techniques where the deposit has a thickness between 15 m and 35 m and also using conventional mining where structurally controlled thickness of the carnallitite can reach up to 60 m.

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9 Exploration

With the extension of drill hole Ba-002, MLP has initiated their exploration activities. The results of this extension and historical exploration drilling are described in section 10. Further historical exploration consists of several 2D seismic surveys shot over the southern part of the Mayumba Permit area for hydrocarbon exploration. From the geological drilling reports for the older Banio wells it is evident that there has been seismic exploration in the 1970's, but this information is not available. The available seismic data consists of 34 lines (datasets) of about 411 line kilometers that covers an area of approximately 600 km² over the southern part of the Property (Figure 1). The data were gathered in 3 different campaigns (BAN90, TMP90, and MNPM11) between 1990 (BAN and TMP) and 2012 (MNPM). The dataset was sent to SW Geophysics Limited for interpretation to define the top and base of the salt formation (No internal reflectors in the salt formation could be reliable correlated). The conclusions of SW Geophysics Limited (2023, /22/) about the data is summarized in the following paragraphs.

The file names for the BAN90 and TMB90 surveys have a PSTM suffix, indicating these lines have been Pre-Stack Time Migrated. Whilst there is no similar descriptor for the MPNM11 survey, the character of the stacks looks similar and appears to have been migrated too. The data quality is variable across the surveys. The Top of Salt/Anhydrite layer is the shallowest horizon consistently imaged on the MPNM survey, above this is dominated by noise and identifying shallower continuous events in these datasets is difficult. The Top of Salt dominates these stacks and the intra-salt layers are poorly defined when compared to the BAN90 and TMB90 surveys. Both the BAN90 and TMB90 surveys have improved shallow imaging with the Madiela level (Sendji Formation in the ROC) clearly defined. As the partly processed files are the only available data, reprocessing all data to get a consistent dataset is not possible. In the interpretation there will remain some uncertainty which corrections to what level (e.g. topography correction) have been applied.

To transform the time sections to depth a variable velocity model for the overburden has been applied. A velocity of 2,700 m/s was used in the NE area near drill hole BATC-1, with a gradual increase of the velocity to 3,400 m/s in the SW area near drill hole Banio-02. Beneath the Top of Salt horizon, a constant velocity of 4,500 m/s was used to the base of the dataset. The mis-ties when comparing seismic depths converted with this velocity model to drilled depths (BATC-1, Banio-1, Banio-2, Banio-3 and Banio-4) for the top of the salt range between 2 m to 15 m. For the base of the salt the mis-ties are in the range 5 m to 30 m.

Interpretation of both the Top and Base of Salt was carried out in the depth domain starting on line TMB90-102, due to its intersection with wells Banio-1 and Banio-3 and moving to intersecting lines ensuring a tie with the nearby wells. The Top of Salt was consistently picked on the positive amplitude giving the best match with the well markers and intersecting seismic lines. Tying between the northern and southern section of the surveys was complicated with only a single line linking the southern Banio-2 well to the northern lines, BAN90-11. This line intersects with the northern BAN90 lines on the edge of and across the marshland resulting in poorer data quality, reducing confidence in the tie.

Once the Top of Salt interpretation was completed this was fed into the depth conversion model and velocities of 4500 m/s flooded beneath. This gave a good correlation between the Base of Salt seismic event and the well markers. The Base of Salt was picked in a similar fashion propagating from areas of good data quality and reliable well ties. On the BAN90 and TMB90 this is a clear strong reflector allowing high confidence in the picks on these surveys. However, the image quality of the deeper structures on survey MPNM11 proved to be a limiting factor in the interpretation of the Base of Salt pick. The lack of tie

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lines with either of the other acquisitions in the Southwest of the survey area reduces the confidence in the Base of Salt horizon here.

The 2D line interpretations were smoothed and interpolated to create 3D depth maps of the Top and Base of Salt and a Salt thickness map. Due to the relatively large uncertainties with respect to the interpretation of top and bottom of the salt sequence over the whole area the 3D depths maps were not included in the 3D model. The base of the salt sequence shows a relative consistent Northeast-Southwest deepening trend, whereas, the top of the salt shows a more irregular distribution reflecting eventually differential uplift with dissolution of salt rocks that were brought in contact with groundwater bearing overburden formations.

For the structural model, however, the position of faults that off-set the base and eventually also the top of the evaporite sequence on single seismic lines were interpreted by ERCOSPLAN geologists. Interpreted single faults on seismic sections either were near vertical or dipped usually in southern or western direction, depending on the orientation of the seismic line. Because no correction for topography was possible or documented for the seismic lines, only faults with significant offset (few 10 meters or more) could be identified. Using the locations of these interpreted faults on seismic lines, the position of single faults was estimated by combining interpreted faults with similar movement sense on different seismic lines to a network of intersecting fault structures as shown in Figure 5. The constructed NW-SE striking faults, have an interpreted dip of 65 to 70° towards the SW, whereas the NE-SW striking faults seem to be vertical. Because not all interpreted faults could be correlated between seismic lines, it cannot be excluded that further faults, probably with less vertical offset than the defined faults, are present within the defined blocks.

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10 Drilling

The drilling done within or near the Permit Area consists of historical hydrocarbon drill holes Banio-1 to Banio-5 and BATC-1 and the 3 potash exploration drill holes (Ba-001 to Ba-003) drilled by Mayumba Potasse (Infinity/Plymouth) in 2017. Information about all 9 drill holes is given in Table 18 and the location of the drill holes is shown in Figure 1.

Table 18 Coordinates (UTM zone 32S, WGS 84 Reference) of the new Exploration Drill Holes (Infinity, 2018, /8/) and Historical Drill Holes (see text for references) and Reference Elevation in m above Sea Level. All wells were drilled vertical.

Name	Easting	Northing	Elevation	Depth (m)	Year	Owner	Goal
Banio-1	732381.5	9570418.8	50	2800	1972	Elf Gabon	Hydrocarbons
Banio-2	733095.5	9573210.8	47	2477	1975	Elf Gabon	Hydrocarbons
Banio-3	735890.5	9569951.8	70	1997	1977	Elf Gabon	Hydrocarbons
Banio-4	738603.5	9565043.8	38	1978	1978	Elf Gabon	Hydrocarbons
Banio-5	734753.5	9571719.8	41	1843	2010	Maurel & Prom	Hydrocarbons
BATC-1	725491.5	9587713.8	12	903	1991	Elf Gabon	Hydrocarbons
Ba-001	727893	9585295	5	368	2017	Mayumba Potasse	Potash
Ba-002	725483	9587774	6	516	2017	Mayumba Potasse	Potash
Ba-002 ext.	725483	9587774	6	552.5	2023	MLP	Potash
Ba-003	727379	9586599	5	528	2017	Mayumba Potasse	Potash

10.1 The Historical Hydrocarbon Drilling

Mayumba Potasse obtained information about the historical holes Banio-1 to Banio-4, BATC-1 and Banio-5 from the company Maurel & Prom. The information consisted of the historical geological drilling reports and the geological drilling logs for the drill holes Banio-1 to Banio-5 as well as for BATC-1. This documentation typically contains the information about the location and elevation of the drill hole, start and finish of the drilling operation, depth and lithologic information of any cored sections along the drill hole, information about the type cuttings in the mud log and the stratigraphic interpretation of the geophysical well logs for the drill hole as well as an interpretation of eventual hydrocarbon reservoir rocks. Especially the younger geological drilling reports often provide further information about the geothermal gradient (e.g. BATC-1, Banio-5). With exception of drill hole Banio-5, which has a natural gamma ray log of the evaporite section from measurement while drilling, all other

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drill holes have a suite of geophysical wireline logs, recorded after drilling the salt section. The available logs over the evaporite section from the holes other than Banio-5 are summarized in Table 19.

Table 19 Sections (from – to in m along the drill hole) with different available Geophysical Wireline Logs over the Evaporite Sections of the Drill Hole

Log	Banio-1	Banio-2	Banio-3	Banio-4	BATC-1
Caliper		383 – 1219	356 – 1259		26 – 600
Natural Gamma	0 – 1290	0 – 1219	0 – 1259	80 – 1289	0 – 600
Spectral Gamma					0 – 600
Resistivity	175 – 1290				236 – 600
Density		384 – 1219			231 – 600
Neutron Porosity					26 – 600
Photoelectric					0 – 600
Sonic	170 – 1290	380 – 1219	0 – 1259	400 – 1289	0.5 – 600

Technical Drilling Reports describing the different sections of the hole with equipment and consumables used for drilling are available from the drill holes Banio-3, Banio-4 and BATC-1. For drill hole Banio-5 this information is included in the more extensive geological drilling report. The Banio 5 report states that for this drill hole an oil-based drilling fluid has been used over the drilling of the evaporite section, which should minimise dissolution of all salt rocks present. From the other technical drilling reports the mud reports show that for the drilling of the evaporite section a NaCl saturated water-based drilling fluid has been used. The use of such drilling fluid will result in dissolution of Carnallite and Tachyhydrite from the drill hole walls, which increases the uncertainty when interpreting wireline data from such drill holes. For Banio-1 and Banio-2 the information from the geological drilling logs suggests that these drill holes also have been drilled over the evaporite sequence using a NaCl saturated water-based mud.

Six spot cores of 18 m length have been taken from the evaporite section of drill hole Banio-2, with recovery of parts of the potash bearing sections in 3 cores. These sections have been assayed, but no detail assay information is provided in the “Salt Investigation Report”, except that the mineralogy of the potash bearing section is Carnallite, Halite and Sylvite. The description and the low-quality scanned core pictures show significant dissolution of the core over the Carnallite bearing sections. The dissolution and low quality of the core pictures makes interpretation of the core data difficult.

The drill hole coordinates for all wells are given in UTM coordinates, but only for the hole Banio-5 from 2010, the reference system is provided (M’Poraloko). Since this is the youngest drill hole, it is assumed that the coordinates of all the older drill holes are also given with respect to this local reference system. The original M’Poraloko coordinates have been transformed to UTM (zone 32S) coordinates with the WGS 84 reference and these are provided in Table 18 and will be further used in this Report. When the transformed WGS 84 coordinates of the drill holes are plotted on a WGS 84 referenced map or satellite image there are clearings or other indications of drilling platforms at these locations, suggesting

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that the assumption that M'Poralako was the reference system for the original coordinates is correct.

10.2 The 2017 Exploration Drilling and the 2023 Extension

In the 2017 exploration drilling campaign 3 drill holes were completed. The locations of the drill holes were provided in UTM coordinates using the WGS 84 reference system. The drill holes will be briefly described in the following section.

Drill hole **Ba-001** was drilled between 17.03.2017 and 07.04.2017 using a S5000 rig with destructive drilling from surface to 329 m depth (within top of the Anhydrite) using a bentonite based mud with a bit-diameter of 7 $^{5}/_{8}$". At this depth the hole was cased (5½") and cemented to prevent any groundwater inflow during drilling of the underlying salt section. The Anhydrite and salt section was continuously cored with wireline coring using a tri-salt mud. The cored section ranged from 328 to 364 m, with only fragments of cores recovered (Anhydrite) from 330 to 341.8 m depth. A comparison with the geophysical log suggested this core loss section was located in the clay/marl section with minor Anhydrite. The available core sections are stored at the Banio camp site and have been reviewed during the site visit.

The drilling was discontinued at 364 meters, because the last core sections showed steeply dipping carnallitite. This was interpreted to be due to drilling into a large-scale fault. Experience from other locations in the basin, however, indicates that steep dipping carnallitite section do often occur as loose blocks floating in a Tachyhydrite matrix. The normal horizontal potash bearing sequence continues below the Tachyhydrite bearing section and it is planned to extend this hole to prove this hypothesis.

Drill hole **Ba-002** was drilled between 11.04.2017 and 20.04.2017 using an S5000 rig with destructive drilling from surface to 230 m depth (within top of the Anhydrite) using a bentonite based mud with a bit-diameter of 7 $^{5}/_{8}$". At this depth the hole was cased (5 ½") and cemented to prevent any groundwater inflow during drilling of the underlying salt section. The Anhydrite and salt section was continuously wireline cored (PQ diameter) with a GEMSA rig using a tri-salt mud. The cored section ranged from 230 to 516 m, with no significant core loss. The remaining core sections after sampling for assaying are stored at the Banio camp site.

The drilling was discontinued at 516.3 meters. The reason to discontinue drilling was not provided in the documentation, but since the geophysical log of the hydrocarbon drill hole BATC-1 showed only minor natural gamma peaks below this section it is inferred that no further potash bearing sections were expected deeper down and the organic decomposition smell suggested the eventual presence of high-pressure hydrocarbons further downhole.

In August 2023 the drill hole **Ba-002** was extended to a depth of 552.5 m using a BD2000M rig and a tri-salt mud to evaluate for the presence of Carnallite bearing rocks in the deeper part of the evaporite section. The extension recovered PQ cores between 516.3 to 522.5 m depth and as the PQ core barrel got stuck at that depth, HQ cores from 522.5 m depth to 552.5 m depth were recovered. Over these sections there was no significant core loss. The remaining core sections after sampling for assaying are stored at the Banio camp site.

Drill hole **Ba-003** was drilled between 16.05.2017 and 14.06.2017 using an S5000 rig with destructive drilling from surface to 220 m depth (assumed in top of the Anhydrite) using a bentonite based mud with a bit-diameter of 7 $^{5}/_{8}$". At this depth the hole was cased (5 ½")

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and cemented to prevent any groundwater inflow during drilling of the underlying salt section. The cement did not set properly and with the start of PQ core drilling using the GEMSA rig and a tri-salt mud, mud losses were observed. The hole was recemented with the PQ rods as casing at a depth of 225.6 m. Drilling was continued with HQ diameter with the GEMSA rig using a tri-salt mud. The cored section ranged from 222 m to 528 m, with no significant core loss. The remaining core sections after sampling for assaying are stored at the Banio camp site and have been reviewed during the site visit.

The drilling was discontinued at 528 meters. The reason to discontinue drilling was not provided in the documentation, but since the geophysical log of hydrocarbon drill hole BATC-1 showed only minor natural gamma peaks below this section it is inferred that no further potash bearing sections were expected deeper down and the organic decomposition smell suggested the eventual presence of high-pressure hydrocarbons further downhole.

After reaching the final depth in 2017, all three drill holes were geophysical wireline logged with following logs being obtained:

- Caliper log
- Azimuth and Tilt log
- Natural gamma ray log
- Fluid temperature log
- Sonic logs (not in BA-001)
- Density log

For the extension of the hole Ba-002, no geophysical logging data are yet available. The interpreted results of the 2017 potash exploration drilling and the 2023 extension of Ba-002 have been summarized and discussed in section 7.3.

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11 Sample Preparation, Security and Analysis

This section describes the sample preparation, handling and security procedure for the core material of drill holes Ba-002 (with extension) and Ba-003. This is followed by a description of the analytical procedures used for assaying by the initial ALS laboratory and the analytical procedures of the K-UTEC and SRC laboratories who re-analysed the potash rich samples. In the last part of this section an evaluation of the assay quality for the different laboratories is provided.

11.1 Core Handling and Sampling Procedure

Infinity Lithium Corp. (Infinity) the owner of the project in 2017 established a standard operating procedure to guide the sampling process from source of the core at the drill rig to delivery to the laboratory, which was monitored by their staff. With minor modifications that will be pointed out, this procedure has been adhered to by MLP during ongoing exploration drilling.

Standard practice to ensure high core quality was a continuous control of the mud chemistry and physical properties by a dedicated mud technician, who adjusted chemistry and properties when necessary to avoid dissolution of potassium and magnesium bearing mineral from the core material. Chemistry and properties of the mud were recorded in daily drilling reports for each hole. Inspection of the core by the author indicates that the tri-salt used was properly maintained and there are no signs of dissolution of Carnallite of Sylvite from the core surface. Since it is not possible to design a water-based mud in equilibrium with Tachyhydrite, in sections of the core bearing this mineral some dissolution has taken place.

The assessment process to ensure core recovery includes the recording of drilling advance at the rig on the drill string against the length of core recovered. Core recovery was recorded at between 95 % and 100 % for all potash seams and the intervening evaporitic sequence. After measurement of the core, the core was divided in sections of at maximum 1 m length and wrapped in plastic liner after drilling, to prevent contact with the atmosphere. This was done to minimise reaction of the Carnallite with humidity from the air. The core with depth markers and top and bottom indicators was boxed in properly marked boxes and thereafter stored in a de-humidified core storage room where it is stored permanently except when logged or prepared for sampling over short periods. For the relevant carnallitite and sylvinite sections of the core, good recovery with no indications for dissolution at the core surface was recorded.

Before sampling all core was photographed (e.g. Figure 9 to Figure 11) and logged with delineation of different rock types and recording the depth of the boundaries of different lithologies. The sampling was done as per the Company's sampling protocol. The original Infinity protocol envisaged marking samples between 15 cm to 50 cm length on the core over the visually determined boundaries between potash bearing rock and rock salt. One or two further samples were then taken in the rock salt section beyond the boundary to confirm low potash content of these sections. For the Sylvinite bearing sections with relatively thin seams this provides a good resolution for the mineralized sections. Applied to the interlayering of rock salt and carnallitite seams that are present in most cycles this results in a very large number of samples and a resolution of mineralized sections, which is not practical for definition of Mineral Resources. Therefore, MLP for the Carnallite bearing

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sections increased the length of the samples to between 80 cm for irregular interlayering and 180 cm for very regular interlayering or homogeneous Carnallite sections. Only one sample was taken from a rock salt section beyond each carnallitite boundary to confirm the low potash content of these sections.

In 2017 and also in 2023 HQ core to be submitted for analysis was sawn into two halves, one of which was retained and stored on site for record purposes and the other submitted to the laboratory for preparation and analysis. In 2017, PQ core was also cut in half and sampled though in 2023 only quarter core was sampled from PQ sized core. The core was orientated to ensure both halves were as similar as possible. Sampling of core was conducted with core pieces with lengths being between 15 cm and 25 cm after which the core was cut along a marked center line which is orientated to bisect the maximum dip of the bedding where possible. The core was cut dry with a core cutting machine by company staff under the supervision of a Company geologist. The cored was packed in sealed plastic bags to prevent contact with air humidity.

The samples were then delivered and accompanied by Company staff to DHL couriers in the City of Libreville in locked transportation crates, after which the crates are airfreighted to the laboratory. The remaining core at the exploration site is wrapped in plastic, placed in core trays, indexed and then stored in a secure and de-humidified storeroom at the Banio camp site.

Because the exact mineralogical composition of the Tachyhydrite bearing sections are not of interest for the evaluation of the potash prospects of the property the author of the report does not consider the surface dissolution at Tachyhydrite bearing cores problematic. Taking into account the potential crystal size of the Carnallite as observed in the cores halving the core for a sample is definitely necessary for HQ core to obtain a representative sample, whereas with PQ or larger size core, quarter core sections are acceptable.

In the opinion of the author the procedure described has been adhered too and the potential relating to bias due to selective recovery/loss of material from the core ore preferential sampling is not considered an issue.

11.2 Sample Preparation and Analysis

The sealed half core samples of Ba-002 and Ba-003 of 2017 were sent to ALS Global laboratory in Seville, Spain. At the laboratory all samples were crushed to < 2 mm, a 1 kg sample was then riffle split off, pulverized to 75 microns and a 100 g sample was utilised for the analysis. The analytical method was MS-ICP for the elements Ca, Fe, K, Mg, Na and S. The sample preparation for the MS-ICP analysis (dissolution in water) has not been detailed. The mass of insoluble residue remaining after dissolving the soluble salt minerals has not been reported. The main element Cl, which can make up nearly 50 % of the mass of a sample cannot be analysed with MS-ICP, however, it is considered good practice to have it analysed by another method.

The EXCEL files as well as laboratory protocols reporting the Na, K, Ca, Mg and S content in % per mass) for all samples analysed by ALS were checked for transcription errors. No transcription errors were found and the EXCEL files were used for further evaluation. For evaporite rocks the suite of elements provided by ALS is considered an incomplete assay as the information about Cl-content (main anion-component) as well as the mass of non-soluble material in a specified mass of water per mass of sample water (typically clay minerals, dolomite and eventually Anhydrite) are not available. Evaluation of the ALS

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analysis produced for a significant number of samples with high potash content mineralogical compositions for the rocks that made no sense (see section 11.3.2.3) and indicated that the K-content might be overestimated. It was, therefore, decided to re-analyse the powder rejects of samples with a potash content over 5 % in other laboratories. The samples with high potash content from Ba-003 and 10 samples from Ba-002 were re-analysed by the SRC laboratory (see below for the laboratory procedure) and the samples with high potash content from Ba-002 and 10 samples from Ba-003 were re-analysed by K-UTEC AG Salt Technologies. Two laboratories were selected for re-analysis of the pulps to allow for fast turnover and to have check sample results to compare the results of the laboratories.

The 2023 core samples of the Ba-002 extension and the selected Ba-003 2017 pulps were sent to the SRC Laboratory in Saskatoon, Canada. At SRC the SRC's Potash ICP Analysis package designed for multi-element analysis of potash samples was used. Upon arrival at SRC Geoanalytical Laboratories core samples are jaw crushed to 60 % @ -2 mm and 100 g sub sample is split out using a riffler and transferred to vials. The subsample is pulverized to 90 % @ -106 microns using a puck and ring grinding mill to create a pulp. The grinding mills are cleaned between groups using Quintus quartz. The pulp is then transferred to a labeled plastic snap top vial. An aliquot of pulp is placed in a test-tube with 15 ml of 30 °C DI water. The sample is shaken. The soluble solution is then analyzed by inductively coupled plasma optical emission spectrometry (ICP-OES). The method is suitable for the soluble analysis of commercial potash (Sylvite). The soluble solution is then analyzed by ICP-MS. In addition, samples are analyzed Br and Cl by MS, plus insoluble content by gravimetry. SRC Geoanalytical Laboratories has been certified by the Standards Council of Canada (SCC) to conform to the requirements of ISO/IEC 17025:2005 (CAN-P-4E).

SRC provided for every sample a large suite of analysed elements, which are mostly present in minimal amounts and not relevant for the evaluation of the deposit. From the suite of elements analysed with ICP-OES the relevant components CaO, K_2O, MgO and Na_2O in % per mass (m%) as well as S in ppm have been selected for further evaluation. Added for the evaluation are the amount of Cl (in m%) and the amount of insoluble material (in m%).

At the K-UTEC laboratory the caked powdered samples of the selected 2017 Ba-002 pulps were milled again to get a representative sample with a grain size of approximately 50 µm (90 %). Five grams of sample was dissolved in 300 ml boiling de-ionised water (100 °C), filtered for insoluble content and filled up to 500 ml, producing the solution for analysis. The determination of Sodium, Potassium, Magnesium, Calcium and Sulphur, was done according to DIN EN ISO 11885 by inductively coupled plasma optical emission spectrometry (ICP-OES) in dilutions of the original dissolved sample. The Sulphur (S) content was recalculated to sulphate (SO_4) content. Chloride was determined according to DIN 38405-1, by potentiometric titration with a silver nitrate solution. The insoluble content was determined gravimetrically from the dried material remaining in the filter from after the dissolution of the solid sample in 300 ml of water. K-UTEC's analytical laboratory is accredited in accordance with the requirements of EN ISO/IEC 17025, by the German Accreditation Body (DAkkS).

KUTEC reported the relevant elements Ca, K, Mg, Na, Cl, and the component SO_4 as well as the mass of insoluble material in m%.

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11.3 Quality Assurance and Quality Control

National Instrument 43-101 and Exploration Best Practices Guidelines state that a program of data verification should accompany an exploration program to confirm validity of exploration data (CIM, 2014, /3/). Furthermore, the guidelines require a quality assurance quality control (QA/QC) program to be in place. There is a difference in the QA/QC strategy between Infinity and MLP and the strategies of both companies will be presented first, in a last section the methodology to check the plausibility of the results will be discussed.

11.3.1 Infinity QA/QC Strategy

The QA/QC strategy of Infinity relies on inserting standard samples and blanks samples with the samples send to the laboratory, which is a usual procedure for mineral projects. For the assaying of drill hole Ba-002 and Ba-003 either standard BCR-113 (~ 50.1 % K, 47.8 % Cl) or standard BCR-114 (~ 41.8 %, 53.3 % SO_4), were inserted as every 20th sample (in total 24 standards, 13 of BCR-113 and 11 of BCR-114). As blank samples sand was used, and samples were inserted every 40th sample (in total 23 blanks).

Although the assay results show reasonable reproducibility for the assay results of the blanks and standards, this is not the optimal choice of standards and blanks for a potash project in salt. The sand as a blank has the advantage that in principle nothing will go in solution and in the laboratory, you should find for all elements 0 as only de-ionised water is measured. Since the standards used show that the element of interest is potassium it would have been more realistic to have pure sodium chloride as background for the 0 measurement for potassium. The standards consist of a high grade KCl material (BCR-13) and a high grade K_2SO_4 material (BCR-14). The maximum K-content in the samples which consist of a mixture of potash minerals and other salt minerals is significantly smaller and the eventual influence on the assay of the elements from these other salt minerals is not accounted for.

To the knowledge of the author of this report Infinity did not send any samples to a secondary laboratory for check analysis.

11.3.2 MLP QA/QC Strategy

The QA/QC strategy of MLP relies on the laboratory internal QA/QC for measurement of blanks and standards and on check analysis by different laboratories with a track record in analysis of potash salt rock samples to verify the results.

11.3.2.1 Laboratory internal QA/QC

Both laboratories have an internal QA/QC procedure. At the K-UTEC laboratory the procedure consists of:

- a daily blank control for every analytical parameter, (in the case of brine samples, this is deionized water).

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- Every determination run is also controlled by the measurement of a commercially available standard solution of at least one of the specified ions.
- Daily, one selected sample is analysed twice for the control of the standard deviation of every single parameter.
- All quality control data is graphed for long-term quality analysis and it is reviewed by the laboratory quality manager.
- The laboratory periodically takes part in Round-Robin Tests to prove the reliability of its analytical methods.

The internal procedure by SRC consists of at minimum:

- Every 20th sample one of two available internal potash standard is analysed.
- At least every 40th sample a randomly selected sample is analysed twice for the control of the standard deviation of every single parameter.
- All quality control data is graphed for long-term quality analysis and it is reviewed by the laboratory quality manager.
- The laboratory periodically takes part in Round-Robin Tests to prove the reliability of its analytical methods.

These are standard laboratory procedures and the reported data for the standards show that both laboratories produce results that have a reproducible accuracy and precision.

11.3.2.2 Results of the Check Samples

With the assay results for Ba-002 samples the ALS laboratory and the K-UTEC laboratory can be compared. The assay results from Ba-003 allow a comparison between the ALS laboratory and the SRC laboratory. Because 10 Ba-002 samples were also analysed by the SRC laboratory and 10 Ba-003 samples by the K-UTEC laboratory a comparison between these two laboratories is also possible. In the following the results will be presented for the main elements (usually present at concentrations > 5 %) analysed and the implications are discussed in section 11.3.2.3.

The comparison between ALS laboratory and K-UTEC laboratory for Potassium, Magnesium and Sodium for the samples of Ba-002 are shown in Figure 14. In these figures the green line represents a 1:1 correlation between the results of the laboratories and the red line marks a 10 % difference between the results of the laboratories. With regards to K and Mg, the ALS laboratory clearly tends to overestimate the K- and Mg-content of the sample when compared with the K-UTEC laboratory, quite often by more than 10%. For Na the discrepancies are smaller with a slight tendency by the ALS laboratory compared to the K-UTEC laboratory to overestimate the Na- content at low Na-content (< 15 %) and to underestimate the Na- content at higher Na-content (> 20 %).

The comparison between ALS laboratory and SRC laboratory for K, Mg and Na for the samples of Ba-003 are shown in Figure 15. With regards to K and Mg, the ALS laboratory tends to slightly overestimate the K and Mg content of the sample when compared with the SRC laboratory. For Na the discrepancies are smaller with a slight tendency by the ALS laboratory compared to the SRC laboratory to underestimate the Na-content.

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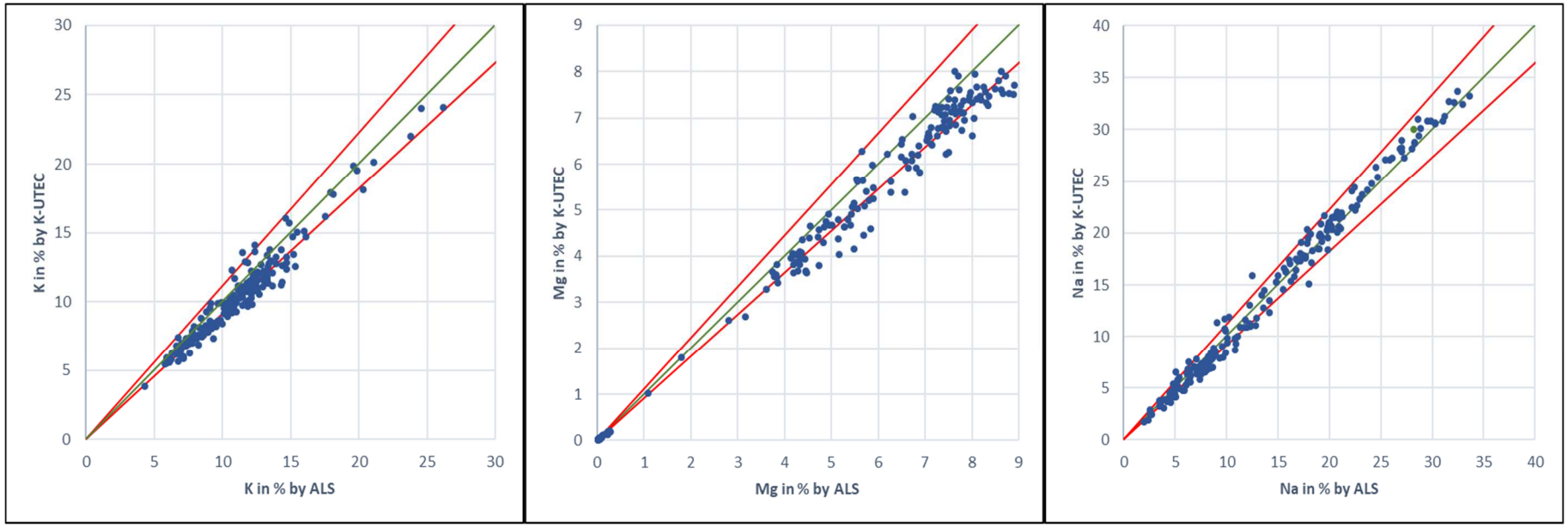


Figure 14 Comparison between the Assay Results for K, Mg and Na by ALS Laboratory and the K-UTEC Laboratory for re-analyzed Samples of Ba-002. The Green Line is a 1:1 Correlation, whereas the Red Line marks a 10 % Deviation from the 1:1 Correlation

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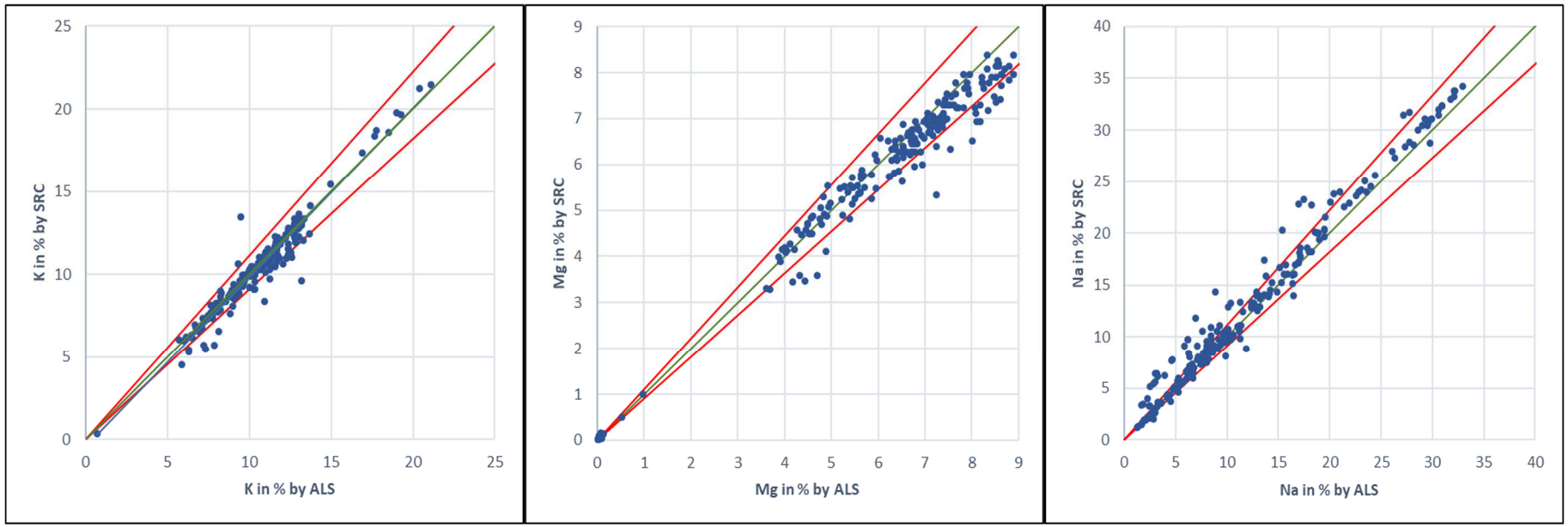


Figure 15 Comparison between the Assay Results for K, Mg and Na by ALS Laboratory and the SRC Laboratory for re-analyzed Samples of Ba-003. The Green Line is a 1:1 Correlation, whereas the Red Line marks a 10 % Deviation from the 1:1 Correlation

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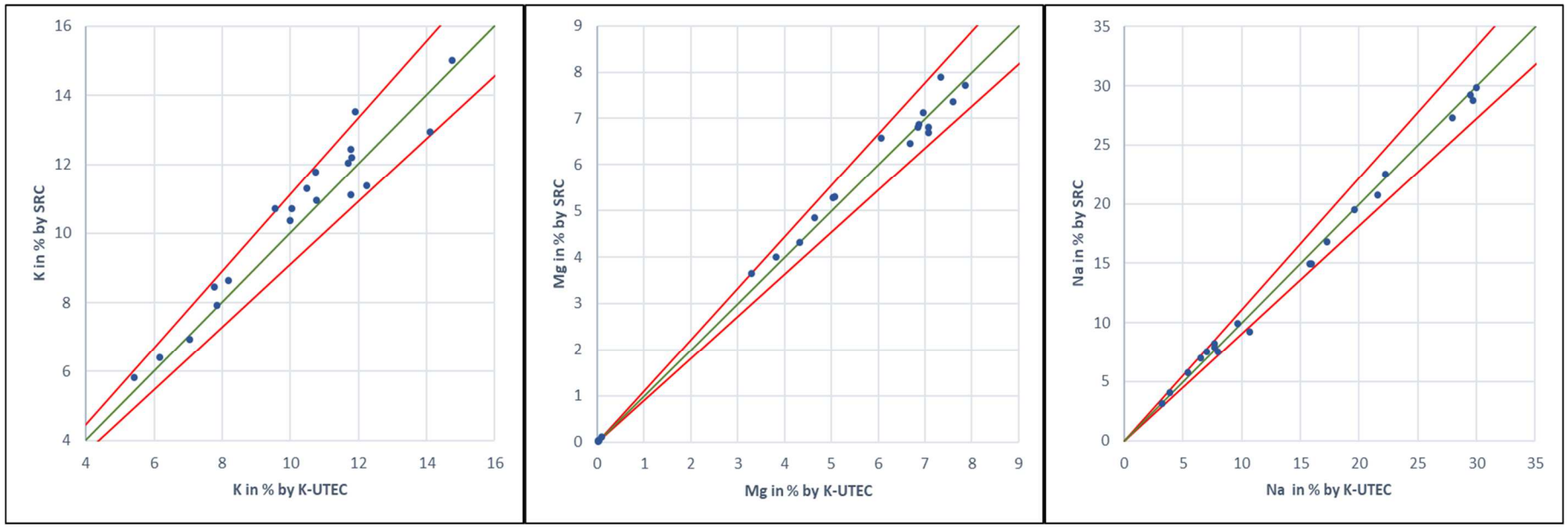


Figure 16 Comparison between the Assay Results for K, Mg and Na by K-UTEC Laboratory and the SRC Laboratory. The Green Line is a 1:1 Correlation, whereas the Red Line marks a 10 % Deviation from the 1:1 Correlation

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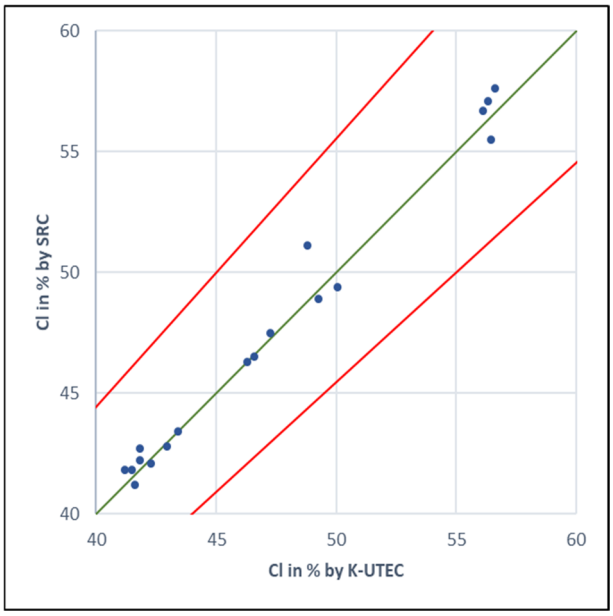


Figure 17 Comparison between the Assay Results for Cl by K-UTEC Laboratory and the SRC Laboratory. The Green Line is a 1:1 Correlation, whereas the Red Line marks a 10 % Deviation from the 1:1 Correlation

The comparison between K-UTEC laboratory and SRC laboratory for K, Mg, and, Na are shown in Figure 16, and for Chloride in Figure 17. There is a good correlation between the analytical results of both laboratories with the SRC laboratory having a tendency for minimal higher K-content compared to the K-UTEC laboratory. There are, however, for K-content 2 outlier samples with a difference over 10 %. These 2 samples also have a large deviation in the other direction for sodium, suggesting that the deviation is not due to differences between the laboratories, but rather due to inadequate homogenization of the clumped powder sample material, when separating the samples for the 2 laboratories.

11.3.2.3 Plausibility Check

With an assay for typical salt rocks the combination of analysis of the cations K, Na, Mg and Ca and the anions Cl and SO_4 in the dissolved sample typically provides about 99 % of the ions present in the solution. This has 2 consequences that can be used to check the quality of the assays:

1. There must be a balance between the positive charged cations and the negatively charged anions in the solution;
2. It should be possible to re-combine the cations and anions to the salt minerals that have been dissolved from the sample and estimate the mineralogical composition of the original sample (if the mineralogical composition is relatively simple, which can be checked by XRD analysis).

Because the ALS assays did not provide results for the Chloride test the charge balance test could not be applied to these assays. For the complete SRC and K-UTEC assays this

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test could be applied. Based on experience with assays from many different potash deposits an assay is considered suspect by the author if the absolute difference

2*(cation charge – anion charge)/(cation charge + anion charge) * 100 %

is larger than 2.5 % and such assay requires further scrutiny. All the assays of the SRC and K-UTEC laboratories passed this test, usually with absolute charge balance errors below 1 %, suggesting internally consistent results for the assays.

For the ALS analysis the Cl content has been estimated by assuming that the amount required to achieve a charge balance is present. Afterwards a mineralogical composition was established for each assayed sample based on the author's experience with the mineralogy of the deposit in other parts of the basin (e.g. Rauche & van der Klauw, 2015, /18/) with the following scheme:

1. Na combined with Cl to Halite
2. Ca combined with SO_4 to Anhydrite;
3. Remaining SO_4 combined with Mg (rarely) to Kieserite, any remaining Ca combined with Mg and Cl to Tachyhydrite;
4. Remaining Mg combined with K and Cl to Carnallite;
5. Any remaining Mg combined with Cl to Bischofite, any remaining K combined with Cl to Sylvite.

Using this estimated mineralogy, the weight of the minerals was calculated (including any mineral water for example in Carnallite) and summed up. With the insoluble content added this should be close to 100 % provided the mineralogy is correctly estimated.

For the ALS assays, where the insoluble content was not determined, a total sum between 95 and 101% has been considered acceptable. The majority of the Ba-002 and Ba-003 samples analysed by ALS produce a mineralogical composition for the rocks which is acceptable with minimal amounts of Kieserite, Tachyhydrite/Bischofite (except in known Tachyhydrite sections) and Sylvite (except in the sylvinite sections), suggesting that the relative amounts of the cations have been determined correctly. A significant number of carnallitite samples, however have a too high total sum, suggesting that although the relative amounts of cations are correct, there is an overestimation of either:

- All cations (dilution error in the laboratory), improbable because it only occurs in carnallitite samples not in Halite samples;
- Na, improbable for the same reason;
- K and Mg together, which is probably the cause, since only carnallitite samples are involved.

Because this effect was not observed in the standards inserted with the samples, this suggests that the supplied standards were not suitable to check the quality of the laboratory procedure. The check analysis confirm, that compared to the other two laboratories, the ALS laboratory tends to overestimate K and Mg. The high total mineral sums are most pronounced in the Ba-002 samples (compare Figure 14), but are less pronounced, but also present in the Ba-003 samples (compare Figure 15).

For the K-UTEC and SRC laboratory where the insoluble content was determined a total sum of the minerals between 97.0 % and 102% has been considered acceptable. Over 99 % of the samples analysed by SRC and over 95 % of the samples analysed by K-UTEC passed this test. Samples not passing this test were generally conspicuous in other respect too. Conspicuous samples analyzed by the K-UTEC laboratory, typically have a few % of Bischofite in their estimated mineralogy in parts of the sequence where this is not expected.

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This typically occurs when either the Mg-content is slightly overestimated, or the K-content is slightly underestimated and there is not enough K to use all Mg to combine to Carnallite. The comparison between the K-UTEC and the SRC laboratory (e.g. Figure 16), with a tendency for K-UTEC to have a slightly lower K-content for the same sample supports the K-content underestimation hypothesis. The difference is, however, not large enough to have a significant influence on a Mineral Resource estimate.

Less than 1 % of the analysis of both laboratories show indications for outliers in the concentration of the minor components Ca and SO_4, that might result in the calculated presence of either the mineral Kieserite (SO_4 so high that $MgSO_4$ is formed), Antarcite (Ca so high and Mg so low, that there is an excess of $CaCl_2$) or of Tachyhydrite together with Sylvite (Ca so high and Mg so low that not all K can be combined to Carnallite).

11.3.3 Conclusion

The re-analysis of the samples with K-content over 5 % from the drill holes Ba-002 and Ba-003 by the SRC and K-UTEC laboratories, as well as the SRC analysis of the Ba-002 extension samples are in the opinion of the author of such quality that they can be used as basis for the Mineral Resource Estimate. The plausibility analysis for the assays by ALS suggests in the opinion of the author, that the assays for the samples with low potash content by ALS, even if they show a similar tendency to overestimate the K-content as the samples with the high potash content, do not result in a significant over-estimate of the K-content of these samples. It is the opinion of the author that the samples from ALS with K-content below 5 %, will have minimal influence on the overall K-content and can also be used as basis for the Mineral Resource Estimate.

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12 Data Verification

During the site visit on October 16, 2022 the cores from Ba-003 and Ba-001 were reviewed. The review confirmed that the core pictures provided are of the actual cores of the project and that sampling had taken place as shown on the sample protocols. The actual location of drill hole Ba-002 and BATC-1 were verified in the field.

Spot checks were made to verify that the EXCEL files with the analytical results conformed to the analysis protocols.

For the drill holes Ba-002 and Ba-003 a qualitative comparison has been made between estimated mineralogy from assays and the natural gamma ray log. These comparisons show that there is a reasonable correspondence between thickness and mineral grade for potash seams from the assay and width and intensity of the natural gamma peaks. The presence of high grade Carnallite seams at these depth intervals is confirmed.

13 Mineral Processing and Metallurgical Testing

No Mineral Processing or Metallurgical test work has been performed.

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14 Mineral Resource Estimates

In preparing any estimates presented in this Report, the authors were guided by the following definition used in the CIM Definition Standards (CIM, 2014, /3/):

> 'A Mineral Resource is 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."

The term "Mineral Resource" covers mineralisation and natural material of intrinsic economic interest that has been identified and estimated through exploration and sampling and within which mineral reserves may subsequently be defined by the consideration and application of modifying factors. The phrase 'reasonable prospects for economic extraction' implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction.

It is the opinion of the author that historical drilling and subsequent exploration drilling in 2023 by MLP are sufficient to confirm that the Mayumba Permit in the vicinity of the Ba drill holes (Ba-well Block, see Figure 8) have substantial carnallitite beds and subordinate Sylvite beds within the evaporite Cycles II to VIII of the Loume evaporites (see Table 7, Table 9, Table 11, and Table 13). The production of MOP and other products by DEUSA International Gmbh (DEUSA) in Germany since 1989 at its carnallitite deposit demonstrates that commercial recovery of potash from carnallitite using solution mining and brine processing is possible. The DEUSA mines from a deposit with a similar depth as the carnallitite from Cycles III to VIII at the Ba- well block, but with overall lower thickness of the deposit at a comparable average Carnallite grade, but with a higher content of sulphate minerals, which is more problematic for the solution mining operation. Therefore, in the opinion of the authors, there exists a reasonable prospect for eventual economic extraction of the carnallitite from the evaporite Cycles II to VIII of the Loume evaporites in the Ba-well block and Mineral Resources can be estimated for this area.

14.1 Basic Assumptions

In determining the potential extent, quality, and volume of Carnallite Mineral Resource in the Mayumba Permit Area, the authors were guided by principles for exploration and sampling techniques commonly used in the world-wide potash industry for Carnallite exploration as well as by the guidelines established by CIM for the NI 43-101 for reporting Mineral Reserves and Mineral Resources.

- The primary tool employed to determine thickness of the Carnallite mineralisation is core drilling and description combined with geophysical logging.
- The Carnallite concentration along the length of the mineralised horizons is obtained from assays on core samples. Where core loss occurs within the Carnallite mineralisation the concentration can be estimated from the geophysical wire line logs, which have been calibrated with further core data (> 40 % of the Carnallite mineralized core should be available).

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- As described in the guidelines for Mineral Resource estimation for potash (CIM, 2014, /3/), potash deposits typically display consistency of grade and thickness over large areas and it is important to define areas, where the potash mineralisation is absent.
- The extent of the Carnallite mineralisation and the continuity between drill holes can be determined by subsurface mapping correlating drill hole data, eventually in combination with seismic investigations.
- A Radius of Influence (ROI) is defined around each drill hole or underground mine working with information about interpolated thickness and grade of the deposit be-tween them. The size of the ROI depends on the resource category and the confidence in the continuity of the deposit.

The determination of thickness of the carnallitite seams and the KCl and/or Carnallite content of these seams has been discussed in the geology section, where also a preliminary geological model for the investigated part of the Mayumba Permit Area has been introduced. This geological model will be further refined and discussed in the following text, especially with regard to consistency of grade and thickness and eventual absence of potash mineralisation. Finally, the estimation method and ROI will be discussed.

14.1.1 Geological Model

The geological model of the deposit from sections 7.3.2 and 7.3.4 identifies 19 carnallitite seams and horizons potentially considered suitable for solution mining in the drill holes Ba-002 and Ba-003 The seams and horizons are considered to be near horizontal and offset by a normal and a reverse fault. The seams and horizons can be divided into:

- homogeneous seams or horizons with either a single carnallitite seam where the rock salt is mainly present as Halite single crystals and irregular thin lenses (seam 5 of Cycle VII, seams 2 and 3 of Cycle VI, seam 1 of Cycle IV and seam 1 of Cycle III) or horizons with several carnallitite seams, that in all wells have rock salt layers of relatively constant thickness between the seams, as in the horizons consisting of seams 1-2, 3-4, and 6-7 of Cycle VII, seams 2-5 and 6-11 of Cycle VI, and seams 5-9 of Cycle V.

  and

- inhomogeneous seams consisting of an interlayering of carnallitite dominated and rock salt dominated layers, with variable thickness between wells, where either one or both, the upper and lower boundaries of the seams are not unequivocally defined, but thickness can be increased by accepting lower grade, or the other way around. Typical inhomogeneous seams are the seams 2 to 4 of Cycle VIII and the seams 8 to 13 in Cycle VII.

The Table 9, Table 11, and Table 13 indicate that even for the homogeneous seams and horizons there is some variation in thickness and grade between the 2 drill holes considered. This might reflect certain trends in grade or thickness, but with only 2 drill holes this cannot be confirmed, till further data become available. The inhomogeneous seams of Cycle VIII (Table 7) cannot be correlated between the 2 drill holes with regards to grade and thickness, because of different intensity and stratigraphic penetration depth of the transformation reaction Carnallite to Sylvite. In Ba-003 the transformation of seam 4 from Carnallite to Sylvite has resulted in 3 sub seams that are potentially mineable, whereas in Ba-002, no similar seams can be defined, because of general lower grades of the sylvinite seams

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interpreted to reflect more intense reaction with the circulating brines. The seam 2 and seam 3 present as Carnallite in Ba-003 are present as Sylvite seams in Ba-002, allowing no grade and thickness correlation. The inhomogeneous seams 8 to 13 in Cycle VII that are partly considered mineable in Ba-002 are there in the stratigraphy, but in Ba-003 do not make the grade or thickness for potential mineability. Again, this might reflect trends in grade or thickness, but with only 2 drill holes this cannot be confirmed, till further data become available.

Because extrapolation and interpolation of thickness and grade with only 2 data points is not considered productive the geologic model for the mineral resource estimate is simplified by assuming that over the northern area thickness and grade of potash seams and horizons are as determined along Ba-002, whereas in the southern area thickness and grade are as determined along Ba-003. The actual extent of the areas will be defined over the Radius of Influence.

Areas of absent potash mineralisation are a major factor in the Saskatchewan potash industry which form the major experience horizon for definition of the guidelines for Mineral Resource estimation for potash (CIM, 2014, /3/). For the Congo Coastal basin, the absence of potash mineralisation can occur due to a combination of fault activity and water/brine circulation, as has been documented for the loss of the Holle mine by Feuga et al (2005, /7/). A review of further documentation of this incident and several field visits, suggest that a natural more or less round and even area occurs as a surface expression of the relatively young dissolution structure that was encountered in the Holle mine.

Evaluation of the available drill hole data suggests that no faults are present between the drill holes Ba-002, Ba-003 and Ba-001, but the boundary faults of the uplifted block are relatively close. The approximate location of this faults in the area under investigation is known and has been accounted for in the Mineral Resource Estimate. In the investigated area and in the vicinity of these faults, there are no surface indications for such circular dissolution structures.

14.1.2 Estimation Method

In calculating the Mineral Resource tonnages, the following procedures were completed (Mineral Resources are given as mineralisation in place):

(1) Around each drill hole, an ROI was defined and by intersection of these ROI's, polygons around drill holes where constructed.

(2) For each polygon, the on-shore area within the Mayumba Permit was determined. Theoretically, it might be feasible to develop caverns in the Lagoon, but there is no indication that this would be economic. The volume for each identified mining seam was calculated by multiplying the remaining area with the thickness of the mining seam.

(3) The volume calculated for each seam was multiplied with a carnallitite tonnage factor (density), which was determined individually for each area and for each seam from the relative abundance of the salt minerals in the carnallitite seam in that area varying between 1.67 g/cm³ for high grade carnallitite and 1.92 g/cm³ for low grade carnallitite seams to obtain a carnallitite tonnage. For Sylvinite seams a sylvinite tonnage factor that was determined similarly was used. Depending on the Sylvite grade this factor varied between 2.11 g/cm³ and 2.14 g/cm³.

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(4) The KCl grade of each seam was taken from the relevant tables of section 7.3.2. from this report.

The Report classifies the Carnallite mineralisation in terms of inferred, indicated and measured Mineral Resources as defined by NI 43-101 in CIM (2014, /3/). This reflects the level of confidence in the extent and grade of the identified carnallitite or sylvinite body. Taking into account that for this initial Mineral Resource Estimate only 2 completely cored and assayed drill holes are available no Measured Mineral Resources are defined.

Regarding the extent of the mineralisation around a drill hole for the remaining categories, the authors of the report are the opinion that for the investigated part of the Carnallite deposit in the Mayumba Permit Area:

- Indicated Mineral Resources occur within a radius of 1,000 m of a drill hole as long as the seismic investigations show no significant thickness change of the overall salt section. The ROI for Indicated Mineral Resources is not extended beyond the position of faults interpreted from the seismic sections.
- Inferred Mineral Resources occur within a radius of 2,000 m of a drill hole, minus the indicated resources within this area. Taking into account that for Inferred Mineral Resources the continuity of grade and thickness only have to be implied, the ROI for this category is extended to the downthrown block over a fault interpreted from the seismic sections.

Although only 2 Ba-drill holes have adequate information to define Mineral Resources, the ROI's for Indicated Mineral Resources for Carnallite seams/horizons has been taken as 1,000 m and for Inferred Mineral Resources as 2,000 m, because of the stratigraphic continuity of the seams and horizons. The single seams and horizons can be correlated over a distance of more than 15 kilometers with the Banio drill holes to the SE, or even over more than 50 km to the south in the ROC. Even for the inhomogeneous Carnallite seams for which a correlation regarding thickness and grade is not possible, the natural gamma logs for the Banio holes suggest that in the same stratigraphic positions it might be possible to define these seams taking into account thickness and grade criteria. The ROI's have been limited, because the grade continuity over larger distances has not yet been proven.

The ROI for Inferred Mineral Resources is extended beyond interpreted normal or reverse faults in the downthrown block, because these faults are interpreted to have been active past deposition of the Carnallite. A potential negative influence of these faults on the Carnallite mineralisation has been accounted for by the 100 m width barrier along the faults that also accounts for uncertainty in position of the faults interpreted from the seismic data and the changing position of the faults with depth due to dip of the fault plane.

The authors of the report are the opinion that in the investigated part of the Sylvite deposit in the Mayumba Permit Area:

- Indicated Mineral Resources occur within a radius of 500 m of a drill hole as long as the seismic investigations show no significant thickness change of the overall salt section.
- Inferred Mineral Resources occur within a radius of 1,000 m of a drill hole, minus the indicated resources within this area.

The ROI for Indicated and Inferred Mineral Resources is significantly smaller than the Area of Influence (AOI) that KORE used for the estimation of Indicated and Inferred Sylvite Resources at their Kola Project (SRK et al., 2012, /20/), reflecting that compared to the Kola project, only limited drill hole and seismic information is available. Since the extent of the Sylvite mineralisation is structurally controlled the ROI's for the Sylvinite mineralisation are not extended beyond faults interpreted from the seismic sections. Because there remains

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some uncertainty about the exact position of the faults interpreted from the seismic sections a 100 m width barrier with no Mineral Resources has been defined along each interpreted fault for the Sylvite Mineral Resources. This barrier also accounts the potentially changing position of the faults with depth due to dip of the fault plane.

The extrapolated areas with Indicated and Inferred Resources for the Sylvite Mineralisation identified in seams of Cycle VIII (Ba-002 and Ba-003) are shown in Figure 18. The extrapolated areas with Indicated and Inferred Resources for the Carnallite Mineralisation identified in seams of Cycle VIII (Ba-003) are shown in Figure 19. The polygons for Indicated and Inferred Mineral Resources around Ba-003 end in the direction of Ba-001, which did not intersect potash bearing rocks of Cycle VIII at equal distance between the wells. This reflects the basic assumptions of the geologic model. As described in section 7.3.3 the dip of the Sylvite/Carnallite mineralisation boundary is much larger than the dip of the near horizontal seams. With the stratigraphic position of the Sylvite/Carnallite boundary in Ba-002 much lower than at Ba-003, the extrapolated Sylvite/Carnallite boundary will cross cut the seams, much closer to Ba-003. Lacking further data about the orientation of this boundary, it has been interpreted to be oriented perpendicular to the line connecting both wells. On the Ba-002 side of this boundary it cannot be excluded that Sylvite instead of Carnallite is present, so the Ba-003 polygon for Carnallite mineralisation in the Ba-002 direction ends at this boundary. Without further evidence, however, it cannot be assumed that beyond this boundary the same seams are present as Sylvite seams.

The extrapolated areas with Indicated and Inferred Resources for the Carnallite Mineralisation identified in seams of Cycle VII to Cycle V (Ba-002 and Ba-003) are shown in Figure 20. The Polygon for Inferred Mineral Resources around Ba-003 ends near Ba-001, because it has not been proven yet with further drilling, that the original interpretation of intersection of a major fault in Ba-001 is not correct. The extrapolated areas with Indicated and Inferred Resources for the Carnallite Mineralisation identified in seams of Cycle IV to Cycle III (Ba-002) are shown in Figure 21.

14.2 Mineral Resource Statement

It is the opinion of the authors that by taking into account all of the factors presented herein, that 19 potash seams/horizons identified in 8 drill holes have the potential for economical extraction using the solution mining method and a saleable product can be produced by processing the brine from solution mining. Subject to further geological, geophysical, rock mechanical, and engineering studies, these 19 potash seams/horizons constitute a “Mineral Resource” as defined by National Instrument 43-101 and CIM (2014, /3/). The Mineral Resources will be classified below according to the methods mentioned before. Mineral Resources are reported as “in place” material, without any deductions for potential mining and processing recoveries.

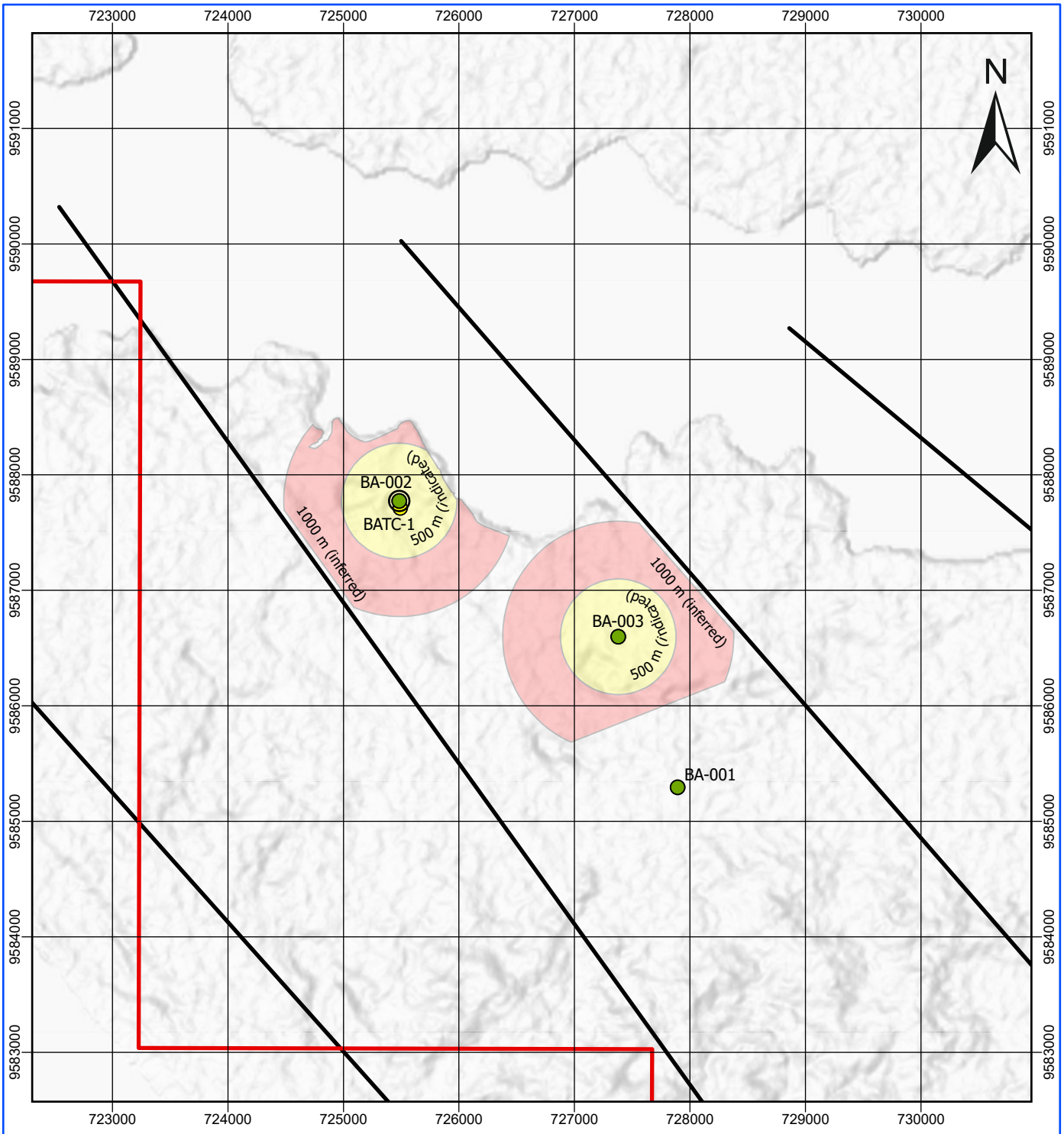
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Legend:

- Indicated fault
- Potash Exploration Drill Holes
- Hydrocarbon Exploration Drill Holes
- Permit Boundary

Resource Areas

- Indicated (500 m)
- Inferred (1000 m)

Scale: 1:50.000

0 1 2 Kilometers

Coordinate System: WGS 1984 UTM Zone 32S

Millenial Potash

Figure 18

Polygons around Drill Holes showing Areas for Inferred and Indicated Mineral Resources for the Cycle VIII Sylvite Mineralisation

Datum: 20.11.2023
Z:\@ArcGIS_Pro\23-006_MillennialPotash_PotashExpl_Banio\23-006_MillennialPotash_PotashExpl_Banio.aprx

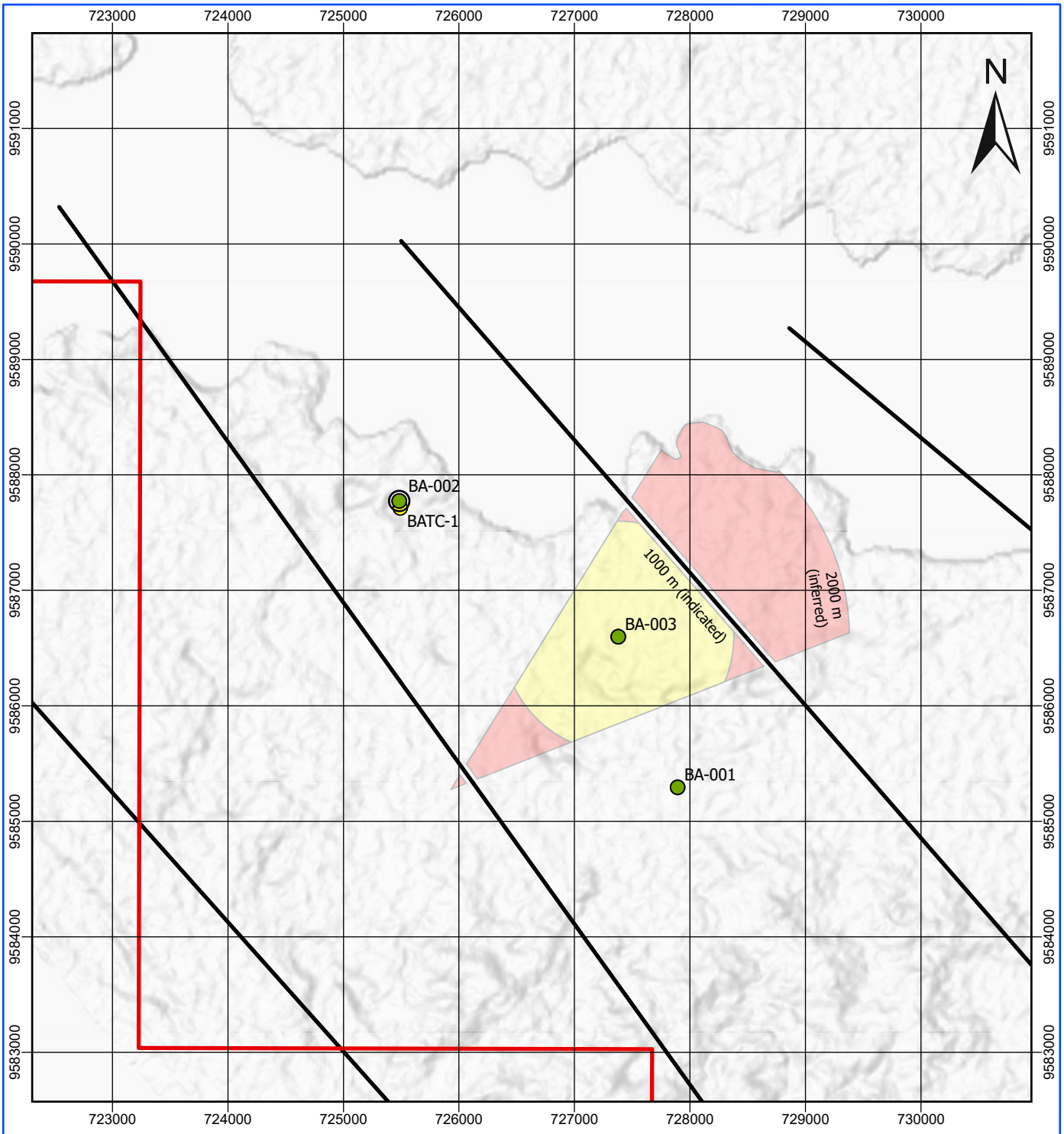
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Legend:

- Indicated Fault
- Potash Exploration Drill Holes
- Hydrocarbon Exploration Drill Holes
- Permit Boundary

Resource Areas

- Indicated (1000 m)
- Inferred (2000 m)

Scale: 1:50.000

0 1 2 Kilometers

Coordinate System: WGS 1984 UTM Zone 32S

Millenial Potash

Figure 19

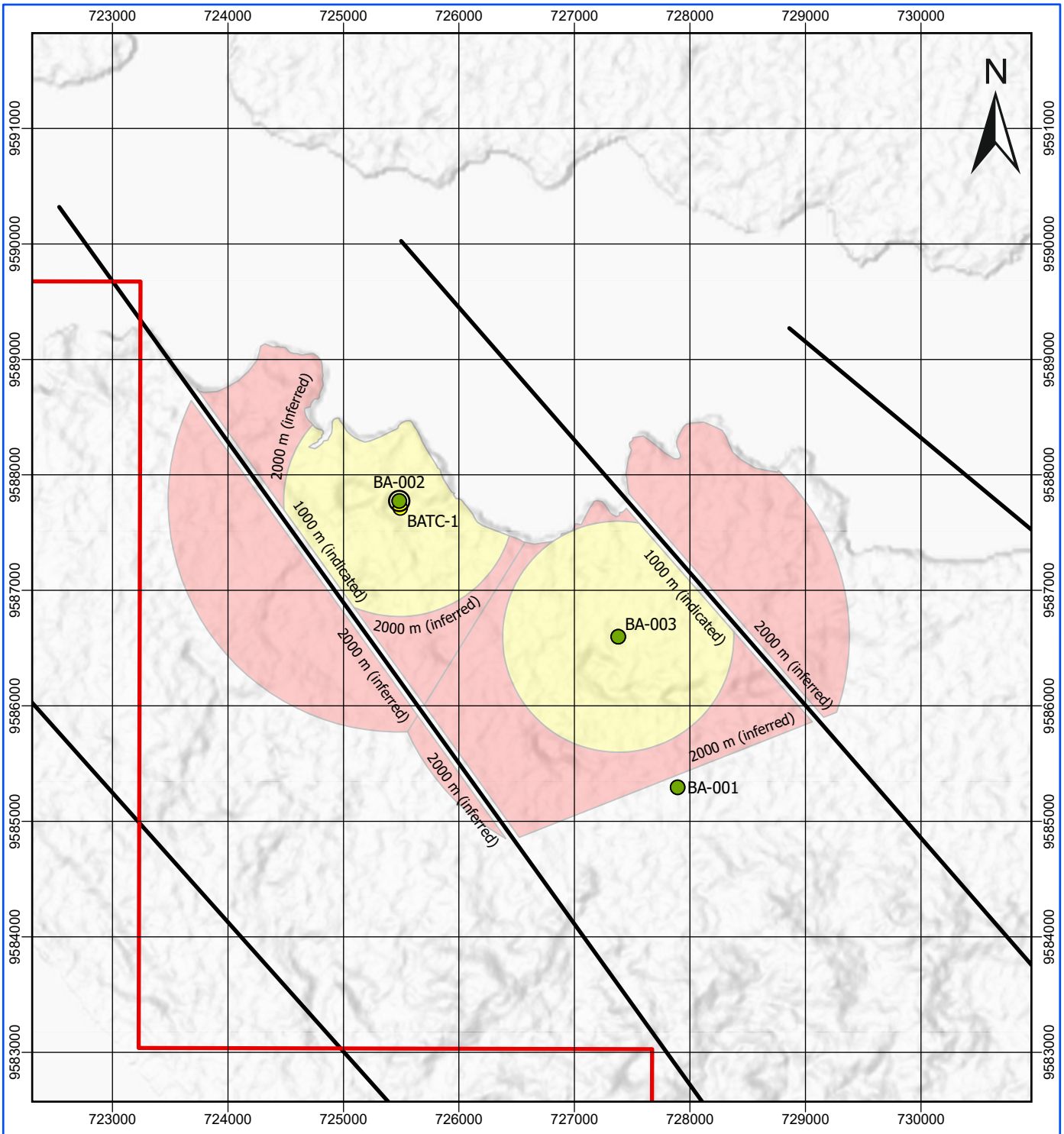
Polygons around Drill Holes showing Areas for Inferred and Indicated Mineral Resources for the Cycle VIII Carnallite Mineralisation

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Legend:

- Indicated Fault
- Potash Exploration Drill Holes
- Hydrocarbon Exploration Drill Holes
- Permit Boundary

Resource Areas

- Indicated (1000 m)
- Inferred (2000 m)

Scale: 1:50.000

0 1 2 Kilometers

Coordinate System: WGS 1984 UTM Zone 32S

Millenial Potash

Figure 20

Polygons around Drill Holes showing Areas for Inferred and Indicated Mineral Resources for the Cycle V to VII Carnallite Mineralisation

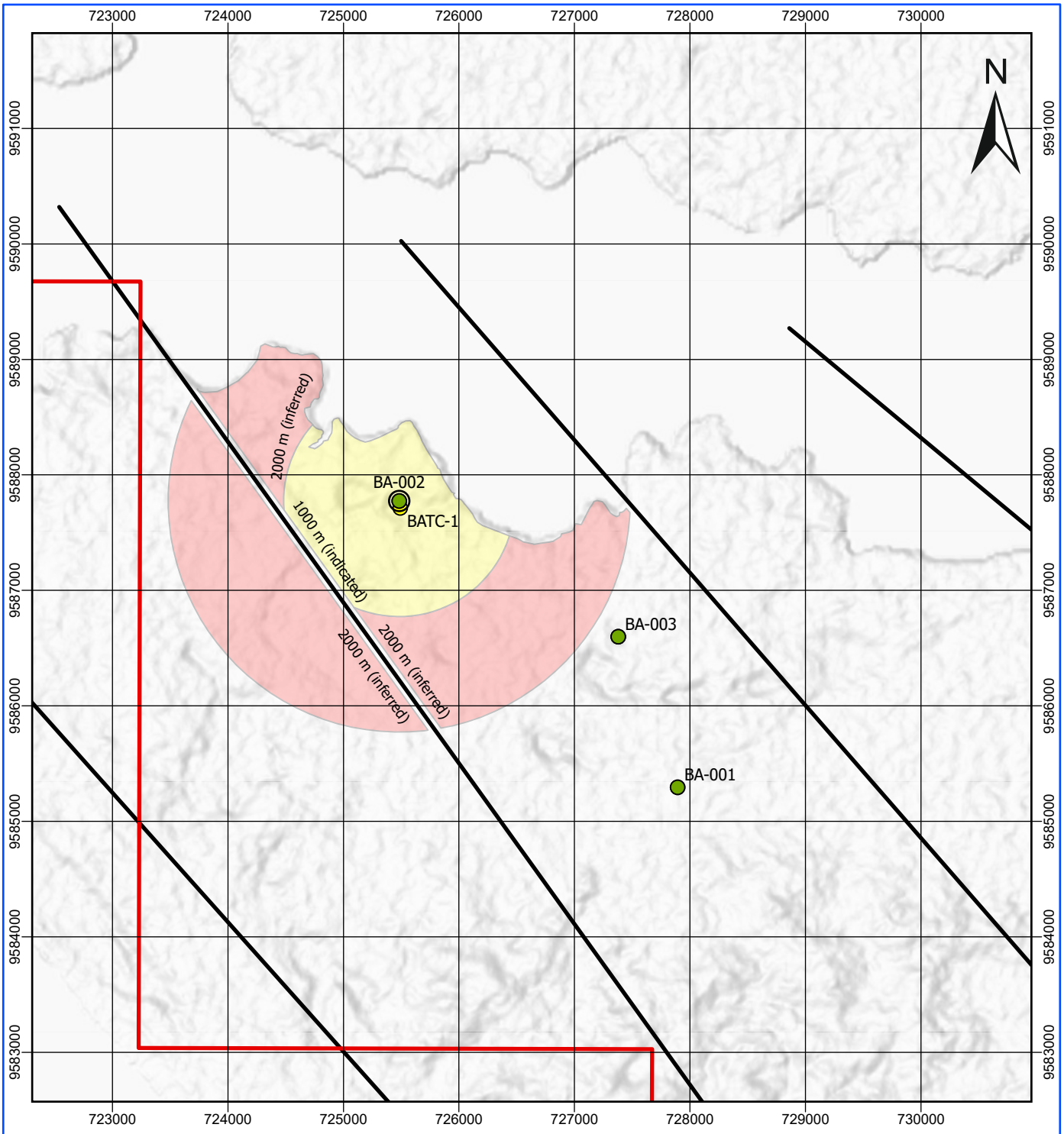
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Legend:

- Indicated Fault
- Potash Exploration Drill Holes
- Hydrocarbon Exploration Drill Holes
- Permit Boundary

Resource Areas

- Indicated (1000 m)
- Inferred (2000 m)

Scale: 1:50.000

0 1 2 Kilometers

Coordinate System: WGS 1984 UTM Zone 32S

Millenial Potash

Figure 21

Polygons around Drill Holes showing Areas for Inferred and Indicated Mineral Resources for the Cycle III to IV Carnallite Mineralisation

14.2.1 Inferred Mineral Resource

For “Inferred Mineral Resources” NI 43-101 uses the definition of CIM (2014, /3/):

> “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.”

As discussed in the previous section in the opinion of the authors the Inferred class of Mineral Resources extends beyond a recently investigated drill hole with an ROI of 2 km for seams wit Carnallite mineralisation and 1 km for seams with Sylvite mineralisation, excluding the Indicated and Measured Mineral Resources from this drill hole. The extrapolated areas for Inferred Mineral Resources of all seams are shown in Figure 18 to Figure 21.

The Inferred Mineral Resources Estimate for

- the Cycle VIII potash seams of Ba-002 and Ba-003 are presented in Table 20.
- the Cycle VII potash seams of Ba-002 and Ba-003 are presented in Table 21.
- the Cycle VI potash seams of Ba-002 and Ba-003 are presented in Table 22
- the Cycle V potash seams of Ba-002 and Ba-003 are presented in Table 23.
- the Cycle IV and Cycle III potash seams of Ba-002 are presented in Table 24.

Table 20 Summary of the estimated Inferred Mineral Resources for the Cycle VIII Seams. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	**Area**	**Thickness**	**Density**	**Tonnage**	**Grade**
Ba-002		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 3-11	Sy	1.37	2.10	2.119	6.10	24.6
Seam 2	Sy	1.37	2.70	2.121	7.85	25.2
Ba-003						
Seam 4a	Sy	1.88	2.70	2.133	10.83	18.4
Seam 4b	Sy	1.88	2.31	2.135	9.27	19.0
Seam 4c	Sy	1.88	2.45	2.117	9.75	21.1
Seam 3	Ct	2.46	4.63	1.779	20.26	17.0
Seam 2	Ct	2.46	5.11	1.823	22.92	14.5

A summary of the estimated Inferred Mineral Resources is given in Table 32 in section 25. The total Inferred Mineral Resources for the Carnallite Mineralisation are estimated at 1,115.3 million tonnes of mineralised material at an average grade of 15.8 % KCl (58.8 % Carnallite). The Total Inferred Mineral Resources for the Sylvite Mineralisation are estimated at 43.8 million tonnes of mineralised material at an average grade of 21.2 % KCl (Sylvite). This amounts in total to 185.3 million tonnes of KCl within the mineralized material of the Mineral Resources of the Inferred category.

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Table 21 Summary of the estimated Inferred Mineral Resources for the Cycle VII Seams. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Ba-002		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 10	Ct	3.87	1.25	1.854	8.97	13.4
Seam 9	Ct	3.87	1.50	1.829	10.62	14.0
Seam 8	Ct	3.87	1.55	1.866	11.19	12.6
Seam 6-7	Ct	3.87	3.10	1.871	22.45	13.2
Seam 5	Ct	3.87	2.55	1.815	17.91	15.5
Seam 3-4	Ct	3.87	5.35	1.844	38.18	14.6
Seam 1-2	Ct	3.87	7.50	1.772	51.44	16.2
Ba-003						
Seam 8	Ct	4.99	1.41	1.827	12.86	14.5
Seam 6-7	Ct	4.99	3.26	1.820	29.61	15.0
Seam 5	Ct	4.99	2.64	1.784	23.50	16.8
Seam 3-4	Ct	4.99	5.02	1.819	45.58	15.0
Seam 1-2	Ct	4.99	6.99	1.786	62.28	16.7

Table 22 Summary of the estimated Inferred Mineral Resources for the Cycle VI Seams. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Ba-002		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 6-11	Ct	3.87	13.81	1.809	96.70	14.7
Seam 2-5	Ct	3.87	13.80	1.778	94.94	15.6
Ba-003						
Seam 6-11	Ct	4.99	11.77	1.802	105.81	15.9
Seam 2-5	Ct	4.99	15.72	1.769	138.75	16.9

Due to the uncertainty attached to the Inferred Mineral Resources, it is not certain that continued exploration and further technical studies will upgrade these Mineral Resources to indicated or measured status. The confidence in this estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. The Inferred Mineral Resources therefore are excluded from estimates forming the basis of feasibility or other economic studies.

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Table 23 Summary of the estimated Inferred Mineral Resources for the Cycle V Seams. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Ba-002		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 5-9	Ct	3.87	10.05	1.819	70.75	13.6
Seam 3	Ct	3.87	1.90	1.677	12.33	21.6
Seam 2	Ct	3.87	1.55	1.778	10.66	16.2
Ba-003						
Seam 5-9	Ct	4.99	9.82	1.826	89.46	14.6
Seam 3	Ct	4.99	2.22	1.710	18.95	20.1
Seam 2	Ct	4.99	1.55	1.735	13.42	19.1

Table 24 Summary of the estimated Inferred Mineral Resources for the Cycle IV and Cycle III Seams of Ba-002. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Cycle IV		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 1	Ct	5.46	4.16	1.778	40.39	17.1
Cycle III						
Seam 1	Ct	5.46	4.76	1.748	45.42	18.7

14.2.2 Indicated Mineral Resource

For “Indicated Mineral Resources” NI 43-101 uses the definition of CIM (2014, /3/):

> 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.

As discussed in section 14.1.2 in the opinion of the authors the Indicated class of Mineral Resources extends beyond a recently investigated drill hole with an ROI of 1 km for seams with Carnallite mineralisation and 0.50 km for seams with Sylvite mineralisation, excluding the Measured Mineral Resources from this drill hole. The extrapolated areas for Indicated Mineral Resources of all seams are shown in Figure 18 to Figure 21.

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The Indicated Mineral Resources Estimate for

- the Cycle VIII potash seams of Ba-002 and Ba-003 are presented in Table 25.
- the Cycle VII potash seams of Ba-002 and Ba-003 are presented in Table 26.
- the Cycle VI potash seams of Ba-002 and Ba-003 are presented in Table 27.
- the Cycle V potash seams of Ba-002 and Ba-003 are presented in Table 28.
- the Cycle IV and Cycle III potash seams of Ba-002 are presented in Table 29.

Table 25 Summary of the estimated Indicated Mineral Resources for the Cycle VIII Seams. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Ba-002		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 3-11	Sy	0.76	2.10	2.119	3.38	24.6
Seam 2	Sy	0.76	2.70	2.121	4.35	25.2
Ba-003						
Seam 4a	Sy	0.78	2.70	2.133	4.49	18.4
Seam 4b	Sy	0.78	2.31	2.135	3.85	19.0
Seam 4c	Sy	0.78	2.45	2.117	4.05	21.1
Seam 3	Ct	2.11	4.63	1.779	17.38	17.0
Seam 2	Ct	2.11	5.11	1.823	19.66	14.5

A summary of the estimated Indicated Mineral Resources is provided in Table 31 in section 25. The total Indicated Mineral Resources for the Carnallite Mineralisation are estimated at 636.5 million tonnes of mineralised material at an average grade of 15.8 % KCl (58.7 % Carnallite). The Total Indicated Mineral Resources for the Sylvite Mineralisation are estimated at 20.1 million tonnes of mineralised material at an average grade of 21.6 % KCl (Sylvite). This amounts in total to 104.5 million tonnes of KCl within the mineralized material of the Mineral Resources of the Indicated category.

An Indicated Mineral Resource may only be converted to a Probable Mineral Reserve, through application of modifying factors, outlined in at least a pre-feasibility study (CIM, 2014, /3/).

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Table 26 Summary of the estimated Indicated Mineral Resources for the Cycle VII Seams. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Ba-002		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 10	Ct	2.14	1.25	1.854	4.95	13.4
Seam 9	Ct	2.14	1.50	1.829	5.86	14.0
Seam 8	Ct	2.14	1.55	1.866	6.17	12.6
Seam 6-7	Ct	2.14	3.10	1.871	12.39	13.2
Seam 5	Ct	2.14	2.55	1.815	9.88	15.5
Seam 3-4	Ct	2.14	5.35	1.844	21.06	14.6
Seam 1-2	Ct	2.14	7.50	1.772	28.38	16.2
Ba-003						
Seam 8	Ct	2.95	1.41	1.827	7.61	14.5
Seam 6-7	Ct	2.95	3.26	1.820	17.53	15.0
Seam 5	Ct	2.95	2.64	1.784	13.91	16.8
Seam 3-4	Ct	2.95	5.02	1.819	26.98	15.0
Seam 1-2	Ct	2.95	6.99	1.786	36.87	16.7

Table 27 Summary of the estimated Indicated Mineral Resources for the Cycle VI Seams. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Ba-002		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 6-11	Ct	2.14	13.81	1.809	53.35	14.7
Seam 2-5	Ct	2.14	13.80	1.778	52.37	15.6
Ba-003						
Seam 6-11	Ct	2.95	11.77	1.802	62.64	15.9
Seam 2-5	Ct	2.95	15.72	1.769	82.14	16.9

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Table 28 Summary of the estimated Indicated Mineral Resources for the Cycle V Seams. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Ba-002		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 5-9	Ct	2.14	10.05	1.819	39.03	13.6
Seam 3	Ct	2.14	1.90	1.677	6.80	21.6
Seam 2	Ct	2.14	1.55	1.778	5.88	16.2
Ba-003						
Seam 5-9	Ct	2.95	9.82	1.826	52.96	14.6
Seam 3	Ct	2.95	2.22	1.710	11.22	20.1
Seam 2	Ct	2.95	1.55	1.735	7.95	19.1

Table 29 Summary of the estimated Indicated Mineral Resources for the Cycle IV and Cycle III Seams of Ba-002. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite

	Min.	Area	Thickness	Density	Tonnage	Grade
Cycle IV		**(km²)**	**(m)**	**(t/m³)**	**(million t)**	**(% KCl)**
Seam 1	Ct	2.14	4.16	1.778	15.79	17.1
Cycle III						
Seam 1	Ct	2.14	4.76	1.748	17.76	18.7

14.2.3 Measured Mineral Resource

For “Measured Mineral Resources” NI 43-101 uses the definition of CIM (2014, /3/):

> A “Measured Mineral Resource” is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with confidence sufficient to allow the application of modifying factors to support detail mine planning and final evaluation of the economic viability of the deposit.
>
> Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

The evaluation of the exploration work performed and the studies on modifying factors are not yet on a level that would allow the authors to define “Measured Mineral Resources” for the Mayumba Permit.

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14.3 Factors that Could Influence the Mineral Resource Estimate

There are a number of factors that could influence the Mineral Resource Estimate and these will be discussed in the following paragraphs.

The estimate presented here is based only on the confirmed thickness and grade of 2 cored drill holes over the sequence. Because of this, very conservative ROI's for Indicated and Inferred Mineral Resources have been selected, when compared to other projects in the same basin (e.g. Mengo Project, Rauche & van der Klauw, 2015, /18/). With the planned extension of Ba-001 and the new drill hole Ba-004 it can be ascertained that the continuity of thickness and grade that is expected, based on the good correlation between the geophysics of the Banio and Ba drill holes, is actually confirmed. This would allow the qualified person to increase the ROI for both Resource categories and also to increase the level of confidence in the data to estimate Measured Mineral Resources. Even without the added Mineral Resource from the two further drill holes, the extension of the ROI's to a larger radius would significantly increase the tonnages of the Mineral Resource estimate.

The estimate of Mineral Resources requires that the Qualified Person sees a reasonable prospect of economic extraction of the material. Since there is no potash operation known, where solution mining takes place "off shore", it has been conservatively assumed that within the area of the shallow laguna there is no reasonable prospect of economic extraction of the deposit. With a preliminary economic assessment for a solution mining operation, that provides reasonable estimates for CAPEX and OPEX for the operations of caverns in the laguna, which shows that at reasonable potash process, extraction and processing from such caverns is feasible, it would be possible to add at least part of the laguna area to the area for Indicated and Inferred Mineral Resources. This again would significantly increase the tonnages of estimated Indicated and Inferred Mineral Resources.

The estimate of the Carnallite Mineral Resources has been based on the assumption that the carnallitite will be mined by solution mining in caverns that may extend over several thinner seams. If an alternative solution mining method is selected, it might no longer be possible to economically mine relatively thin and low grade carnallitite seams and the boundary condition for thickness for solution mining might need to be shifted from > 1.25 m to > 2.5 m. This would reduce the tonnage of Carnallitite Mineral Resources in both the Indicated and the Inferred category by about 10 % at the same time increasing the overall grade of the remaining Mineral Resources.

15 Mineral Reserve Estimates

The Mayumba Exploration Permit is not an advanced property and the section is not yet relevant.

16 Mining Methods

The Mayumba Exploration Permit is not an advanced property and the section is not yet relevant.

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17 Recovery Methods

The Mayumba Exploration Permit is not an advanced property and the section is not yet relevant.

18 Project Infrastructure

The Mayumba Exploration Permit is not an advanced property and the section is not yet relevant.

19 Market Study and Contracts

The Mayumba Exploration Permit is not an advanced property and the section is not yet relevant.

20 Environmental Studies, Permitting and Social or Community Impact

The Mayumba Exploration Permit is not an advanced property however Millennial Potash has taken steps to ensure that the protection of the environment, and interaction with the local communities well managed in and around the project area. In March this year the company re-submitted an updated Notice of Impact (NOI) for the project, as an addendum to the NOI for the project that was approved back in 2017. The updated NOI covers all potential exploration sites in the current NW exploration area and also drilling and associated work in the SW area of the Mayumba Exploration Permit.

Millennial Potash have engaged the Environmental & Social Sustainability (ESS) Group, who have vast experience in managing the impact of exploration activities for similar companies throughout Africa. Through ESS, Millennial Potash have deployed a highly experienced HSEC manager to manage day to day activities of the company in Gabon. ESS are currently drafting the ESG and Sustainability Strategy for the Banio Project, which sets out how the Project proactively address all related issues during the exploration and into the construction phase. The company has developed a comprehensive HSEC Management System (HSECMS) to cover the extended exploration period together and is developing an operational HSECMS documents focussing on additional work that will be undertaken during key construction and operational phases.

Work has also commenced on developing the ESIA Terms of Reference (TOR) that will be sent to potential ESIA consultancies for their proposals in 2024. The future ESIA will require a detailed baseline and impact assessment studies on biodiversity, the physical environment, as well impacts of the social / communities within the study area.

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21 Capital and Operating Costs

The Mayumba Exploration Permit is not an advanced property and the section is not yet relevant.

22 Economic Analysis

The Mayumba Exploration Permit is not an advanced property and the section is not yet relevant.

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23 Adjacent Properties

There are no direct adjacent potash properties to the Mayumba Permit. Nearest potash properties within the same basin and because of similarities in mineralisation relevant for the Mayumba Permit occur about 60 km SE of the Mayumba Permit where Kore Potash plc, has two mining licenses and an exploration license for three different projects:

- The Kola Sylvinite project has a mining license since 2013, and in 2017 a mining convention with the ROC was ratified. For location see Figure 2. A PFS study was finished in 2012 (SRK et al., 2012 /20/) and a feasibility study (FS) is in progress for conventional mining of the sylvinite, which will be processed to a MOP at a flotation plant at surface.
- The Dougou carnallitite project has a mining license since 2017. The project is located SW of the Kola License (Figure 2) and aims at solution mining the carnallitite seams identified as Cycle VIII 2-3 and 4, as well as cycle IX 3 in this study. The project has a scoping study status (Kore, 2015, /11/).
- The Dougou extension (DX) or Yangala project is covered by a new Sintoukola exploration license, and is in the exploration stage. There are good indications that a significant sylvinite deposit can be defined in this area, located NW of the Dougou project (Kore, 2020, /12/).

24 Other Relevant Data and Information

At this stage of the project there is no further relevant data or information available.

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25 Interpretation and Conclusions

Millennial Potash Corp. (MLP or the “Company”), a Canadian registered company, has the option to acquire 100% of Equatorial Potash thereby acquiring 100% of Mayumba Potasse Sarl, (Mayumba Potasse) a Gabonese registered company, which holds the rights to the “permis de recherché minière pour la potasse et sels connexes n° G5-595 dènommé “Potasse et sels connexes Mayumba” (Mayumba Permit) in the Republic of Gabon (ROG).

The Mayumba Permit is located in the Congo Coastal basin which has been explored for potash for over 60 years and which has a well-defined stratigraphy with 10 depositional cycles in the evaporite sequence. Single potash seams or typical interlayering of rock salt with potash seams allow us to define which cycle is encountered. Within the salt sequence these cycles (and seams) can be correlated over distances over more than 60 km in this basin.

For the evaluation of the Property in this Technical Report, the author has relied on the information from the 2017 potash exploration drill holes, Ba-001, Ba-002, Ba-003 and the information from drill hole Ba-002 to a depth of 552.50 m obtained in 2023. Further information from or near the Mayumba Permit consisting of well reports and geophysical logging data were available from hydrocarbon exploration drilling in the 1970’s by Elf Gabon (Banio-1 to Banio-4), in 1991 (Banio-Tchigana 1, BATC-1) and in 2010 by Maurel and Prom (Banio-5). Deposits data from drilling are only available for the southern part of the Property. Furthermore, seismic data consisting of 34 lines (datasets) of about 411 line kilometers length over the southern part of the Property, gathered in 3 different campaigns (BAN90, TMP90, and MNPM11) between 1990 (BAN and TMP) and 2012 (MNPM), has been used to develop the geological model over the southern part of the Property.

On the seismic sections faults off-setting the base and top of the salt have been interpreted. By connecting faults with similar conditions over several seismic sections a pattern of faults has been constructed. These faults divide the deposit into blocks bounded by NW-SE striking normal faults (locally reversed) and by NE-SW striking strike slip or transform faults that facilitate movement along the normal faults. This interpretation is supported by the observations on the stratigraphy of the salt section from the available drill holes, which with the exception of Ba-001 at least show 4 typical evaporite Cycles that can be correlated over the whole Congo Coastal basin. For the geological model it is assumed that the layering within each block is near horizontal. The drill hole Ba-001 was discontinued after penetrating about 20 m in the salt section, because steep layering in carnallitite rocks was observed and interpreted as drilling into a fault zone. The author, from experience in the basin, interprets the steep layering in the carnallitite as a large disturbed block of carnallitite that floats in a matrix of Tachyhydrite, with the normal potash bearing sequence continuing further down. This kind of structure is known from other projects. In Ba-001 the top of cycle VII, typically Tachyhydrite rich has been encountered directly below the Anhydrite capping the top of the salt section.

All Ba drill holes and the hole BATC-1 are present on an uplifted block, which allowed circulation of brines in the top of the deposit and some of the Carnallite seams have been transformed to Sylvite. Hole Ba-003 shows a nearly complete Cycle VIII with the boundary between Sylvite and Carnallite transformation in the lower part of potash seam 4. In the Cycles V to VII the Ba-003 potash seams can be correlated with similar seams regarding thickness and grade with seams in Ba-002 and regarding thickness with seams in BATC-1 as well as well as with the seams in the Banio holes. At hole Ba-002 a few tens of meters of the upper part of Cycle VIII are missing and the boundary of Sylvite to Carnallite transformation is present at the top of Cycle VII. This hole was extended in 2023 and confirmed further potash seams in Cycle IV and Cycle III that due to interlayering of rock

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salt, clay dominated layers and potash seams were not unequivocally identified from the geophysical logging of nearby hole BATC-1. Similar potash seams were identified from the geophysical logging data of the Banio holes with exception of Banio-3 and Banio-2 (Cycle III potash seam). The extension confirmed that as in BATC-1 the Cycle II at Ba-002 contained no significant potash seams, contrary to the Banio holes, which show significant thickness of a Cycle II potash seam. On the uplifted bock the elevation of the top of Cycle VII in the Ba-holes and the BATC-1 hole suggest near horizontal layering with a minimal dip to the SW. The Carnallite/Sylvite transformation boundary dips steeper, indicating that the block has a more complex movement history.

Besides the Cycle II to Cycle VIII and their potash seams, the Banio drill holes also show complete Cycle IX in all holes and complete Cycle X with further potash seams/horizons in all holes except Banio-4, where the carnallitite seams/horizon at the top of Cycle X are missing. Based on the faults constructed from the seismic sections, Banio-4 seems to be located on a block separated by a NW-SE fault from a block with the other Banio holes.

Presently a total of 19 seams or horizons (combined seams) have been identified in the available drill holes. Eventually further seams might be present in the Cycles VIII, IX and X, but could not be unequivocally identified in the Banio holes, because the geophysical logging data did not allow a reliable estimate about average KCl grade over the thickness of potential seams consisting of an interlayering of rock salt and Carnallite dominated layers. The different seams/horizons are summarized in Table 30.

Only the drill holes Ba-002 and Ba-003 have adequate information about thickness and grade (assays) of the potash seams/horizons required for a Mineral Resource Estimate. Mineral Resources in the categories Indicated and Inferred have been estimated for the area surrounding these drill holes using the ROI methodology. Because Carnallite is considered the primary potash mineral in the deposit and Sylvite a secondary reaction product of Carnallite with circulating brines and therefore less regular in distribution, different ROI's for the Carnallite and Sylvite mineralisation have been used.

For the Carnallite Mineralisation,

- Indicated resources occur in a radius of 1000 m for a seam with known thickness and grade of the drill holes. This ROI is not extended beyond the faults interpreted from the seismic sections,
- Inferred resources occur in a radius of 2000 m of an eligible drill hole, minus any indicated resources in this area. This ROI is extended beyond the faults interpreted from the seismic sections, if the extension is on the downthrown block.

For the Sylvite Mineralisation,

- Indicated resources occur in a radius of 500 m for a seam with known thickness and grade of the drill holes. This ROI is not extended beyond the faults interpreted from the seismic sections,
- Inferred resources occur in a radius of 1000 m of an eligible drill hole, minus any indicated resources in this area. This ROI is not extended beyond the faults interpreted from the seismic sections.

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Table 30 Identified Mineable Potash Seams and Sections with potential further mineable Seams with thickness range and approximate grade for the drill holes Banio-1 to Banio-5, Ba-002 (BATC-1) and Ba-003

Cycle/seam	**Thickness and estimated Grade**	**Present in Drill Holes**
Cycle X		
Seam 7	23–27 m, ~ 18 % KCl	Banio-1 to -3
Seam 2-6	at > 12.5 % KCl no thickness estimate	Banio-1 to -3
Cycle IX		
Seam 8-10	at > 12.5 % KCl no thickness estimate	Banio-1 to -4
Seam 6-7	8-16 m , but no grade estimate possible	Banio-1 to -4
Seam 3	6-14 m, ~ 22 % KCl	Banio-1 to -4
Cycle VIII		
Seam 8	3-8 m, > 14 % KCl	Banio-1 to -4
Seam 4	5-15 m, > 15 % KCl	Banio-1 to -4 as Carnallite Ba-002 and -003 as Sylvite
Seam 3	4-10 m, ~ 17 % KCl	Banio-1 to -4 and Ba-003 as Carnallite Ba-002 as Sylvite
Seam 2	4-11 m, ~ 14.5 % KCl	Banio-1 to -4 and Ba-003 as Carnallite Ba-002 as Sylvite
Cycle VII		
Seam 8 to 12	several seams at > 1.25 m and 12.5 % KCl	Banio-1 to -5, Ba-002 and -003
Seam 6-7	2-6 m, ~14 % KCl	Banio-1 to -5, Ba-002 and -003
Seam 5	2.5-4 m, ~ 16 % KCl	Banio-1 to -5, Ba-002 and -003
Seam 3-4	5-9 m, ~ 14.5 % KCl	Banio-1 to -5, Ba-002 and -003
Seam 1-2	7-11 m, ~ 16.5 % KCl	Banio-1 to -5, Ba-002 and -003
Cycle VI		
Seam 6-11	12-24 m, outlier 61 m, ~ 15 % KCl	Banio-1 to -5, Ba-002 and -003
Seam 2-5	14-33 m, ~ 16 % KCl	Banio-1 to -5, Ba-002 and -003
Cycle V		
Seam 5-9	5-21 m, ~ 14 % KCl	Banio-1 to -5, Ba-002 and -003
Seam 3	1-3 m, ~ 20 % KCl	Banio-1 to -5, Ba-002 and -003
Seam 2	1-4 m, ~ 17 % KCl	Banio-1 to -5, Ba-002 and -003
Cycle IV		
Seam 1	2–14 m, ~ 17 % KCl	Banio-1, -2, -4 and -5, Ba-002
Cycle III		
Seam 1	1-6 m, ~ 18 % KCl	Banio-1, -4 and -5, Ba-002
Cycle II		
Seam 1	2-24m, ~ 17 % KCl	Banio-1 to -5

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The estimated Indicated Mineral Resources over each Cycle have been summarized in Table 31. The Indicated Mineral Resources for the Carnallite mineralisation amounts to 636.5 million tonnes of mineralized material at an average grade of 15.8 % KCl (58.7 % Carnallite). The Total Indicated Mineral Resources for the Sylvite Mineralisation are estimated at 20.1 million tonnes of mineralized material at an average grade of 21.6 % KCl (Sylvite).

The estimated Inferred Mineral Resources for each Cycle have been summarized in Table 32. The Inferred Mineral Resources for the Carnallite mineralisation amounts to 1,115.3 million tonnes of mineralized material at an average grade of 15.8 % KCl (58.8 % Carnallite). The Total Inferred Mineral Resources for the Sylvite Mineralisation are estimated at 43.8 million tonnes of mineralized material at an average KCl grade of 21.1 % KCl (Sylvite).

Table 31 Summary of the estimated Indicated Mineral Resources. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite[1]

Hole	Min.	Summed Thickness	Average Density	Summed Tonnage	Average Grade	Total KCl
		(m)	(t/m³)	(million t)	(% KCl)	(million t)
Ba-002	Sy	4.8	2.120	7.73	24.9	1.93
Ba-002	Ct	72.8	1.799	279.69	15.3	42.86
Ba-003	Sy	7.5	2.130	12.38	19.5	2.41
Ba-003	Ct	70.1	1.793	356.84	16.1	57.36
Total	Sy			20.12	21.6	4.34
Total	Ct			636.53	15.8	100.23

Table 32 Summary of the estimated Inferred Mineral Resources. Min. = Mineralisation, Sy = Sylvite, Ct = Carnallite[1]

Hole	Min.	Summed Thickness	Average Density	Summed Tonnage	Average Grade	Total KCl
		(m)	(t/m³)	(million t)	(% KCl)	(million t)
Ba-002	Sy	4.8	2.120	13.94	24.9	3.47
Ba-002	Ct	72.8	1.797	531.95	15.5	82.17
Ba-003	Sy	7.5	2.130	29.85	19.5	5.81
Ba-003	Ct	70.1	1.793	583.40	16.1	93.87
Total	Sy			43.79	21.2	9.28
Total	Ct			1115.35	15.8	176.04

It is the opinion of the author that the Mayumba Permit is a property of merit and warrants additional exploration and further studies.

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26 Recommendations

MLP is executing the exploration program over the Mayumba Permit using a targeted and phased approach, which is, in the opinion of the author, the accepted method for exploring for basin type potash deposits. In the first phase of the exploration work MLP will test the concept for the presence of the mineralisation outlined in the section 25. The exploration program is split into Phase 1 NW, focused on the location of the Ba drill holes, and Phase 1 SW, focused around the location of the Banio drill holes. Results from the Phase 1 NW and Phase 1 SW programs will then be reviewed to enable planning of Phase 2 of the exploration program and selection of the optimal area for more detailed exploration.

The Phase 1 NW exploration program aims to carry out further exploration drilling within the NW (Ba Block) to identify:

- The carnallite content of the cycles II to VII in existing drill hole Ba-001 by extending drilling depth by 350m;
- The extension of the potash mineralisation towards the SE by drilling of a new hole (Ba-004) at E 731685, N 9585314 with a depth of about 700 m (top of salt at top of cycle IX).

The location of the drill holes for phase 1 NW is shown in Figure 22. In parallel to the phase 1 NW exploration, it is recommended to develop a preliminary economic assessment for a solution mining and brine processing operation on the outlined Mineral Resources to confirm that the mineralized material can be economically mined and to better define minimum thickness and grade criteria for definition of mineable potash seams. It is estimated that the phase 1 NW exploration with ~ 1,050 m of drilling and the PEA will take about 3 months and will cost in the range of 1.9 million USD$ including camp support and logistics.

The Phase 1 SW exploration program aims to:

- Confirm the thickness and grade of the potash seams in the cycles II to X around the area of the Banio drill holes. For a Mineral Resource estimate additional drilling at 3 localities in the SW fault block is required. To minimize disturbance of the primary forest the drill hole locations are proposed along existing tracks and forest clearings at the following sites.
  - Ba-005 located near Kala Boubote E 736387 N 9579597 with a depth of about 900 m (top of salt in cycle IX);
  - Ba-006 located within an existing clearing E 736495 N 9574966 with a depth of about 1,000 m (top of salt in lower part cycle X);
  - Ba-007 located near hydrocarbon drill hole Banio-2 on an existing clearing E 733885 N9574184 with a depth of about 1,100 m (top salt near top of cycle X).

The location of the proposed phase 1 SW drill holes is shown in Figure 22. Phase 1 SW drilling requires a fly camp or relocation of the main camp. It is estimated that the phase 1 SW exploration with ~3,000 m of drilling will take about 4 months and will cost in the range of 4.5 million USD including camp support and logistics.

Conditional upon a favourable outcome of phase 1, phase 2 can be initiated which consists of drilling 5 to 6 exploration drill hole in the NW-block between the town of Mayumba and the Ba drill holes (present main camp location) either on the headland between lagoon and Atlantic Ocean or on the east side of the lagoon. Results of phase 2 will assist in defining the best location for project development taking into account thickness and grade, as well

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as accessibility of the deposit, and the best conditions for the development of a potash mining and processing operation, taking into account the presence of the nature reserve areas. It is estimated that this phase 2 will cost about 8 million USD$ and take another 10 months. With the results of phase 1 and phase 2 the best option for further exploration to define a Mineral Resource base with Measured and Indicated Mineral Resources can be selected for phase 3 exploration.

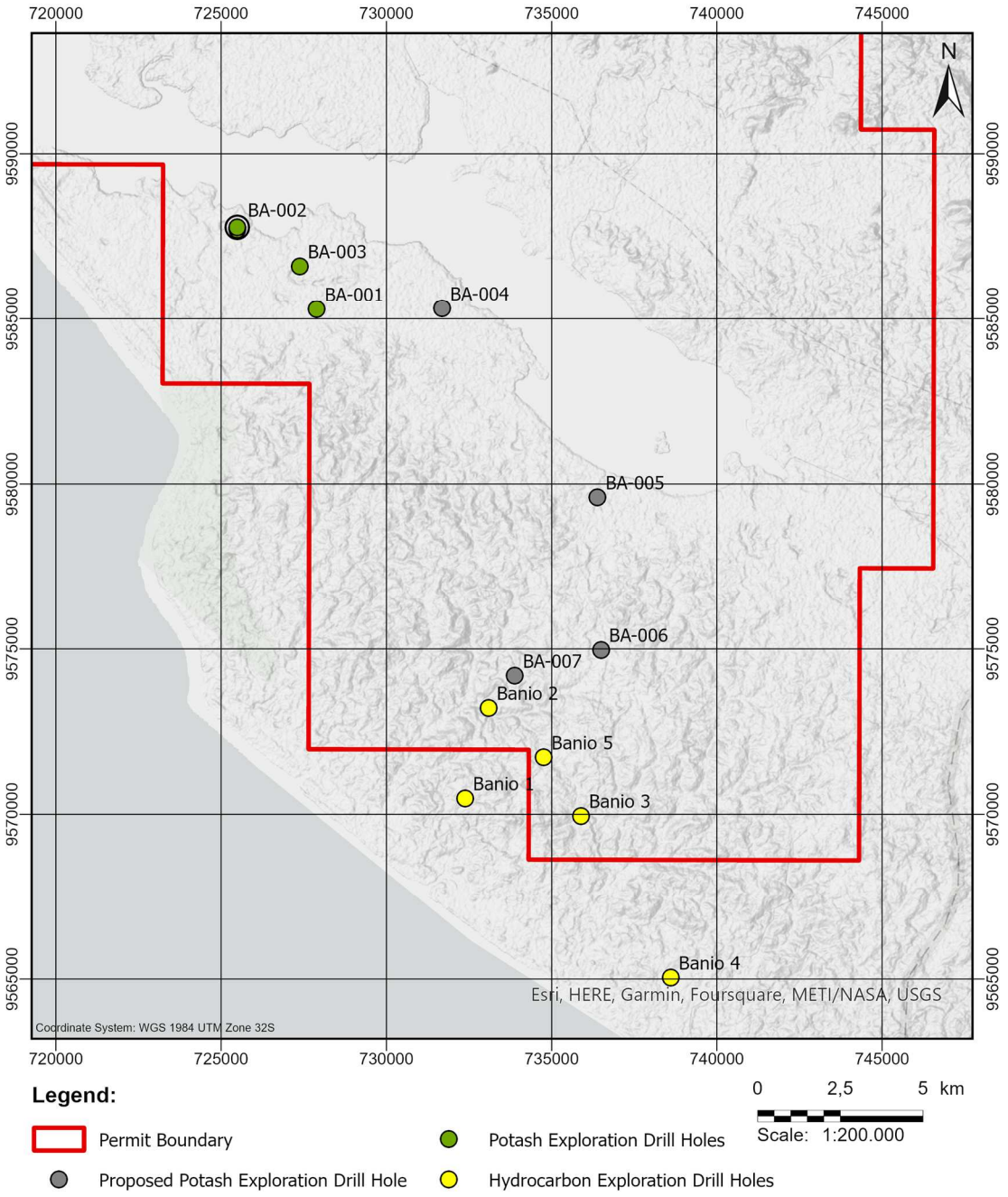


Figure 22 Location of Proposed Holes for Phase-1 NW and Phase-SE Drilling Exploration as well as Historical Hydrocarbon and Potash Exploration Holes

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Certificate

I, EuroGeol, Dr. Sebastiaan van der Klauw as author or this Technical Report titled "Technical Report Initial Mineral Resource Estimate for the North Target of the Banio Potash Project, Mayumba Permit, Republic of Gabon", with the effective date November 7, 2023 do hereby certify that:

(1) I am a consulting geologist of ERCOSPLAN Ingenieurgesellschaft Geotechnik und Bergbau mbH, with an office located in Arnstaedter Strasse 28, 99096 Erfurt, Germany.

(2) I am a professional geologist and have been practicing in this capacity since July 1992.

I have been with the mining industry since 1996. As a professional geologist, I have been involved with in potash and salt exploration and potash mining geology since 1996, firstly in Germany and later in Russia, Brazil, Canada, Republic of Congo, Saudi Arabia, Ethiopia and Thailand.

I am a graduate of the Rijksuniversiteit Utrecht and earned a Master's Degree in Geology in 1990 and a PhD at the Ruhr-Universität Bochum (Ruhr University Bochum) in 1999.

I am a member of the KNGMG Royal Dutch Geologic and Mining Society.

I am a member in good standing of the European Federation of Geologists and am a registered "European Geologist" (Registration Number 756).

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101.

(3) I undertook site visits of the permit lands/properties on October 16, 2022

(4) I am responsible for all sections of the Report.

(5) I am independent of the Issuer in accordance with Section 1.5 of National Instrument 43-101.

(6) I have in 2022 prepared an initial review of the potash potential of the property.

(7) I have read National Instrument 43-101 and Form 43-101 F1, and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101 F1.

As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading

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Signature Page of Qualified Person

Author of the Technical Report titled “Technical Report Initial Mineral Resource Estimate for the North Target of the Banio Potash Project, Mayumba Permit, Republic of Gabon” with the effective date November 07, 2023

Erfurt, 20 February 2024



EurGeol Dr. Sebastiaan van der Klauw

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GLOSSARY

Term	Explanation
Anhydrite	an anhydrous calcium sulphate mineral with the chemical formula $CaSO_4$ as an exception to the geological naming convention that a rock is named after one of its main minerals with –ite behind the mineral name, also a rock consisting mainly of the mineral Anhydrite
assay	a chemical analysis to quantify the amounts of specific elements
Bischofite	A hydrous magnesium chloride mineral with the chemical formula $MgCl_2 (H_2O)_6$
Carnallite	a hydrous potassium and magnesium chloride bearing salt mineral with the chemical formula $KMgCl_3 (H_2O)_6$
carnallitite	a salt rock consisting of Carnallite and Halite as main minerals with subordinate amounts of other minerals
CIM Definition Standards and Guidelines	a series of definition and regulatory standards for mineral resources, mineral reserves and mineral projects as well as best practice guidelines for exploration, mineral processing, and the estimation of mineral resources and mineral reserves
FOB	“free on board” an incoterm abbreviation, which means that the price of the product includes loading the product on a sea-going vessel
Halite	an anhydrous sodium chloride mineral with the chemical formula NaCl
Kainite	a hydrous potassium chloride and magnesium sulphate mineral with the chemical formula $K_4Mg_4Cl_4(SO_4)_4 (H_2O)_{11}$
Kieserite	a hydrous magnesium sulphate mineral with the chemical formula $MgSO_4 (H_2O)$
Mineral Resource	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 (as judged by a Qualified Person). 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.
NI 43-101	national instrument for the Standards of Disclosure for Mineral Projects within Canada, which is a codified set of rules and guidelines for reporting and displaying information related to mineral properties owned by, or explored by, companies which report these results on stock exchanges within Canada.
Qualified Person	A qualified person: • is an engineer or geoscientist with at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these;

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	• has experience relevant to the subject matter of the mineral project and the technical report; and • is in good standing with a professional association
rock salt	as an exception to the geological naming convention that a rock is named after one of its main minerals with –ite behind the mineral name, a rock consisting mainly of Halite with subordinate amounts of other minerals
Sylvite	An anhydrous potassium chloride mineral with the chemical formula KCl
sylvinite	a salt rock consisting of Sylvite and Halite as main minerals with subordinate amounts of other minerals, in case these minerals consist of sulphate minerals like Anhydrite, Kieserite or Polyhalite the rock is called “hard salt”
Tachyhydrite	a hydrous calcium and magnesium chloride mineral with the chemical formula $CaMg_2Cl_6\ (H_2O)_{12}$
tachyhydritite	a salt rock consisting of Tachyhydrite as main mineral with subordinate amounts of other salt minerals

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LIST OF ABBREVIATIONS

Abbreviations of physical units/constants used throughout this study are as follows:

2D	2 dimensional
3D	3 dimensional
Ca	calcium
$CaCl_2$	calcium chloride
Cl	chloride
cm	centimetre
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
dm	decimetre
E	east
e.g.	example given
EFG	European Federation of Geologists
EIA	Environmental Impact Assessments
EOH	end of hole
FS	feasibility study
g	gram
g/cm³	gram per cubic centimetre
g/l	gram per litre
GR	natural gamma ray
H_2O	water
ICP-MS	inductively coupled plasma - mass spectrometry
Inc	incorporated
K	potassium
KCl	potassium chloride
kg	kilogram
km	kilometre
km²	square kilometre
K_2O	di-potassium oxide
l/h	litre per hour
m	metre
m.b.s.l.	metre below sea level
m²	square metre
max	maximum
MDPA	Mines de Potasse d'Alsace

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Mg	magnesium
$MgCl_2$	magnesium chloride
min	minimum
mm	millimetre
MOP	muriate of potash (KCl)
MW	mega watt
Na	sodium
NaCl	sodium chloride
NE	northeast
NI 43-101	National Instrument 43-101
NW	northwest
PFS	pre-feasibility study
QC	quality control
QP	qualified person
RN-5	National Road 5
ROC	Republic of Congo (Congo, Brazzaville)
ROG	Republic of Gabon
S	south or sulphur
SE	southeast
SO_4	sulphate
SW	southwest
USD	United States Dollar
UTM	Universal Transverse Mercator
W	west
WGS	World Geodetic System
WNW	west northwest
WSW	west southwest
XRD	X-ray powder diffraction
%	percent
°C	degree Celcius
°	degree
‘	minutes
“	seconds or inches

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APPENDIX 01

Legal Support Information

MINISTERE DU PETROLE, DU GAZ ET DES MINES

SECRETARIAT GENERAL

DIRECTION GENERALE DES MINES ET DE LA GEOLOGIE

DIRECTION DE LA LEGISLATION MINIERE
ET DES ETUDES DE MARCHES

REPUBLIQUE GABONAISE
Union – Travail - Justice

Visa CJ-MPGM

Arrêté n°____0006____/MPGM/SG/DGMG/DLMEM
Portant premier renouvellement du permis de recherche minière pour la potasse et sels connexes n°**G5-595** dénommé **« Potasse et sels connexes Mayumba »** au bénéfice de la société **MAYUMBA POTASSE SARL**

LE MINISTRE DU PETROLE, DU GAZ ET DES MINES

Vu la Constitution ;

Vu la loi n°037/2018 du 11 juin 2019 portant réglementation du secteur minier en République Gabonaise ;

Vu le décret n°022/PR/MPGHM du 02 mars 2020 portant création, attributions et organisation de la Direction Générale des Mines et de la Géologie ;

Vu le décret n°227/PR du 16 juillet 2020 portant nomination du Premier Ministre, Chef du Gouvernement de la République ;

Vu le décret n°228/PR/PM du 17 juillet 2020 fixant la composition du Gouvernement de la République, ensemble les textes modificatifs subséquents ;

Vu le décret n°023/PR/MPGM du 22 janvier 2021 fixant les règles relatives à la contribution de l'activité minière au développement local en République Gabonaise ;

Vu l'arrêté n°161/MMI/SG/DGPEM/DCMAE du 23 février 2016 portant attribution du permis de recherche minière n°G5-595 dénommé « Potasse et sels connexes Mayumba » au bénéfice de la société MAYUMBA POTASSE SARL ;

Vu la demande de renouvellement du permis formulée en date du 2 juin 2021 par la société MAYUMBA POTASSE SARL ;

Sur rapport du Directeur Général des Mines et de la Géologie ;

ARRETE

Article 1er : Le présent arrêté, pris en application des dispositions de la loi n°037/2018 du 11 juin 2019 portant réglementation du secteur minier en République Gabonaise, porte premier renouvellement du permis de recherche minière, au bénéfice de la société **MAYUMBA POTASSE SARL** valable pour la **Potasse et sels connexes**.

Ledit permis de recherche minière dénommé **« Potasse et sels connexes Mayumba »** porte le numéro **G5-595** et se situe dans la Province de la Nyanga.

Article 2 : Le permis de recherche minière numéro **G5-595** dénommé **« Potasse et sels connexes Mayumba »** est renouvelé pour une période de trois ans à compter de la date de signature du présent arrêté. Il peut, à la demande du titulaire, faire l'objet d'un dernier renouvellement pour la même durée.

Article 3 : Le périmètre couvert par le permis de recherche minière numéro **G5-595** dénommé **« Potasse et sels connexes Mayumba »** est délimité par les points **A, B, C, D, E, F, G, H, I, J, K, L,**

Points	X	Y	Points	X	Y	Points	X	Y
A	10,65	-3,35	M	11,2	-3,7	Y	10,97	-3,65
B	10,76	-3,35	N	11,22	-3,7	Z	10,92	-3,65
C	10,76	-3,43	O	11,22	-3,82	AA	10,92	-3,59
D	10,84	-3,43	P	11,2	-3,82	AB	10,87	-3,59
E	10,84	-3,46	Q	11,2	-3,9	AC	10,87	-3,56
F	10,93	-3,46	R	11,11	-3,9	AD	10,81	-3,56
G	10,93	-3,49	S	11,11	-3,87	AE	10,81	-3,52
H	11	-3,49	T	11,05	-3,87	AF	10,75	-3,52
I	11	-3,56	U	11,05	-3,77	AG	10,75	-3,47
J	11,08	-3,56	V	11,01	-3,77	AH	10,69	-3,47
K	11,08	-3,61	W	11,01	-3,71	AI	10,69	-3,44
L	11,2	-3,61	X	10,97	-3,71	AJ	10,65	-3,44

La superficie de la zone ainsi délimitée est égale à **1238 Km²**. Le plan de situation y relatif est joint en annexe du présent arrêté.

Article 4 : La société **MAYUMBA POTASSE SARL** est tenue de fournir à la Direction Générale des Mines et de la Géologie les rapports trimestriels et annuels relatifs à l'activité déployée sur le périmètre objet dudit permis de recherche minière.

Article 5 : Conformément à la réglementation minière en vigueur, le permis de recherche minière numéro **G5-595** dénommé **« Potasse et sels connexes Mayumba »** confère à la société **MAYUMBA POTASSE SARL** dans les limites de son périmètre et indéfiniment en profondeur, le droit exclusif de recherche de potasse et sels connexes.

Article 6 : La société **MAYUMBA POTASSE SARL** est tenue de dépenser, sur la période globale de trois ans de validité du permis de recherche minière numéro **G5-595** dénommé **« Potasse et sels connexes Mayumba »**, la somme de un milliard cent cinquante millions de francs CFA prévue pour la réalisation de son programme de travail.

En cas de non-respect des engagements des dépenses prévues dans l'alinéa ci-dessus, la société **MAYUMBA POTASSE SARL** s'expose à une pénalité de 10% du montant des investissements non réalisés.

Article 7 : A l'expiration de la période de validité du permis de recherche minière numéro **G5-595** dénommé **« Potasse et sels connexes Mayumba »**, la société **MAYUMBA POTASSE SARL** s'engage à fournir à la Direction Générale des Mines et de la Géologie outre le rapport détaillé de fin des travaux, les résultats du traitement des échantillons, une esquisse géologique de la zone couverte par le permis de recherche ainsi que la notice explicative de celle-ci.

Article 8 : Conformément aux dispositions de l'article 195 de la loi n°037/2018 du 11 juin 2019 portant réglementation du secteur minier en République Gabonaise, la société **MAYUMBA POTASSE SARL** est assujettie au paiement d'un droit fixe de renouvellement.

Le montant de ce droit fixe s'élève à deux millions cinq cent mille francs CFA.

Article 9 : La suspension, le retrait, le non renouvellement ou la réduction d'office de superficie du permis de recherche minière numéro **G5-595** dénommé **« Potasse et sels connexes Mayumba »** peut être décidé, sans préjudice des condamnations qui pourraient être prononcées par les tribunaux compétents, pour l'un des motifs suivants :

- Non-respect des obligations liées au programme des travaux et des dépenses ;
- non-versement des droits et taxes prévus par le régime fiscal en vigueur ;
- non-respect de la législation minière en vigueur notamment les obligations relatives à la

MINISTERE DU PETROLE, DU GAZ ET DES MINES

SECRETARIAT GENERAL

DIRECTION GENERALE DES MINES ET DE LA GEOLOGIE

DIRECTION DE LA GEOLOGIE ET DE LA RECHERCHE MINIERE

SERVICE CADASTRE MINIER

N°_____MPGM/SG/DGMG/DGRM/SCM

Plan de situation du Permis de Recherche Minière pour la potasse et sels connexes de la société MAYUMBA-POTASSE dans la Province de la Nyanga.

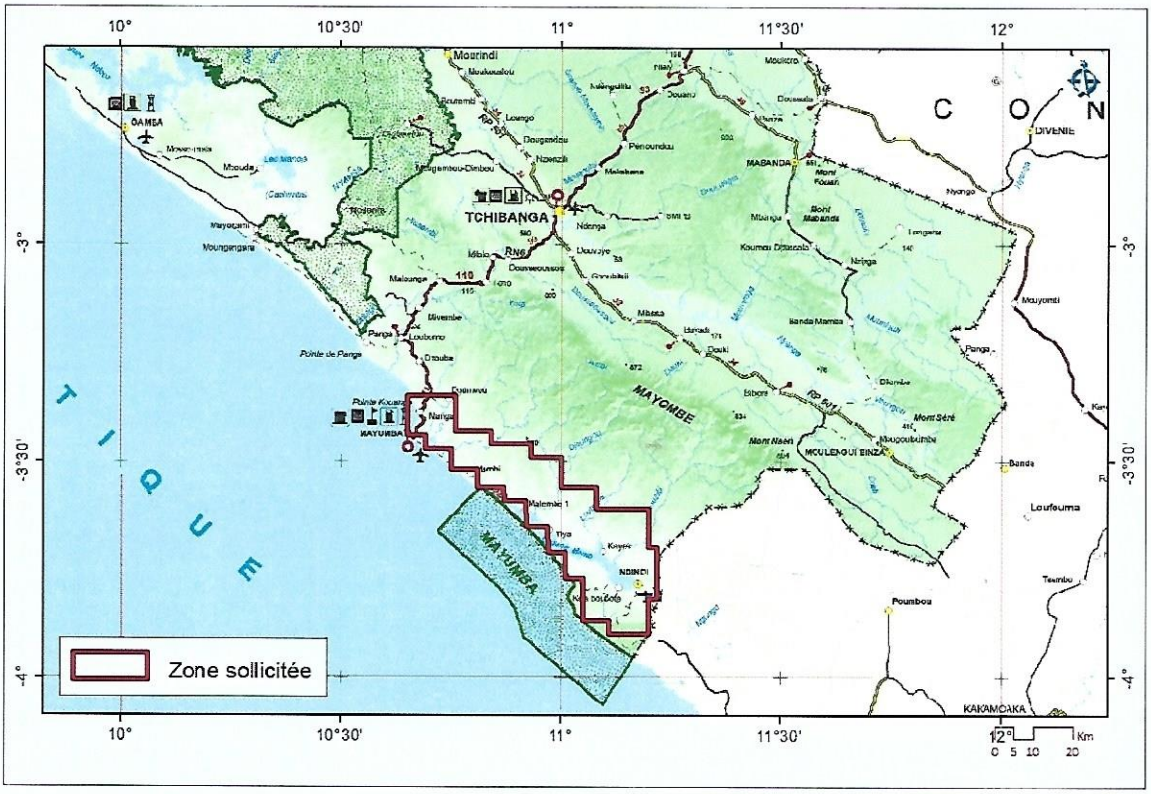


Tableau des coordonnées des sommets du polygone en degrés décimaux, Datum-WGS84

Pts	LONG X (DD)	LAT Y (DD)	Pts	LONG X (DD)	LAT Y (DD)	Pts	LONG X (DD)	LAT Y (DD)	Pts	LONG X (DD)	LAT Y (DD)
A	10,65	-3,35	J	11,08	-3,56	S	11,11	-3,87	AB	10,87	-3,59
B	10,76	-3,35	K	11,08	-3,61	T	11,05	-3,87	AC	10,87	-3,56
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H	11	-3,49	Q	11,2	-3,9	Z	10,92	-3,65	AI	10,69	-3,44
I	11	-3,56	R	11,11	-3,9	AA	10,92	-3,59	AJ	10,65	-3,44

Superficie : ***1238 km²***

Le Directeur Général des Mines et de la Géologie

Didier Robert BEVANDINE

- refus et omission de se conformer aux injonctions adressées par l'Administration des Mines en vue de la poursuite des travaux de recherche avec diligence et selon les règles en usage dans l'industrie minière internationale ;
- arrêt des travaux pendant un an.

Article 10 : Le présent arrêté est frappé de nullité si, après contrôle des services compétents, il est établi un vice de nature à affecter l'intégrité du consentement de l'Etat au moment de l'instruction de la demande relative au présent permis.

Article 11 : Une copie du présent arrêté doit être tenue au siège de la société à la disposition des autorités chargées d'en contrôler l'exécution. Un extrait de cet arrêté sera affiché en permanence et de façon visible dans les dépendances du périmètre de recherche.

Article 12 : Le Directeur Général des Mines et de la Géologie est chargé de l'exécution du présent arrêté, qui sera enregistré, publié au Journal Officiel de la République Gabonaise et communiqué partout où besoin sera.

Fait à Libreville, le 04 FEV. 2022

Le Ministre du Pétrole, du Gaz et des Mines

MINISTERE DU PETROLE, DU GAZ ET DES MINES
REPUBLIQUE GABONAISE
UNION TRAVAIL - JUSTICE
LE MINISTRE

Vincent de Paul MASSASSA

Ampliations :

Présidence	3
JO	3
MPGM	3
DGMG	3
Impôts	3
Gouverneur de la Nyanga	3
Intéressé	4/22

APPENDIX 02

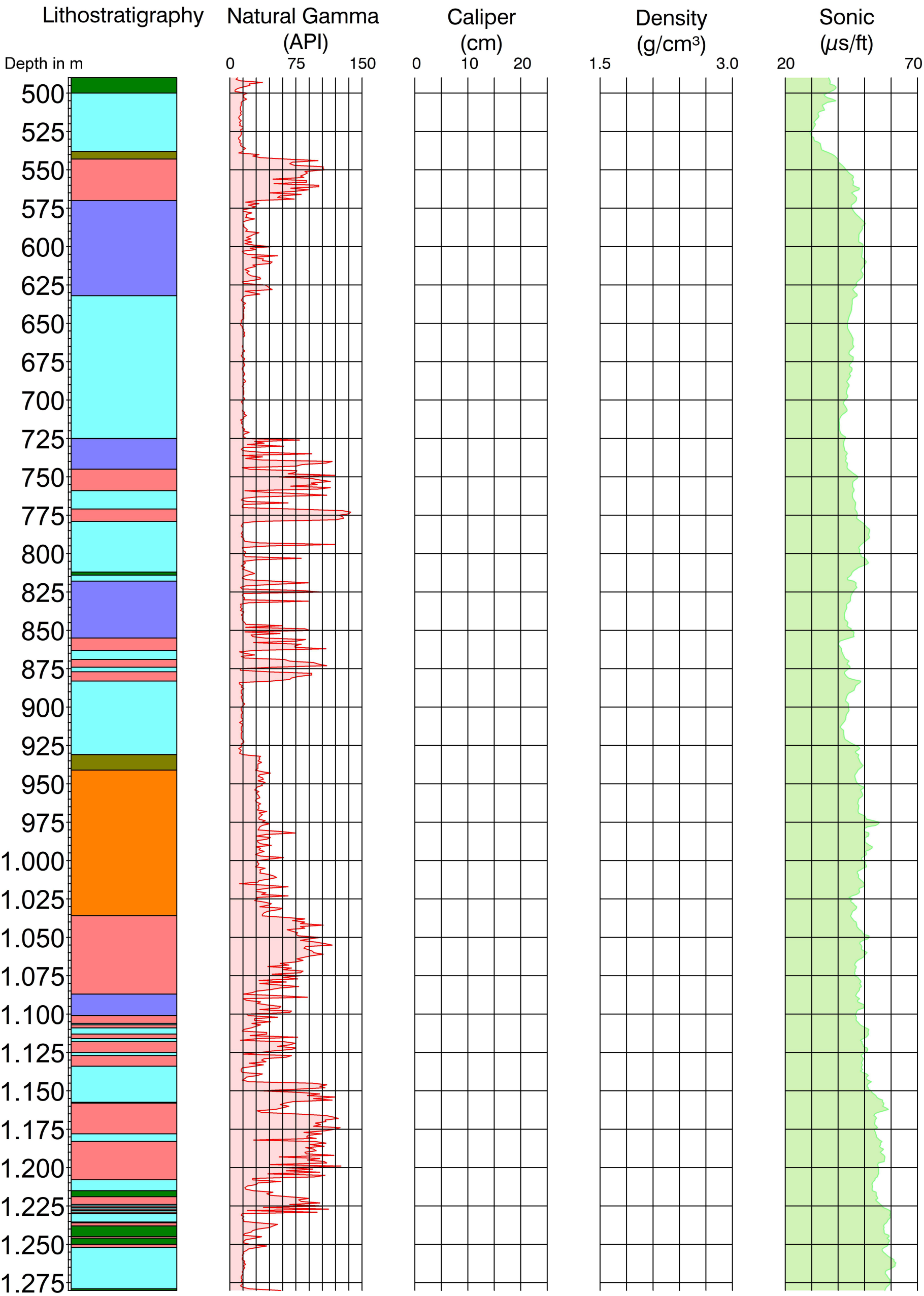
Geophysical Logs and Lithostratigraphic Interpretation of the Drill Holes Banio-01, Banio-02, Banio-03, Banio-04 and Banio-05

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Rock salt

Carnallite dominated rock

Tachyhydrite dominated rock

Clay and Anhydrite dominated rock

Interlayering of rock salt and Carnallite dominated rock

Tachyhydrite and Carnallite dominated rock

Banio Potash Project

Appendix 2 - 1
Available Geophysical Logs and Lithostratigraphic Interpretation of Drill Hole Banio-01

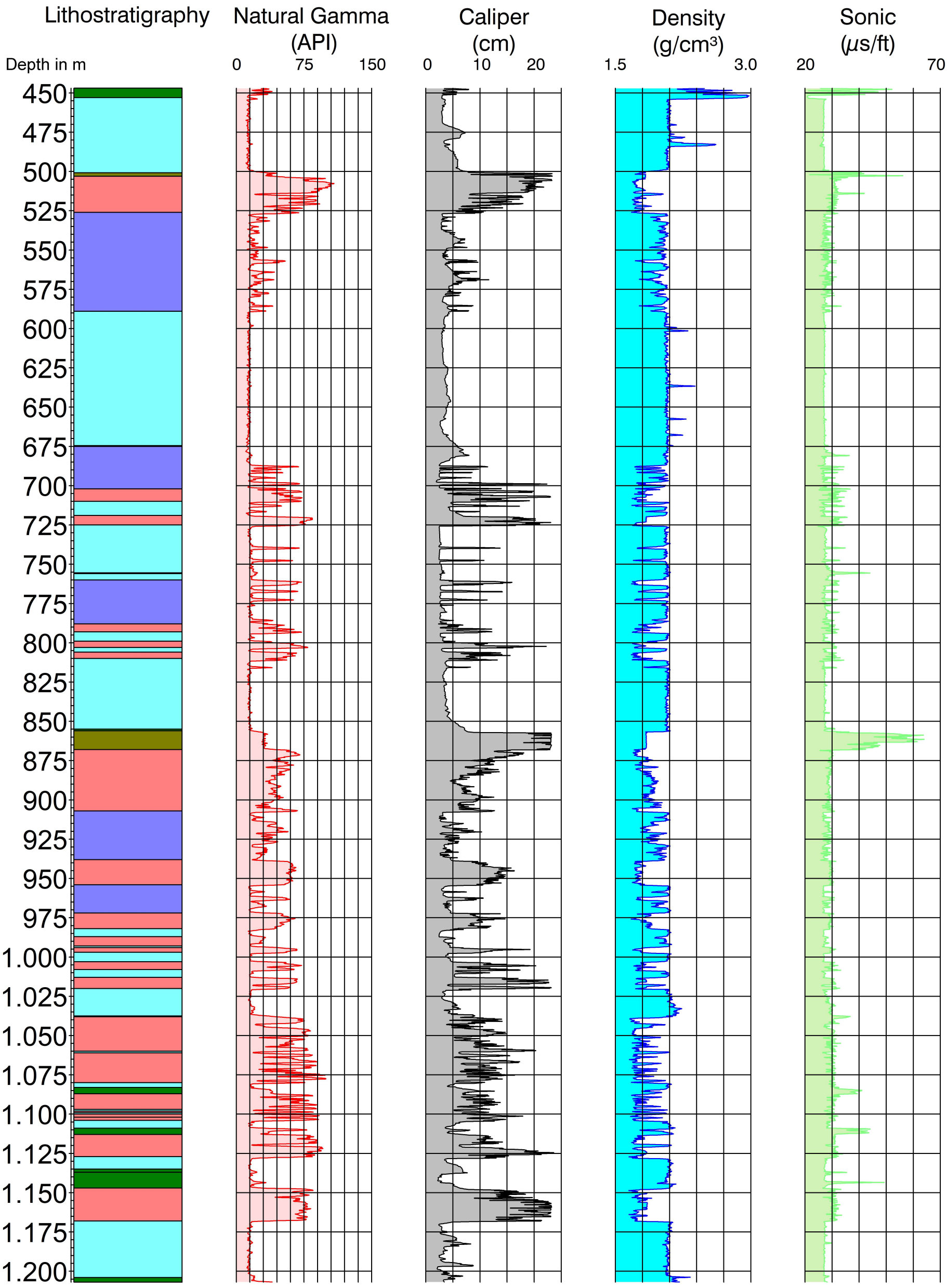
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- Rock salt
- Carnallite dominated rock
- Tachyhydrite dominated rock
- Clay and Anhydrite dominated rock
- Interlayering of rock salt and Carnallite dominated rock
- Tachyhydrite and Carnallite dominated rock

Banio Potash Project

Appendix 2 - 2
Available Geophysical Logs and Lithostratigraphic Interpretation of Drill Hole Banio-02

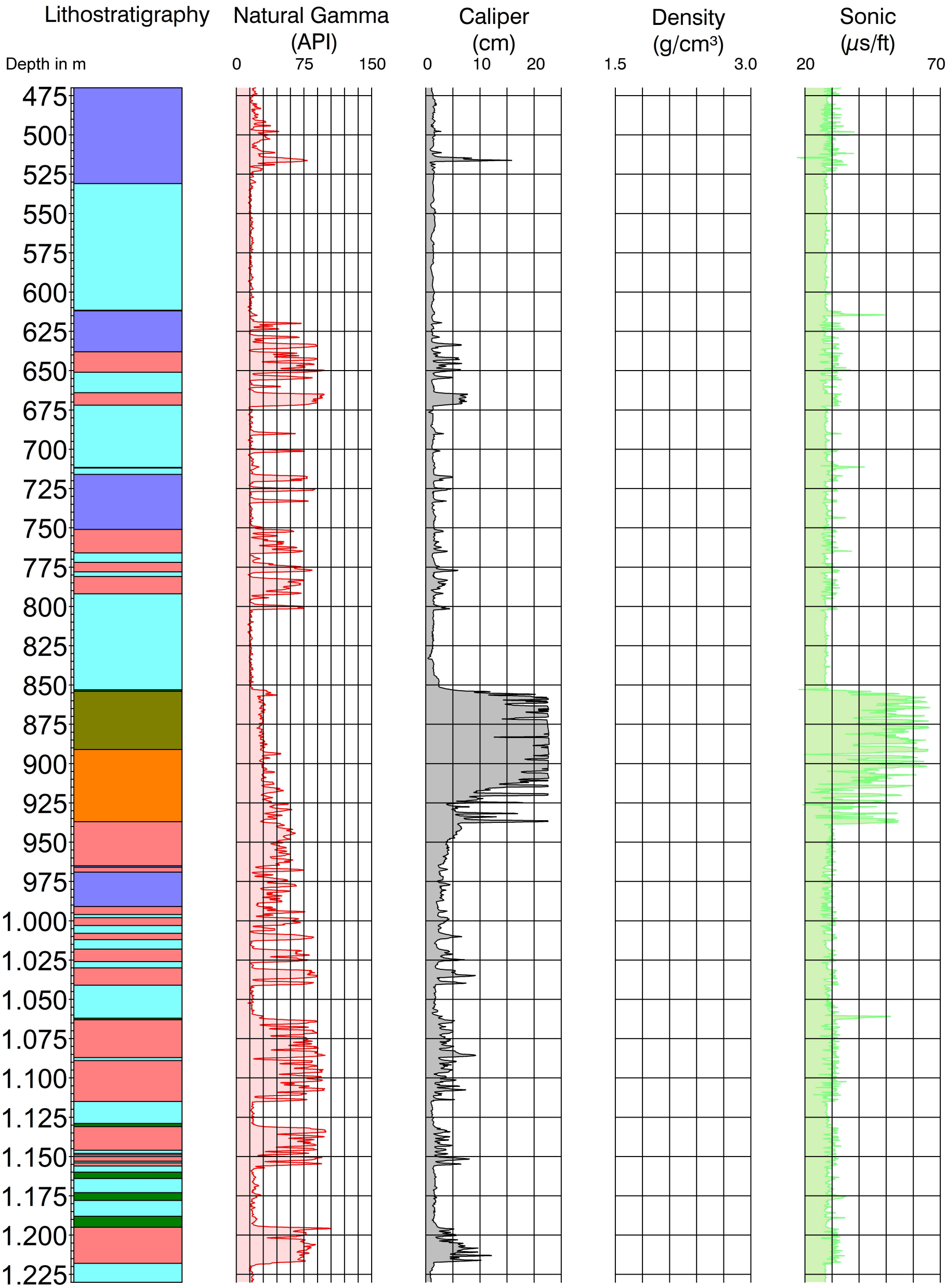
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Rock salt

Carnallite dominated rock

Tachyhydrite dominated rock

Clay and Anhydrite dominated rock

Interlayering of rock salt and Carnallite dominated rock

Tachyhydrite and Carnallite dominated rock

Banio Potash Project

Appendix 2 - 3
Available Geophysical Logs and Lithostratigraphic Interpretation of Drill Hole Banio-03

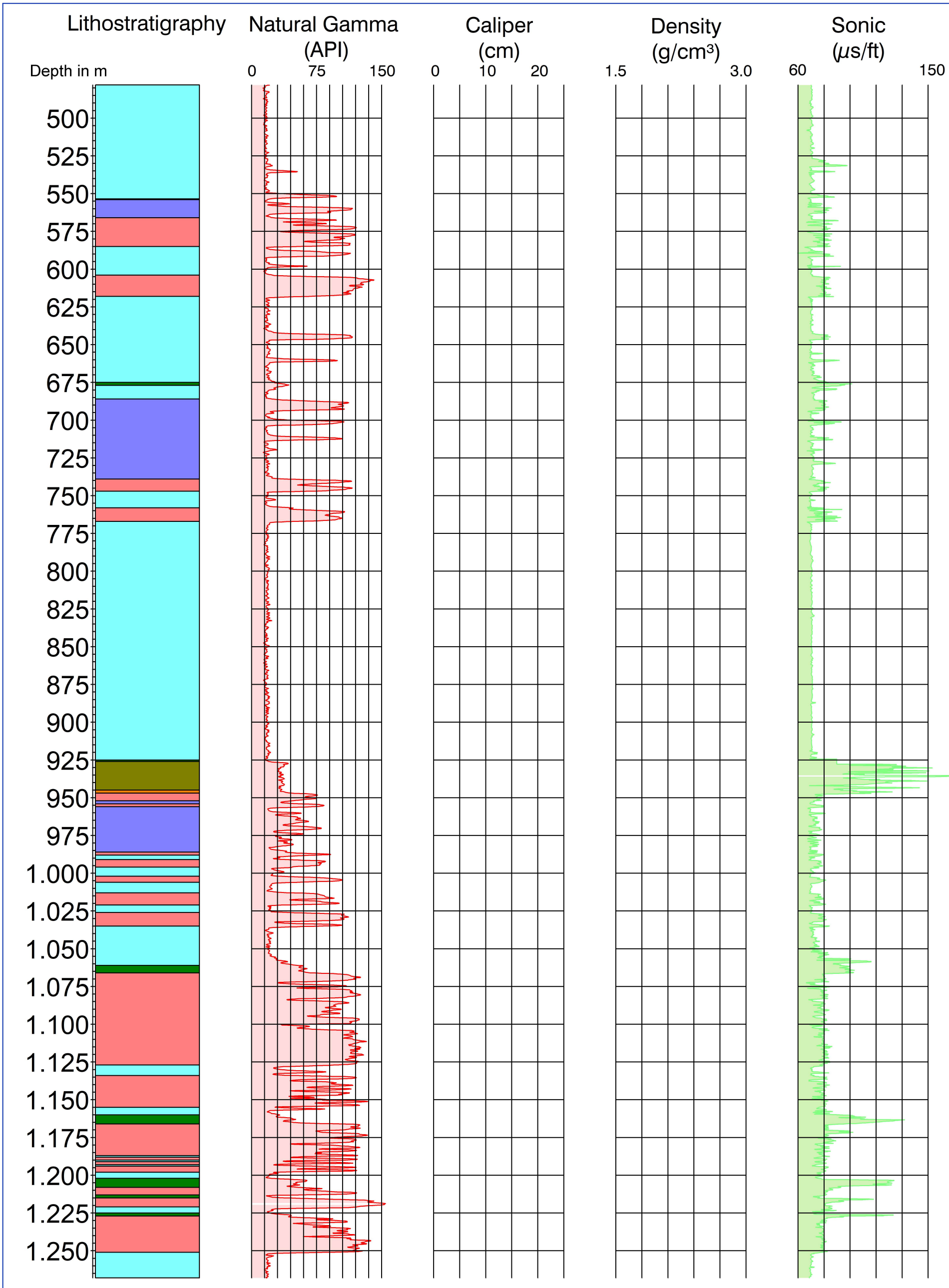
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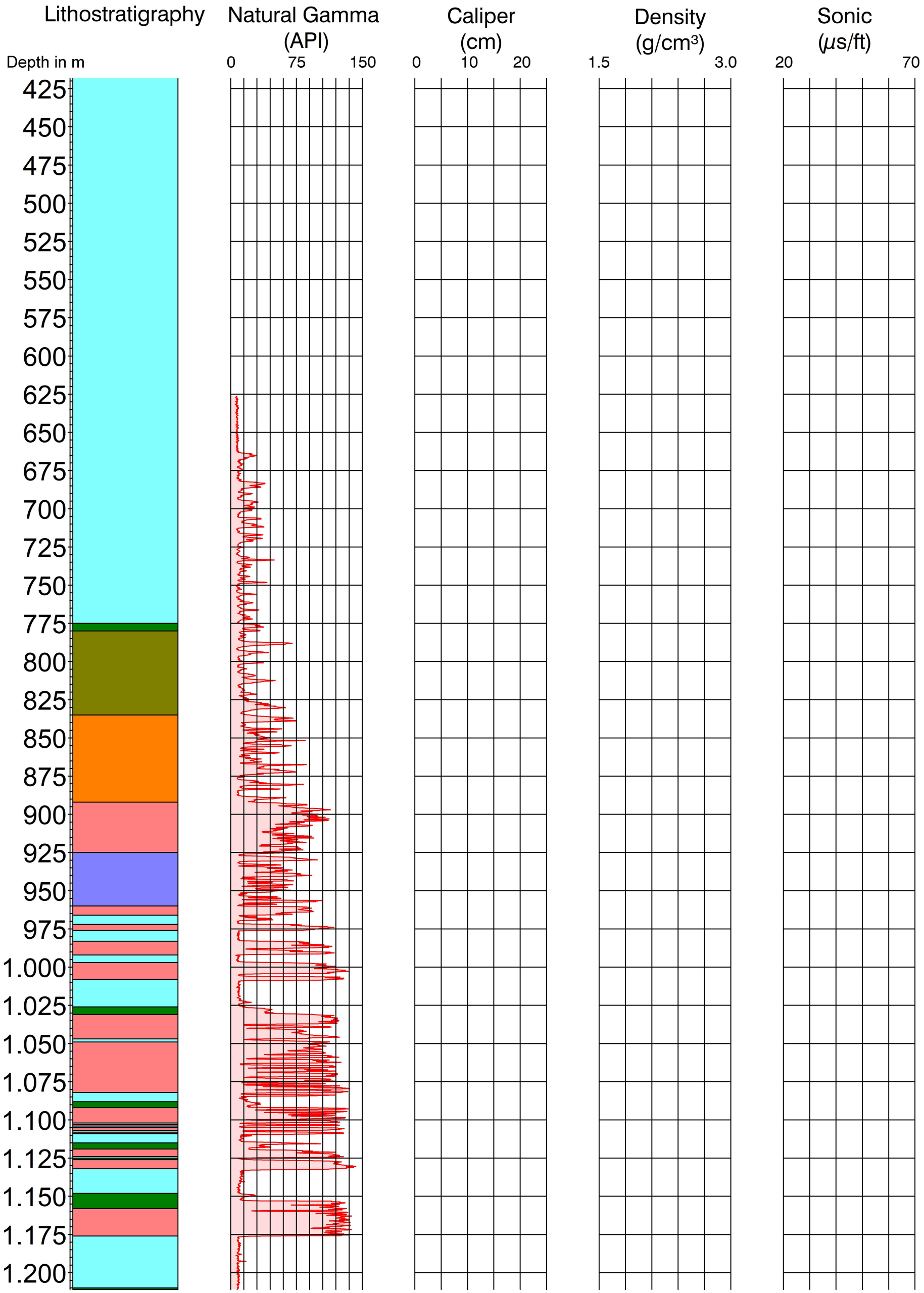
- Rock salt
- Carnallite dominated rock
- Tachyhydrite dominated rock
- Clay and Anhydrite dominated rock
- Interlayering of rock salt and Carnallite dominated rock
- Tachyhydrite and Carnallite dominated rock

Banio Potash Project

Appendix 2 - 4
Available Geophysical Logs and Lithostratigraphic Interpretation of Drill Hole Banio-04

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Rock salt

Carnallite dominated rock

Tachyhydrite dominated rock

Clay and Anhydrite dominated rock

Interlayering of rock salt and Carnallite dominated rock

Tachyhydrite and Carnallite dominated rock

Banio Potash Project

Appendix 2 - 5
Available Geophysical Logs and Lithostratigraphic Interpretation of Drill Hole Banio-05

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