

SOUTH ZONES AREA ASSESSMENT REPORT

NOVA SCOTIA EXPLORATION LICENSE NUMBER 52154

COXHEATH, CAPE BRETON COUNTY

March 2022



Prepared for:

Harry Cabrita Nova Copper Inc. 701-3400 Dutch Village Road Halifax, Nova Scotia B4A 2E6

Author and Qualified Person:

Jesse R. Halle, P.Geo. Halle Geological Services Ltd. 3-1345 Dresden Row Halifax, Nova Scotia B3J 2J9



Table of Contents

Summary	4
Introduction	
Location and Access	
Exploration License Tabulation	
Assessment Work Performed	
Technical Data Compilation	
Prospecting and Sample Collection	
Deposit Modelling	
Pilot Re-log and Infill Assay Program	
Geological Survey	
Geophysical Survey	
Geochemical Survey	
Interpretation of Results	
Conclusions and Recommendations	
Date and Signature Page	
Bibliography	
Appendix I – Climate, Physiography, Local Resources and Infrastructure	
Appendix II – Exploration History	30
Appendix III – Geology and Mineralization	32
Appendix IV – CX-07 Vancouver Petrographics Ltd. Report (September 2021)	34
Appendix V – CR-21-57m Re-Os Age Dating Report (September 2021)	35
Appendix VI – Pilot Re-Log Notes and Logging Codes (October 2021)	36
Appendix VII – Results of Magnetic Susceptibility Survey (October 2021)	37
Table of Illustrations	
Figure 1 – Nova Copper Linked Porphyry-Epithermal System Claim Packages	
Figure 2 – Sydney Copper Project Location and Access	
Figure 3 – EL52154 South Zones Area Claim Reference Map	
Figure 5 – Plan Map of Compiled Geology, Geochronology, Alteration and Structure	
Figure 6 – Plan Map of Compiled Geochemical and Geophysical Anomalies	

SOUTH ZONES AREA ASSESSMENT REPORT – MARCH 2022



Figure 7 – Mineralized Sheeted Veins Collected for Petrographic Analysis (Sample CX-07)	14
Figure 8 – Mineralized Sheeted Veins collected for Re-Os age dating (CR21-57m)	14
Figure 9 – Altered Hand Samples Collected for Spectral Analysis (CZTS-01 and DPTS-02)	15
Figure 10 – Plan Map of Sample Locations for Analysis	16
Figure 11 – 3D Model of the South Zones Area in relation to EL52154	17
Figure 12 – Plan Map of Incomplete Assay Data from the South Zones Area	18
Figure 13 – Drillhole MM-25 Pallet Prior to Re-log	19
Figure 14 – Drillhole MM-25 Boxes 1 to 6 (~9 to 142 feet)	20
Figure 15 – Drillhole MM-25 Section displaying New Geological and Geophysical data	21
Figure 16 – Drillhole CR-08 Section displaying New Geological and Geophysical data	22
Figure 17 – Unsampled Sheeted Veins Containing Chalcopyrite (Cp) and Bornite (Bn) in CR-08	23
Figure 18 – Phase I Exploration Budget for the South Zones Area	25
List of Tables	
Table 1 – Details of Nova Scotia Exploration License Number 52154	
Table 2 – Summary of Work Conducted	9
Table 3 – Re-Os Age Data from Aquitaine-Argyle Zone Drillhole CR-21 (2021)	15
Table 4 – Hand Samples Collected from the South Zones Area (2020 and 2021)	15



Summary

Nova Copper Inc. has 100% control and ownership of three mineral exploration projects related to a genetically-linked porphyry-epithermal system spread out over a contiguous 26 square-kilometer property near Sydney, Nova Scotia. The mineral exploration claims were staked and consolidated by Nova Copper in 2018, and project boundaries have since been delineated based on geochemical signatures and current stage of exploration. The historic Coxheath Copper Mine site is located at the heart of the linked system, within the Coxheath Copper Project claims, hosting multi-percent copper values in spectacular veins of tourmaline, bornite, and chalcopyrite. Southwest of the Coxheath Copper Project is an adjacent group of claims referred to herein as the Sydney Copper Project, representing the main, gold-rich, porphyry copper system. Northeast of the Coxheath Copper Project is an adjacent group of claims referred to herein as the Eastern Gold Project, representing the epithermal expression of the porphyry copper-gold system. Macro-scale project divisions are outlined in Figure 1 (page 6).

In 2020, Nova Copper Inc. engaged Halle Geological Services Ltd. to perform comprehensive compilation and digitization of existing project data, spanning from 1875 to 2019, in order to develop modern project-scale deposit models and targeted exploration programs.

This assessment report dated March 25, 2022 will focus on work pertaining to Nova Scotia Mineral Exploration License Number 52154, located within the Sydney Copper Project and centred over historical mineral exploration and known porphyry copper mineralization of the South Zones Area.

Exploration License 52154 is held in the name of Nova Copper Inc. and consists of 12 claims that are in good standing until March 27, 2022. This report has been prepared and submitted by Jesse Halle of Halle Geological Services Limited (the "Author") on behalf of Nova Copper Inc. ("Nova Copper" or the "Company").

The Author has compiled, digitized, and modelled available technical data from the South Zones Area and finds that the historical work is of a standard that can be reasonably relied on. This effort was complimented by multiple site visits in 2020 and 2021 in order to perform prospecting, sample collection, and historical data validation.

Resultant 3D modelling identified various issues and opportunities, including large gaps in geological data as well as multi-element and/or gold and base metal analysis, within the newly modelled zones of gold-rich porphyry copper mineralization.

In 2021, a pilot historical drillcore re-log program was designed and executed to determine the validity of a full-scale re-log and infill assay program to address identified gaps in geological and geochemical data. The pilot program was facilitated by the Department of Natural Resources and Renewables Geoscience and Mines Branch Core Library in Stellarton Nova Scotia and involved high-quality photography and geological re-logging of two holes within the South Zones Area (MM-25 and CR-08). Inaugural geophysical measurements (magnetic susceptibility) were also collected every 1.5 metres for both drillholes. The pilot re-log identified new lithological contacts and structures that appear to have

SOUTH ZONES AREA ASSESSMENT REPORT – MARCH 2022



controls on mineralization, as well as multiple zones of un-sampled anomalous copper mineralization. The quality of drillcore was identified as suitable for further quarter, and/or half, and/or whole-core sampling and demonstrates that a full-scale re-log is possible and warranted.

Property-scale digitization and modelling also identified resource expansion opportunities and multiple unexplored areas with significant blue-sky potential, worthy of additional exploration. The Author agrees with historical reports that the Coxheath copper porphyry-epithermal system is intact and displays favourable lithology, alteration, and geochemistry to support the presence and preservation of a significant gold-rich copper deposit in the South Zones Area. A preliminary advanced exploration program including soil sampling, trenching, and diamond drilling has been proposed for the South Zones Area and will be updated and executed based on the results of the full-scale re-log.

Proposed work includes the full-scale geological, geochemical, and geophysical re-log of all available drillcore from the South Zones Area followed by a multi-phase diamond drill Program in and around the South Zones Area (based on the results of the re-log), in order to identify additional copper-gold mineralization and prepare for an inaugural NI 43-101 compliant Mineral Resource Estimate.



Introduction

The purpose of this Assessment Report is to describe procedures and results of technical data compilation, prospecting, and surveying performed on Exploration License Number 52154, since March of 2018, that has created a modern, comprehensive deposit model and project database to support future exploration programs and near-term expansion of mineralization. This Report is intended to satisfy assessment work requirements of the Nova Scotia Department of Natural Resources and Renewables *Mineral Resources Regulations* made under Section 156 of the *Mineral Resources Act* S.N.S. 2016, c. 3, and was prepared by Jesse Halle (P.Geo) of Halle Geological Services Ltd., on behalf of Nova Copper Inc..

Exploration License Number 52154 encompasses the highly prospective South Zones Area (including the Deep Pit, Central, and Aquitaine-Argyle Zones) and is part of a larger group of three contiguous exploration licenses (EL52154, EL52284, and EL52182), all held by Nova Copper, covering the main, goldrich, porphyry copper system referred to herein as the Sydney Copper Project (the "Project"). Details of EL52154 in relation to the Sydney Copper Project and the larger group of linked porphyry-epithermal development projects held by Nova Copper are outlined in Figure 1.

702000 704000 706000 710,000 712000 orrison Lake 5110000 MacMullin Lake outhro Lake 5108000 Histo<u>ric</u> Coxheath Copp Mine Site and nderground workings 5106000 5106000 Legend Eastern Gold and Eastern Waterbody Industrial **Nova Copper Exploration** Coxheath Copper Project Sydney Copper Project EL51968 onalds Lake EL52154 Mineral Zone EL52182 Major Road 5104000 5104000 FI 52284 Local Road EL53256 20m Elevation Contour EL53257 1.000 Power Line Other Exploration Licences Meters 702000 704000 706000 708000 710000 712000

Figure 1 – Nova Copper Linked Porphyry-Epithermal System Claim Packages



Location and Access

The South Zones Area (within EL52154) is located in Cape Breton County, Cape Breton, Nova Scotia, Canada on NTS map sheet 11K/01. The claims are centred on 46°04.3'N latitude and 60°22.0' W longitude (UTM 703500E, 5105500N NAD 83 Zone 20). Recent work being claimed for assessment purposes was completed at three locations in Nova Scotia, as described below:

- 1. EL52154/South Zones Area of the Sydney Copper Project, Cape Breton County
- 2. Geoscience and Mines Branch Core Library in Stellarton
- 3. Halle Geological Services Office in Halifax

Access to the property is excellent via 20 kilometres of all-season paved highways from Sydney, Nova Scotia, followed by a well-maintained secondary gravel road to the historic Coxheath Copper Mine Site (located at 46°05.3' N latitude, 60°21.5' W longitude/UTM 704200E, 5107250N NAD 83 Zone 20), then tertiary gravel roads to the Sydney Copper Project including direct access to Exploration License 52154. Figure 2 outlines the Project location and access to EL52154. Additional property specific details can be found in Appendix I – Climate, Physiography, Local Resources and Infrastructure.

705000 700000 710000 715000 720000 100 Kilometer Sydney Truro Stellarton Goldboro $\mathsf{T}|\mathsf{N}$ Halifax Sydney Upper Leitches Creek 125 5110000 Beechmont North MacMullin Lake Frenchvale Gouthro Legend Nova Copper Exploration Licence 52154 Beechmont Eastern Gold and Eastern Industrial Projects Coxheath Copper Project EL52154 Sydney Copper Project 5105000 Blacketts Lake Offis Lake Highway Sydney Forks Major Road Local Road Power Line 20m Elevation Contour Kilometers 700000 705000 710000 715000 720000

Figure 2 – Sydney Copper Project Location and Access



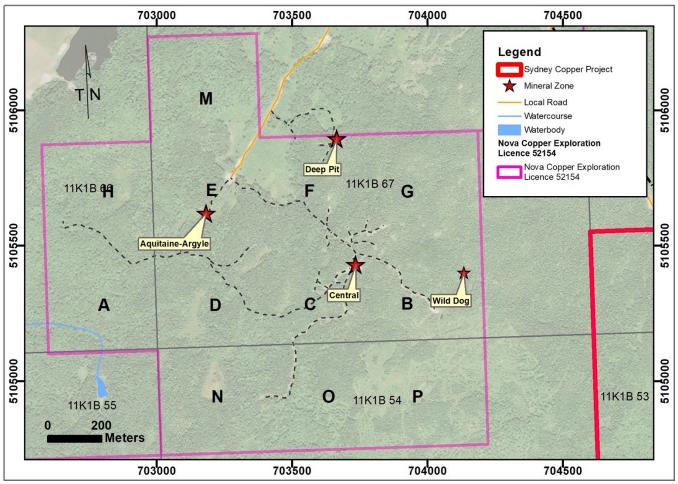
Exploration License Tabulation

The South Zones Area, located in Cape Breton County, Nova Scotia, Canada, is made up of one exploration license (EL52154), staked and held by Nova Copper since March 27, 2018. EL52154 is located on NTS Map Sheet 11K/01, centred at 46°04.3'N latitude and 60°21.5'W longitude/UTM 703500E, 5105500N NAD83 Zone 20, and consists of 12 mineral claims covering approximately two square kilometres, as submitted by Halle Geological Services Ltd. and outlined in Table 1 and Figure 3.

Table 1 - Details of Nova Scotia Exploration License Number 52154

EXPLORATION LICENCE Nº	LICENCE HOLDER	REPORT SUBMITTED BY	CLAIM REF.MAP	TRACT	CLAIMS	ISSUE DATE yyyy-mm-dd	EXPIRY DATE yyyy-mm-dd
52154	Nova Copper Inc	Halle Geological Services Ltd	11K1B	54	N to P	2018-03-27	2022-03-27
52154	Nova Copper Inc	Halle Geological Services Ltd	11K1B	67	B to G, M	2018-03-27	2022-03-27
52154	Nova Copper Inc	Halle Geological Services Ltd	11K1B	66	А, Н	2018-03-27	2022-03-27

Figure 3 – EL52154 South Zones Area Claim Reference Map





Exploration License Number 52154 encompasses the highly prospective South Zones Area (including the Deep Pit, Central, and Aquitaine-Argyle Zones) and is part of a larger group of three contiguous exploration licenses (EL52154, EL52284, and EL52182) that cover the main porphyry-copper gold system, referred to herein as the Sydney Copper Project.

Prospecting of the South Zones Area began in the 1890s when copper was discovered near the Aquitaine-Argyle Zone during early mining and exploration of the nearby Coxheath Copper Mine. Since then, millions of dollars have been intermittently spent in the area on geophysical and geochemical surveys, trenching, and diamond drilling. Just over 13,000 metres of drilling has been performed on the Sydney Copper Project, largely in the South Zones Area. A full history of project exploration is available in Appendix II – Exploration History.

Assessment Work Performed

Throughout 2018, Nova Copper staked and consolidated 26 square kilometres of contiguous mineral exploration claims related to the Coxheath porphyry copper-gold system (including EL52154) and registered available drill data into a master database. Nova Copper also began to acquire and assemble an extensive report library and data room. In 2020, the Company engaged porphyry copper experts at Halle Geological Services Ltd. to aid in modern digitization and modelling throughout the project area.

Technical data compilation led to further prospecting and surveying of EL52154 (the "South Zones Area") in order to create a modern, comprehensive deposit model and project database that will support future robust exploration programs aimed at discovery and expansion of mineralized zones. Table 2 summarizes work conducted on EL52154 for the purposes of this assessment report.

Table 2 – Summary of Work Conducted

ASSESSMENT WORK	LOCATION	PERSONS	DATES PE	RFORMED	HOLIBS	DETAILS
ASSESSIVIENT WORK	LOCATION	INVOLVED	FR	то	HOUKS	DETAILS
Technical Data Compilatio	n					
Compilation	Halifax, NS	Jesse Halle, P.Geo	Apr 2020	Mar 2021	8	Discovery of reports and data (university librarys, online, Nova Cu Database)
Validation	Halifax, NS	Jesse Halle, P.Geo	Apr 2020	Mar 2022	11	Review; investigation of conflicting data
Digitization	Halifax, NS	Jesse Halle, P.Geo	Apr 2020	Mar 2022	40	Data capture from Hard Copy files; transposition into GeoSoft
Prospecting	•	•	•	•		
EL52154 Site Visit,	Coxheath, NS	Jesse Halle, P.Geo	Sep 29, 2020	Oct 1, 2020	18	Travel; Orientation and Safety Briefing; Prospecting and Structural
Sample Collection		Emily Halle, PMP	Sep 29, 2020	Oct 1, 2020	18	Measurements (parallel vein sets); Access; Data Validation (GPS of roads,
		Harry Cabrita	Sep 29, 2020	Oct 1, 2020	18	drillhole collars, cutlines, powerlines, shafts, etc.)
		Jesse Halle, P.Geo	Jul 27, 2021	Jul 28, 2021	20	Travel; Orientation and Safety Briefing; Prospecting and Sample Collection
		Emily Halle, PMP	Jul 27, 2021	Jul 28, 2021	20	(Terra Spec and Petrography); Data Validation (GPS of roads, drillhole
		Harry Cabrita	Jul 27, 2021	Jul 28, 2021	20	collars, cutlines, powerlines, shafts, etc.)
Core Library Visit,	Stellarton, NS	Jesse Halle, P.Geo	Jul 29, 2021	Jul 29, 2021	10	Lay out core; review alteration and mineralized zones with external porphyry
Sample Collection		Emily Halle, PMP	Jul 29, 2021	Jul 29, 2021	10	experts, sample collection (Terra Spec and Re-Os Age Dating)
		Harry Cabrita	Jul 29, 2021	Jul 29, 2021	10	
Deposit Modelling						
3D Modelling	Halifax, NS	Jesse Halle, P.Geo	Jun 2020	Jan 2022	71	Using newly compiled data - verification & exploration planning
Pilot Re-log – Geological a	nd Geophysical					
Project Set-up	Stellarton, NS	Jesse Halle, P.Geo	Oct 20, 2021	Oct 21, 2021	6	Safety Briefing; Liase with Core Library Managers; Inventory of Drillholes;
		Emily Halle, PMP	Oct 20, 2021	Oct 21, 2021	6	Set-up logging area and tools
Geological Re-log	Stellarton, NS	Jesse Halle, P.Geo	Oct 20, 2021	Oct 21, 2021	10	Lay out drillholes; Observe and record core quality, lithologies,
		Emily Halle, PMP	Oct 20, 2021	Oct 21, 2021	14	mineralization, structures and contacts; compare log to assay data
Photography	Stellarton, NS	Jesse Halle, P.Geo	Oct 20, 2021	Oct 21, 2021	2	Labal boxes; digitally photograph entire drillhole (3 boxes at a time)
Mag Sus Survey	Stellarton, NS	Jesse Halle, P.Geo	Oct 20, 2021	Oct 21, 2021	2	Record Magnetic Susceptibility measurements on core every 1.5 metres
Assessment Report Writin						
Technical Writing	Halifax, NS		Mar 10, 2022			Compilation, Outline, Body, Results
Figures and Tables	Halifax, NS		Mar 10, 2022			Claim Details, Maps, Results, Assessment Work Details
Conclusions	Halifax, NS		Mar 10, 2022			Results, Conclusions & Reccommendations of Work Performed
Review and editing	Halifax, NS	Emily Halle, PMP	Mar 24, 2022	Mar 25, 2022	8	Formatting, edits, and final review



Technical Data Compilation

Nova Copper engaged porphyry copper experts at Halle Geological Services to perform detailed compilation and digitization of historical data using over a century of original French, Chinese and English hand-written and/or scanned reports, maps, geological logs, and assay data resulting in the collection of higher-quality aerial, topographical, geological, geochemical and geophysical data that is now layered and available for review in 2D software (the Author used ESRI ArcGIS) as well as 3D modelling software (the Author used Seequent GeoSoft Target). These layers identify coincident and robust exploration targets that have never been drilled or otherwise tested. Compiled plan maps of (1) topology and aerial photo compilation (2) surface geology, geochronology, alteration, and structure and (3) geochemistry and geophysical anomalies, are shown below in Figures 4, 5, and 6 (respectively).

Figure 4 displays simplified elevation contours interpreted from a highly-detailed digital elevation model available from the Nova Scotia government nsgi.novascotia.ca website. The resultant contours have been generated in elevation increments of one metre and show increased detail when compared to the historical 20 metre elevation contour previously used. The elevation model has also been imported into 3D modelling software allowing precise positioning of Project surface data. Figure 4 also displays a georeferenced satellite image available in the public domain through bing.com/maps.

704000 5106500 5106000 Basin Aquitaine-Argyle 5105500 Wild Dog Contact 5105000 5105000 Legend Nova Copper Exploration Licence 52154 1965 Mariner Grid 2008 Matrix Grid 2012 Quantec IP Line 5m Elevation Contour Local Road 701500 702000 702500 703500 704000 703000 704500 705000 © Halle Geological Services Ltd March 2022

Figure 4 – Plan Map of Topology and Aerial Photo compilation



Well over one-half of all drilling in the licence area pre-dates modern global positioning systems and relied instead upon hand-cut grids to reference exploration activities. To date, the grids shown in Figure 4 have not been located on the ground but have been positioned in UTM space to an estimated accuracy of +/-10 metres. As most historical drillholes and geochemistry surveys used these grids for positioning, and thus have corresponding station-line coordinates, it is recommended that fieldwork aims to discover these grids in on the ground and attribute final positioning to these drillholes enabling increased accuracy.

Figure 5 compiles the geology, structure, alteration, and geochronology for the exploration licence area. Geologic interpretation was sourced from 100-foot-spaced grids from detailed 1965 Mariner Mines mapping, the 1996 master's thesis from J. Ortega, as well as input from interpretation of diamond drilling by Donia Resources in 2011, and regional mapping of the area from Barr (2017). Ortega's thesis also supports propylitic and potassic alteration domains (shown) in the intrusive rocks underlying the exploration licence area. A brief overview of supporting regional and property-scale geology can be found in Appendix III – Geology and Mineralization.

703000 Legend Nova Copper Exploration Licence × 1987 Sample, Thicke Mafic Dike Geochronology Sample GEOLOGY Sandstone, Agglomerate Siltstone Arkose to Quartzite Andesite, Basalt Andesite Tuff, Breccia Mafic Dike Feldspar Porphyry Gabbro Diorite Granite to granodiorite 1997 Alteration Zone, Thicke MT6-266 Phyllic (Ms+Qz+Py) MX6-265 Potassc (KF+Ab+Qz) Propylitic (Ep+Ms+Ch) Structural Corridor Local Road Watercourse Waterbody CH-22 702500 703000 703500 704000 705000

Figure 5 – Plan Map of Compiled Geology, Geochronology, Alteration and Structure



Figure 5 also shows the location of Re-Os geochronologic mineralization dates from Kontak (2008) and Nova Copper (2021), and an additional date from U-Pb data positioned northeast of the licence area from Van Rooyen and Barr (2019). Samples within the licence area from Thicke (1987) are also plotted. Though precise locations of Thicke's samples are not known, they still well-describe the three main phases of the Coxheath intrusive suite (diorite to quartz diorite, gabbro, and granite to granodiorite).

Structural compilation, also shown in Figure 5, combines interpretations from Bayne (1963) and an independent structural study by Ridell (1984) who defined north and northeast-trending structural corridors through the licence area. Additional structural data has been compiled (not shown) originating from a 2010 Aeroquest airborne radiometric and magnetic survey as well as a 2012 Quantec IP survey performed over the exploration licence area.

Figure 6 depicts results of a 1963 through 1965 soil geochemistry survey over the project area. Copper and molybdenum values above 1.8 standard deviations of the mean of a given soil sampling program highlight anomalous areas. Prior to the current effort, this data was only available in paper format.

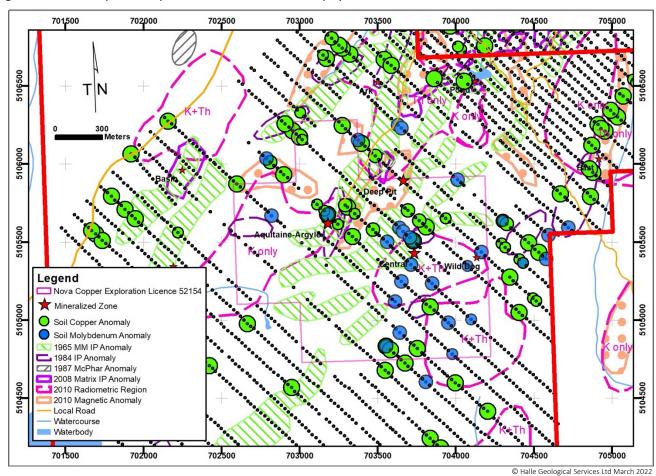


Figure 6 - Plan Map of Compiled Geochemical and Geophysical Anomalies

Interpreted results of the numerous geophysical efforts throughout the history of the licence area are also presented in Figure 6. The identified anomalous regions are compiled from interpretations of multiple surveys including the 1965 IP (chargeability and resistivity) survey by McPhar Geophisics



(MacCormack, 1965), the 1976 IP Geoterrex survey by the Aquitaine Company of Canada (Glass, 1976), the 1987 McPhar helicopter-borne magnetic, EM, and VLF survey (DeCarle, 1987), the 2008 Matrix IP survey (Jensen, 2008), and the 2010 Aeroquest radiometric and magnetic survey. The 2012 Quantec IP survey generated a weak anomaly over the Deep Pit mineral prospect (not shown).

The current effort represents an inaugural compilation of this data in real space allowing for anomaly stacking to generate targets. A non-exhaustive list of targets supported by the current work include:

- 1. Shared magnetic, IP, and alteration features of the Aquitaine-Argyle and Deep Pit Zones
- 2. Coincident multi-element geochemical and radiometric anomalies along with an IP anomaly south of the Central Zone
- 3. The andesite-diorite contact at the potassic-propylitic contact of the Deep Pit zone

This compilation work commenced in April of 2020 and is ongoing. The majority of reports and data have been located and captured, but given the long history of the property a small number of additional reports still require discovery, verification, and addition to the database.

Prospecting and Sample Collection

In support of the technical data compilation effort, multiple site visits (September 30 and October 1, 2020 and July 27 and 28, 2021) were performed by porphyry copper experts of Halle Geological Services, along with third-party colleagues, in order to identify or confirm proposed deposit models for the South Zones Area. Outcrops and historical trenches were prospected and sampled for petrography, mineral spectrography, and Re-Os age dating.

Some data validation was also performed at this time using a hand-held GPS to map roads and pin-point historical drill collars.

Sheeted veins displaying copper mineralization at the Central Zone were identified as significant vectors in understanding the porphyry-copper deposit model and were examined and sampled for petrographic analysis on July 27, 2021. Results confirm porphyry-style potassic alteration and mineralization.

Figure 7 depicts sample CX-07 and sample collection details are summarized in Table 4. The full petrographic report is available in <u>Appendix IV – CX-07 Vancouver Petrographics Ltd. Report (September 2021)</u>.

Mineralized sheeted vein sets from historical drillcore of the Aquitaine-Argyle zone were also examined for the purposes of vein petrogenesis and a molybdenum-rich sample was taken for Re-Os age dating on July 28, 2021 (Sample CR21-57m). The resulting age is given as 623.5 Ma +/- 2 Ma, and confirms to a previous mineralization age from Kontak (2008) of 626 +/- 3 Ma. The ages are within error of U-Pb dates of the Coxheath intrusive complex, supporting that porphyry-style mineralization is coeval with the crystallization age of the Coxheath intrusive rocks.

Figure 8 Shows the Re-Os sample taken from drillhole CR-21 at 57 metres and Table 3 displays the results of the Re-Os age dating submitted on behalf of Nova Copper by third party geologists. Detailed analytical methods are available in Appendix V – CR-21-57m Re-Os Age Dating Report (September 2021).



Figure 7 – Mineralized Sheeted Veins Collected for Petrographic Analysis (Sample CX-07)



Figure 8 – Mineralized Sheeted Veins collected for Re-Os age dating (CR21-57m)



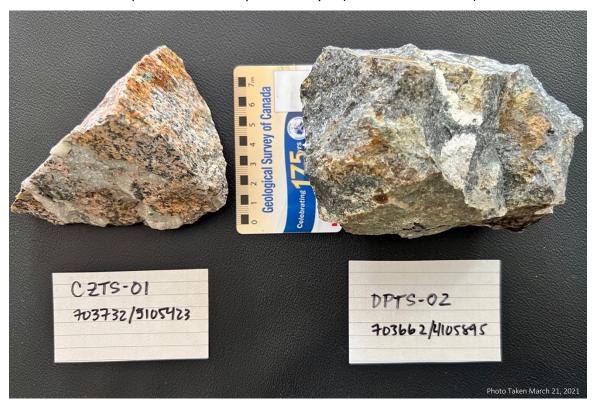


Table 3 – Re-Os Age Data from Aquitaine-Argyle Zone Drillhole CR-21 (2021)

SAMPLE	Re ppm	± 2σ	¹⁸⁷ Re ppm	± 2σ	¹⁸⁷ Os ppb	± 2σ	MODEL AGE (Ma)	±2σ (Ma)
CR-21-57m	79.04	0.22	49.68	0.14	518.81	0.06	623.5	2.6
CR-21-57m rpt	106.4	0.30	66.88	0.19	697.14	0.42	622.4	2.6

As part of a larger-scale porphyry-epithermal alteration mapping effort using both surface and drillcore samples, intrusive hand samples from the Central and Deep Pit Zones were examined and collected by Halle Geological Services on September 30, 2020 for later spectral analysis (TerraSpec). A Photo of altered hand samples collected are shown in Figure 9. At the time of this Assessment Report, the Company does not have results from spectral analysis.

Figure 9 – Altered Hand Samples Collected for Spectral Analysis (CZTS-01 and DPTS-02)



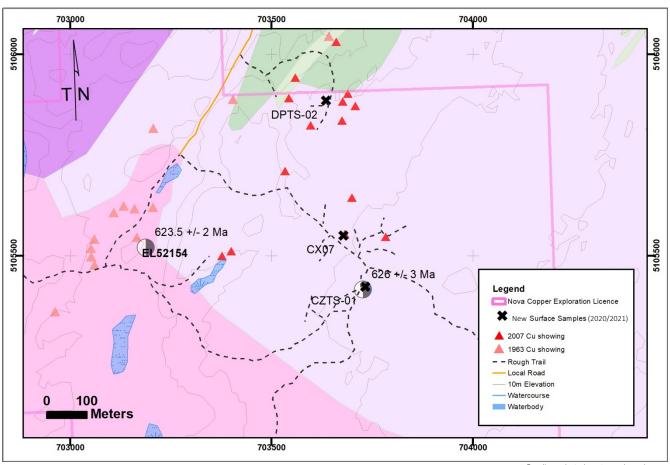
All new surface sample collection details, for the purposes of the Exploration Licence 52154 Assessment Report dated March 25, 2022, are summarized in Table 4 and are also displayed in plan view along with newly compiled geology in Figure 10.

Table 4 – Hand Samples Collected from the South Zones Area (2020 and 2021)

SAMPLE ID	ZONE		COLLECTED BY		EASTING UTM NAD83	PURPOSE
CX-07	Central	Jul 27, 2021	E. Halle	5105550	703677	Petrography
CZTS-01	Central	Sep 30, 2020	J. Halle	5105423	703732	Terraspectrometry
DPTS-02	Deep Pit	Sep 30, 2020	J. Halle	4105895	703662	Terraspectrometry



Figure 10 – Plan Map of Sample Locations for Analysis



© Halle Geological Services Ltd March 2022

Deposit Modelling

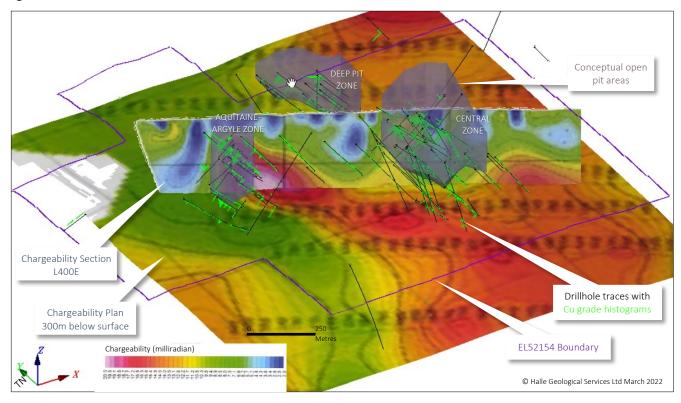
The South Zones Area had not previously been modelled using 3D software. Subsequent to digitization the Author used Seequent GeoSoft Target to model compiled topological information, geophysical sections and plans, and lithological and geochemical results from drill data, creating an inaugural and comprehensive 3D model for Exploration Licence 52154, comprising the main mineralized targets of the South Zones Area. This model led to the recognition of bulk-tonnage potential for the copper-gold-molybdenum enriched deposit area.

A small selection of this newly modelled data is displayed in Figure 11, which looks at the exploration licence from the southwest at a 40-degree angle and shows a 2012 IP chargeability pseudo-section from Line 400 East along with a chargeability plan at 300 metres below surface. Drillhole traces are presented in black, along with downhole histograms of copper assay data displayed in bright green, highlighting the three main Cu-Au-Mo zones: Aquitaine-Argyle, Deep Pit, and Central (from left to right). Volumes of higher-grades are encompassed in grey solids representing three conceptual open pit designs in advance of a NI 43-101 compliant pit-constrained mineral resource estimate.

The Author notes that that there is abundant expansion and exploration potential surrounding each of the conceptual pits.



Figure 11 – 3D Model of the South Zones Area in relation to EL52154



Pilot Re-log and Infill Assay Program

Technical data compilation and modelling identified significant gaps in the South Zones Area drillhole dataset, notably within the newly-modelled zones of mineralization. Missing data includes geological descriptions, structures, drillcore photographs, and important geophysical and geochemical data. These gaps were largely caused by intermittent ownership and exploration, as well as varying sampling program standards over the years. Most notably, the compilation highlighted:

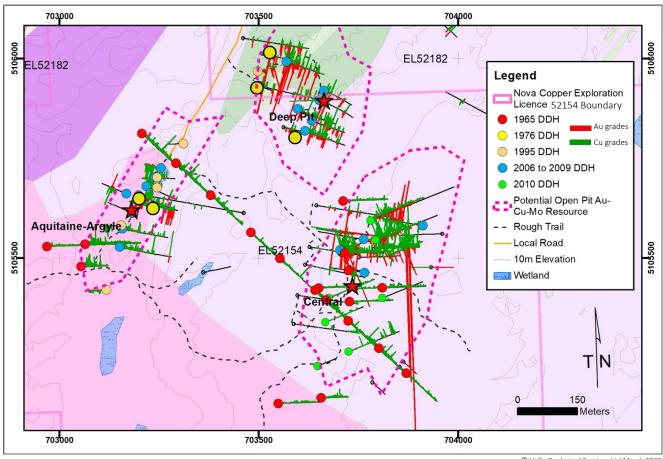
- 1. a lack of gold and silver analysis in all 1965 drilling, even in the gold-rich Central Zone,
- 2. discontinuous gold, silver, copper, molybdenum assay data from 1976 and 1995 drilling, notably in the Aquitaine-Argyle Zone, and
- 3. large unsampled intervals in 2006 to 2009 drilling, throughout highly-prospective zones of copper, gold, and molybdenum mineralization

Obtaining this valuable information is key to understanding the deposit and advancing the highly-prospective South Zones Area through successful exploration and technical reporting.

Figure 12 displays outlines of the zones of known mineralization that lack important geochemical data such as gold, copper, silver, and molybdenum, as well as significant indicator elements that can be used to vector toward new and/or higher-grade zones.



Figure 12 – Plan Map of Incomplete Assay Data from the South Zones Area



© Halle Geological Services Ltd March 2022

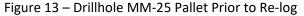
Fortunately, a considerable portion of drillcore from the South Zones is available to be re-logged and assayed. Additional data collection from this drillcore will help to complete the data set, without the immediate need to re-drill areas of concern. Halle Geological Services Ltd. developed a targeted re-log and infill assay program for South Zones Area drillcore which lacks:

- 1. Geological data, including
 - a. lithological and alteration details
 - b. structural details
 - c. digital photographs
- 2. Geochemical data, including
 - a. infill assays for gold, silver and/or molybdenum (e.g., 1960s core with sporadic/no data),
 - b. infill multi-element assay data, including copper (e.g., mid 2000s), and/or
- 3. Geophysical data, including
 - a. magnetic susceptibility measurements
 - b. Spectrometry measurements

In October 2021, with the help of Mick O'Neill and Alex MacKay of the Nova Scotia Department of Natural Resources and Renewables Geoscience and Mines Branch Core Library in Stellarton, porphyry



experts Jesse Halle and Emily Halle of Halle Geological Services Ltd. performed a pilot re-log program to determine the validity of the full-scale program outlined above. The pilot program involved locating, organizing, and verifying two of 35 available drillholes within the South Zones Area: MM-25 (pre-re-log pallet shown in Figure 13), and CR-08. These particular holes were selected due to their accessibility, as the Core Library was unable to offer forklift services during the pilot re-log program.





Geological Survey

Historical drillholes MM-25 and CR-08 were both organized, laid out in sequence, and scrutinized using existing logs and assay results. Geological data such as lithology, alteration, and mineralization were examined with the aid of pen scratchers, pen magnets, whetstones, and 20x hand lenses, and findings were recorded in porphyry-copper log format. Detailed logs and codes are provided in <u>Appendix VI – Pilot Re-Log Notes and Logging Codes (October 2021)</u>.

New observations such as contacts and mineralogy were also noted on drillcore using grease pencils, and drillcore boxes and marker blocks were made visible and/or labeled for clarity before being digitally photographed. In the majority of cases, drillcore photographs did not previously exist, or were unable to be located.

Figure 14 shows an example interval from MM-25 that was organized, washed, logged, and digitally photographed (for the first time) on October 21, 2021. Note that many of the original paper sample tags from 1965 are still present and legible.



Figure 14 – Drillhole MM-25 Boxes 1 to 6 (~9 to 142 feet)



Geophysical Survey

Quantitative downhole geophysical measurements such as magnetics and spectral analysis were not performed during historical exploration programs. For the purpose of the pilot re-log, geophysical measurements using a KT-6 magnetic susceptibility metre were collected every 1.5 metres of available drillcore from MM-25 and CR-08, for a total of 142 of a possible 177 measurements over 273 metres of drillcore.

Initial investigations of the style of copper mineralization on surface and in drillcore from the South Zones Area related increased magnetite veining and disseminations to increased copper content. However, initial results from drillholes surveyed for magnetic susceptibility during the pilot re-log program (CR-08 in the Deep Pit Zone and MM-25 in the Central Zone) do not immediately support this observation, and potentially show an inverse relationship between magnetite content and grade (e.g., MM-25 at ~100 metres and ~130 metres).

Depressed magnetic susceptibility in the top 30 metres of CR-08 is likely related to shearing and/or magnetite destructive alteration phases, the latter of which could be identified using mineral spectrography.



Mineral spectrography (TerraSpec) was not performed in the pilot re-log program, but is recommended for the full-scale re-log program in order to identify areas of alteration and assist in future geochemical surveys. These types of objective data insights are critical to understanding the deposit and are recommended to be performed in all future exploration programs.

Figures 15 and 16 show northe ast facing sections for both drillholes (MM-25 and CR-08, respectively), displaying newly obtained geological data including alteration, structure, and lithology (new lithology (ReLITH) down the right side of the drillhole trace and historical lithology (LITH_PLOT) down the left side of the trace), and newly obtained geophysical data (magnetic susceptibility profile), along with histograms of historic assays showing copper (in green) and molybdenum (in blue).

Tables of detailed magnetic susceptibility measurements are provided in <u>Appendix VII – Results of</u> Magnetic Susceptibility Survey (October 2021).

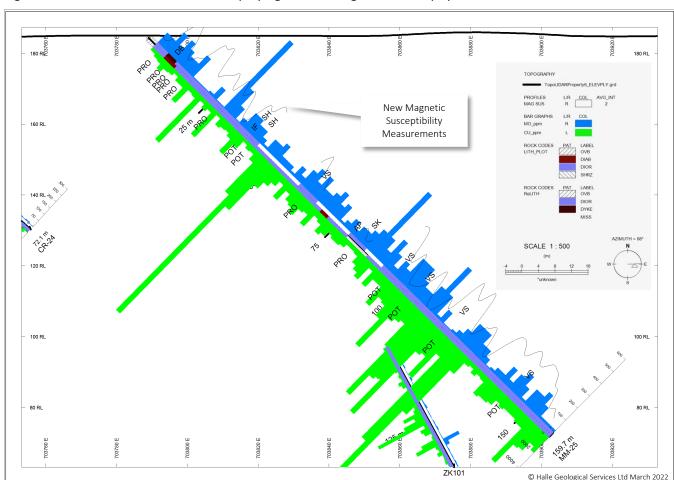


Figure 15 – Drillhole MM-25 Section displaying New Geological and Geophysical data



© Halle Geological Services Ltd March 2022

New Magnetic Susceptibility Measurements

Non IL

150 Pil.

150 Pi

Figure 16 - Drillhole CR-08 Section displaying New Geological and Geophysical data

Geochemical Survey

Historical sampling intervals and drillcore quality were assessed for a future full-scale infill geochemical assay program. Available drillcore was found to be well-labeled and of sufficient quality to justify a re-log that will provide valuable analytical results. No geochemical samples were taken or submitted for assay during the pilot re-log program.

Interpretation of Results

The Author has compiled, digitized, and modelled available data from the property and finds that the historical work is of a standard that can be reasonably relied on. Comprehensive technical data compilation and digitization resulted in the collection of higher-quality satellite images and topological, geological, geochemical and geophysical data that is now layered and available for review in ArcGIS as well as interactive layers in Geosoft Target.

Geochemical modelling clearly demonstrates relative Au and Mo enrichment in the South Zones Area when compared to the Cu-only mineralization style of the historical Coxheath Copper Project Area. Typically, South Zone mineralization is hosted over relatively longer drill intercepts (e.g., 60 metres of



0.28% Cu and 0.24 g/t Au in CR-23 of Central Zone). Collectively, the three zones that comprise the South Zones Area (Central, Aquitaine-Argyle, and Deep Pit Zones) may be amenable to less costly openpit mining in modern times. With the recent increases in gold and copper prices in the metals market, and the designation of copper and molybdenum as critical minerals by the Canadian Government in 2021 (https://www.nrcan.gc.ca/our-natural-resources/minerals-mining/critical-minerals/23414), these Au-Cu-Mo intersections are closer than ever to economic extraction.

The pilot re-log identified new lithological contacts and structures that appear to have controls on mineralization, as well as multiple zones of unsampled copper mineralization. The quality of drillcore was also identified as suitable for quarter- and/or half- and/or whole-core sampling and proves that a full-scale re-log is possible and warranted. Figure 17 depicts one of many examples of copper mineralization that was not sent for geochemical analysis during the original exploration program.

Figure 17 – Unsampled Sheeted Veins Containing Chalcopyrite (Cp) and Bornite (Bn) in CR-08



A more-complete database containing new geochemical and geophysical data will allow for a comprehensive understanding of the South Zones Area deposit, enabling more efficient expansion of mineralized zones and the generation of new and robust drill targets. Data generated by the proposed



full-scale re-log and infill assay program is also critical for the preparation of a NI 43-101 compliant Mineral Resource Estimate.

Property-scale digitization and modelling identified resource expansion opportunities and multiple unexplored drill-ready areas with significant blue-sky potential, worthy of additional exploration. A preliminary ground exploration program including soil sampling, trenching, and diamond drilling has been developed and will be updated and executed based on the results of the full-scale re-log.

Conclusions and Recommendations

Recent assessment work for Mineral Exploration Licence 52154 has resulted in an inaugural and comprehensive digital data room and deposit models, has field-checked specific locations of importance, and has highlighted key areas for future exploration.

Decades of historic geological, geochemical, geophysical, structural, and drill data were verified, compiled and merged with modern digital data (drill, topological, and geochronological). The Author has examined and agrees with historic references and documentation that support the presence of a significant calc-alkaline porphyry copper system with the potential of a rarely seen near-surface cross-section of the mineralizing system, from the roots of the porphyry through to the epithermal expression. The South Zones Area is of particular interest due to documented potassic and propylitic alteration of dioritic rocks with Cu-Au-Mo mineralization, typically associated with economically important porphyry copper deposits.

Results of this technical data compilation has also highlighted:

- 1. gaps in historic geochemical data required to understand the breadth of mineralization of the porphyry system
- 2. possible relationships between the Aquitaine-Argyle, Deep Pit, and Central zones that should act as additional exploration vectors in future programs
- 3. additional multi-anomaly targets with favorable geochemistry for future exploration (e.g., the Wild Dog Zone, and south of the Central Zone)

Additionally, this effort highlights EL52154 as host to a particularly gold-rich porphyry copper system when compared to other porphyry deposits world-wide (Ortega, 1996). With increasing global demand for critical minerals, including copper and molybdenum, and the immediate proximity of the claim licence to favorable infrastructure, the South Zones Area warrants further mineral exploration.

Recommended future work for the South Zones Area includes:

- 1. continued field work to increase accuracy of historic grids (and historic surface exploration)
- 2. a full-scale geological, geochemical, and geophysical re-log of available historic drillcore
- 3. comprehensive interpretation of the resultant 3D lithologic and structural model

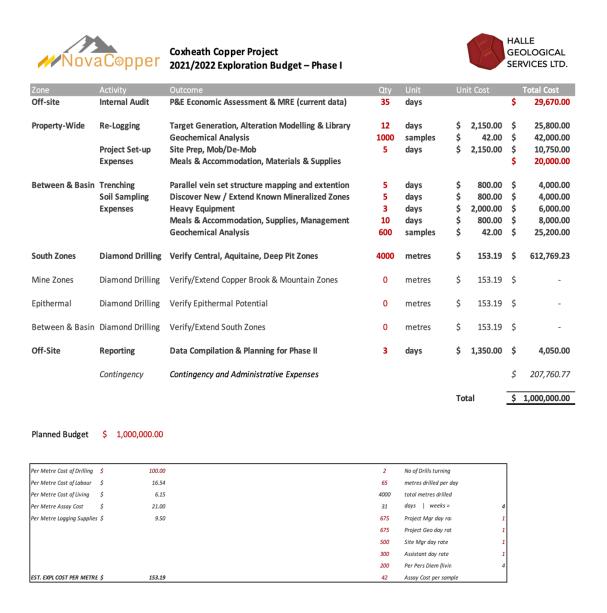
Subsequent to completion of the work above, a multi-phase surface exploration program in and around the South Zones Area is also recommended. With successful expansion of near-surface copper-gold



mineralization, a preliminary mineral resource estimation for the South Zones Area should be performed.

Figure 18 provides an example budget for the Phase I Exploration Program, including the full-scale Relog and Infill Assay Program as well as a preliminary surface and diamond drill exploration program in and around the South Zones Area.

Figure 18 – Phase I Exploration Budget for the South Zones Area





Date and Signature Page

I, Jesse R. Halle, P.Geo., do hereby certify that:

I am an independent consulting geoscientist of Halle Geological Services Ltd. with an address at Unit 3 – 1345 Dresden Row, Halifax, NS, B3J2J9.

I am a graduate of the University of Toronto with an Honors B.Sc. (Env. Sci.) in 1996, and of Lakehead University with an Honors B.Sc. (Geology) in 2002.

I am a member, in good standing, of Engineers and Geoscientists of British Columbia (member 157202), Professional Engineers and Geoscientists of Newfoundland and Labrador (member 10743), and Geoscientists of Nova Scotia (member 301).

I have worked in my chosen field in Nova Scotia, Newfoundland and Labrador, Quebec, Ontario, Manitoba, British Columbia, Northwest Territories, Yukon and Alaska as a geologist from 1996 to the present, having been involved in mineral exploration and management, modelling and database management, and technical reporting, including extensive exploration of porphyry copper-gold deposits in British Columbia and Yukon.

I visited Exploration Licence 52154 on September 30 and October 1, 2020 and again on July 27 and 28, 2021, where I examined mineralized outcrops and historical trenches, and located historic drill sites.

I am responsible for the preparation of all sections of the report titled "South Zones Area Assessment Report" dated March 25, 2022 which is based on information available in the public domain.

I have not received, nor expect to receive any direct or indirect interest in EL52154, nor do I beneficially own, directly or indirectly, any securities of Nova Copper Inc.

I am not aware of any material fact or material change, the omission of which would make the Technical Report misleading.

Dated at Halifax, Nova Scotia, this 25th Day of March, 2022

Jesse R. Halle, P.Geo.	



Bibliography

Bayne, A.S. 1963: Report on Geological, Rock Geochemical, Airborne Magnetic and SP Surveys and Drilling. NSDNR Assessment Files 11 K/01 B 13-C-27(06)

Bayne, A.S., Mowat, J.R., and Frohberg, M.H. 1963: Report on Geological, Soil Geochemical and Ground Magnetic Surveys and Petrographic Analyses, NSDNR ME 11K/01B 13-C- 27(07)

DeCarle, R.J. 1987: Report on Combined Helicopter-Borne Magnetic, EM and VLF Survey, for Coxheath Gold Holdings Ltd. Assessment Report 1987-154

DeWolfe, J. C. 2000: Geological investigation of the Coxheath Cu-Mo-Au deposit, Cape Breton Island, Nova Scotia: Structurally controlled porphyry-type mineralization; Unpublished B.Sc. thesis, St. Mary's University, Halifax, 128 p

Glass, F. 1976: Report on an IP Survey at Coxheath Hills, Nova Scotia, for Geoterrex Limited. NS Assessment Report 11K01B 13-C-27(19)

Jensen, L.R. 1996: Mispec Resources Inc. Drill Program Beechmont (Coxheath) Property, Cape Breton County, N.S. NSDNR AR 1996-002

Jensen, L R., Kapllani, L., and Kallfa, G. 2008: Induced Polarization, Resistivity and Magnetic Surveys - Coxheath Property, Cape Breton County Assessment Report ME 2008-158

Kontak, D.J., Horne, R., Creaser, R., and Archibald, D., 2008: Correlation of thermo-tectonic and metallogenic events in the Avalon and Meguma terranes of Nova Scotia with the use of ⁴⁰Ar/³⁹Ar and Re-Os geochronometry; Atlantic Geology, v. 44, p. 21

Lynch, G. and Ortega, J. 1997: Hydrothermal alteration and tourmaline-albite equilibria at the Coxheath porphyry Cu-Mo-Au deposit, Nova Scotia; Canadian Mineralogist, v. 35, p. 79-94.

MacCormack, L.V. 1965: Soil and Heavy Minerals Geochemical Maps and IP, Resistivity, and Ground Magnetic Maps. NSDNR Assessment Report 11K/01B 13-C-27(10)

O'Sullivan, J.R., Mirza, R., and Furey, C. 2012: Induced Polarization Survey and Geology, Coxheath Property, Cape Breton, Nova Scotia, Licences 05898, 09137, N.T.S. 11K/01 Quantec Geoscience Limited Assessment Report ME 2012-073

O'Sullivan, J.R, and Jagodits, F.L. 2011: Report on a Helicopter-Borne AeroTEM System Electromagnetic and Radiometric Survey; Aeroquest International Limited, Assessment Report ME 2011-042, 2011, 77 pages, 23 maps

Oldale, H.R. 1967: Report on Geological Survey, Economic Geology and Drilling, NSDNR Assessment File 11K/01B 13-C-27(12)

Ortega, J. and Lynch, G.L. 1994: Geological map of the Coxheath area, Cape Breton, Nova Scotia; Nova Scotia Department of Mines and Energy Open File Map 94-007

SOUTH ZONES AREA ASSESSMENT REPORT – MARCH 2022



Ortega, J. and Lynch, G. L. 1994: Mineralogical map of the Coxheath area, Cape Breton, Nova Scotia; Nova Scotia Department of Mines and Energy Open File Map 94-008.

Ortega J. and Lynch G. 1994: Alteration Patterns at Coxheath Porphyry Cu-Mo Au Deposit, NSDNR Report 1994-002, p. 35

Pollock, D.W. 1977: Report on Diamond Drilling, Drill Logs and Assays, Aquitaine Company of Canada, NSDNR AR 11 K/01B 07-C-27(03)

Pollock, D.W. 1977: Report on Diamond Drilling, Logs, Assays Sections Aquitaine Company of Canada, NSDNR AR 11K/01B 07-C-27 (02)

Riddell, J.E., Bodou, P., and Charpentier, P. 1984: Report on the Analysis of Fracture Patterns in the Coxheath Area. Assessment Report ME 84-019

Telford, W.M. 1973: Report on Ground Magnetic, EM and Telluric Surveys and Drilling. NS Assessment Report 11K/01B 13-C-27(14)

Thicke, M.J. 1987: Geology of the Late Hadrynian Metavolcanic and Granitoid Rocks of the Coxheath Hills-Northeastern East Bay Hills Area, Cape Breton Island, Nova Scotia. MSc Thesis, Acadia University



Appendix I – Climate, Physiography, Local Resources and Infrastructure

Cape Breton Island has a northern temperate climate, with temperature extremes moderated by the Atlantic Ocean. Exploration programs (including diamond drilling) are most efficient from April to December, but are possible year-round. Moderate snowfall and freezing temperatures are expected from December to mid-March (average temperatures of 0 to -15°C), with summer (June to September) temperatures ranging from 20 to 25°C and spring and fall exhibiting cool weather and intermittent rain.

The topography of the Sydney Copper Project consists of a northeast striking plateau of 125 to 195 metres above sea level running along the length of the property. Much of the area is covered with secondary growth mixed forest and locally cut areas. Within the main area of interest there are no significant buildings or residences that would be impacted by mining exploration or development.

The Coxheath area is sparsely populated with most inhabitants living along the Beechmont Road and working in the Sydney area, other than minor local hobby farming and wood-cutting activity. Two active aggregate quarries are in the vicinity of the South Zones Area. The Gillis Lake Quarry is located 2.5 kilometres south of the South Zones Area and was fully permitted in 2020. The Beechmont Quarry is located four kilometres to the northeast of the South Zone Area and is one of the largest aggregate quarries operating in Nova Scotia. The surrounding road systems recently received major upgrades amenable to trucking extracted commercial rock.

The property is situated on a broad upland with all-season paved roads to within one kilometre of the main target areas and gravel roads to and throughout the site including bridges over creeks. The property also has access to two regional grid power lines — a three-phase commercial line, and a new hydro line that runs parallel through the Sydney Copper Project. Additionally, municipal pole power surrounds and crosses the Project at numerous locations.

As the property is largely undeveloped woodlands and swampy areas, locating suitable tailing ponds and waste disposal areas pose no impediment to mining activities in the Project area. Water supply for drilling can be found in any of the numerous upland ponds.

Sydney is the second largest urban centre in the maritime provinces, complete with an airport, deep water shipping facilities, a skilled labour force and required infrastructure to support mining exploration.



Appendix II – Exploration History

A.S. Bayne and Company (1963-1965)

A.S. Bayne and Company Ltd. conducted a detailed exploration program in 1963 over a 1 square mile area surrounding the Coxheath Copper mine for Mariner Mines Ltd. This work included line cutting, geological, geochemical and magnetometer surveys. Later, additional exploration (soil geochemistry, and geophysics) was carried out on an additional 1 square mile area to the southwest. A total of 53.2 line-miles of grid lines at 200 foot spacing was established.

Mariner Mines Limited (1965)

Mariner Mines established the potential for porphyry copper-molybdenum mineralization in the area to the southwest of the No. 2 Shaft area. Following the discovery of molybdenum, the exploration concept changed from looking for high grade veins (low tonnage potential) to larger tonnage low-grade Cu-Mo porphyry-style mineralization. In 1965, Mariner Mines Ltd and new partner, Bethlehem Copper Corporation Ltd., cut some 54 miles of gridlines, two baselines were surveyed in, the property was mapped and a total of 125 trenches and pits were completed, 2600 soil samples were taken at 100 ft intervals on lines 400 feet apart and analyzed for Cu and Mo. IP surveying of 37 line-miles was carried out with nine anomalous areas identified. A limited magnetic survey was completed in the Central Zone area of the property. The company also drilled some 40 holes totalling 4667 metres, with only 3079 metres of core split and assayed for Cu and Mo.

Drilling by Mariner was concentrated in three areas:

- 1. The central part of the intrusive stock (now known as the Central and Aquitaine-Argyle Zones)
- 2. The Copper Brook Mine
- 3. The western contact of the intrusive stock with Carboniferous rocks (now known as the Contact and Basin Zones)

Twenty-eight diamond drillholes were drilled in the Central Zone (totalling 2935 metres). Horizontal and vertical continuity was difficult to establish in the area, despite discovery of several potentially economic mineralized zones: DDH MM-25 had an average grade of 0.5% copper over 36.5m, a second zone assayed 2% Cu, 6.53 g/ton Au and 3.73 g/ton Ag over 1.52m, and molybdenum values of 0.23% over 10.67m in MM-03 and 0.69% Mo over 1.52m in MM-05.

Aguitaine Company of Canada (1976)

The Aquitaine Company of Canada acquired the property in 1976. They carried out 9.08 line-kilometers of IP surveying over favourable areas.

This survey was followed up by diamond drilling of 1011.9 meters in eight holes in 1976. One hole (AC-6) tested the Aquitaine-Argyle Zone and intersected a 16.76m of 0.26% Cu, a 6.10m section of which assaying 4.9g/ton Au. A newly-discovered zone was termed the Deep Pit Zone; drillhole AC-3 in this zone intersected sporadic copper throughout, including 0.13% Cu and 0.28g/t Au over 17.07m. AC-5 in this zone ended in 0.40% Cu over 7.32m.



Coxheath Gold Holdings Limited (1987-1988)

In 1987, Coxheath Gold Holdings Limited acquired the property and carried out airborne magnetics and resistivity surveys over the property. These were followed by limited ground surveys, including magnetotelluric surveying. Because of a change of focus, the company concentrated its interests on developing the Tangier Gold Mine in Halifax County and no further work of significance was done at Coxheath Copper Mine and the licenses were allowed to lapse.

Burnt Point Resources/Mispec Resources (1995)

Mispec Resources Inc. acquired the property in 1995, and in the following years carried out prospecting, geological mapping on a 6.6 kilometre grid. Stream sediment sampling and biogeochemical sampling surveys were also carried out. A number of drill targets were defined. VLF-EM and magnetic surveys were also performed.

VLF-EM and magnetic surveys were carried out over the Deep Pit Zone. Six northeast striking anomalies were outlined by the VLF-EM survey. These anomalies were coincident with swampy linears and were interpreted to represent structural corridors. The magnetic survey produced low values coincident with the VLF linears and was interpreted as reflecting alteration destruction of magnetic minerals.

Seventeen drillholes totalling 1442 metres were performed, with five in the Aquitaine-Argyle Zone. Hole K-12 in this zone intersected 0.21% Cu and 0.24 g/t Au over 13m, followed shortly by 2.4g/t over 4m.

Coxheath Resources Ltd., Silvore Fox Minerals Corp., Donia Resources Co. Ltd. (2002 to 2011) In 2002, the theory of a property-wide genetically-linked porphyry system was suggested by Dan Kontak.

Between 2006 and 2009, 72 NQ holes totaling 12,672 metres were drilled across the property. Eight holes were drilled in the Deep Pit Zone, eight were drilled in the Aquitaine-Argyle Zone, and 10 were drilled in the Central Zone. These holes continued to discover long intercepts of low-grade porphyry copper style mineralization, punctuated by high-grade copper and/or gold intercepts. For example, CR-23 drilled the Central Zone and intersected 60m of 0.28% Cu and 0.24g/t Au; CR-19 drilled the Aquitaine-Argyle Zone intersecting 30m of 0.33% Cu and 0.43g/t Ag; and CR-06 in the Deep Pit Zone collared in 9m of 0.33% Cu and 0.33g/t Au within 17m of 0.22% Cu and 0.25g/t Au.

In 2007, an NI 43-101-compliant compilation and review of exploration potential for the Coxheath Copper Project was produced (O'Sullivan and Hannon, 2007). In 2008, Matrix GeoTechnologies Ltd. conducted a property-wide IP survey.

In 2010, Donia Resources drilled eight holes totalling 2,545 metres in the Central-Moly Zone. In 2011, Silvore Fox drilled two holes in the Central Zone totalling 782.2 metres.



Appendix III – Geology and Mineralization

Regional Geology

The Coxheath property is located within a late Precambrian volcanic-plutonic belt in eastern Cape Breton Island, Nova Scotia. The belt is the westernmost of four that make up the Avalon Terrain of the Canadian Appalachians. The belts were accreted at the site of a westward-dipping subduction zone. During accretion, the rocks were metamorphosed to greenschist or sub-greenschist facies typically manifested as a northeast-trending foliation and ductile folding in the project area. During the middle Paleozoic, the entire belt was subject to further compression resulting in one or more northeast trending fold axes as noted in the volcaniclastic assemblage.

Property Geology

The Coxheath Belt is comprised of a varied suite of late Precambrian volcanic rocks and an associated large plutonic complex.

Volcanic Rocks

The oldest rocks on the property are a thick sequence of basaltic to rhyolitic volcanic flows and associated pyroclastic rocks. Whole rock analysis indicates that they are of calc-alkaline affinities (Thicke 1987, Dostal and McCutcheon 1990, Barr 1993). A continental-margin island arc setting is postulated, based on its trace element patterns (Dostal and McCutcheon, 1990).

A varied number of lithologic units have been proposed for the volcanic rocks of the Coxheath belt primarily arising from the scope of investigation and scale of mapping, but most interpretations arrive at 3 dominant units: (1) a massive, fine-grained dark green to black andesite and interbedded basalt; (2) grey to yellowish green to maroon-coloured feldspar porphyritic rhyolite to dacite flows; and (3) varied lithic to lapilli tuffs and breccias.

Plutonic Rocks

The documented plutonic rocks of the property are most often divided into three map units: (1) diorite to quartz diorite to monzodiorite, (2) granite to granodiorite, and (3) gabbro. Dioritic rocks are typically dark grey, medium-grained, equigranular and often distinguished through clusters of hornblende and biotite imparting a spotted appearance to the rock. Granitic rocks are generally pale grey to pink, medium-grained, hornblende-bearing, and may include rounded xenoliths of dioritic rocks. Gabbroic rocks are medium to coarse-grained, dark grey, augite-bearing, and strongly magnetic.

A small number of intrusive dikes cut the plutonic rocks above, including aplitic, feldspar-porphyritic, and diabasic dikes.

Sedimentary Rocks

All of the rock suites above are unconformably overlain or are in fault contact with Carboniferous sedimentary rocks, typically the red siltstone and red and grey conglomeratic sandstone and conglomerates of the Grantmire Formation.

SOUTH ZONES AREA ASSESSMENT REPORT – MARCH 2022



Mineralization

Three main zones of copper-silver+/-gold+/-molybdenum mineralization have identified in the South Zones Area: (1) the Aquitaine-Argyle Zone, (2) the Central-Moly Zone, and (3) the Deep Pit Zone.

Mineralization in these zones typically consists of closely-space sheeted veins and disseminations of chalcopyrite and bornite, sometimes with molybdenite, found in the Coxheath diorite. The vein zones often occur over significant widths and have been shown to be anomalous in gold content, a mineralization style consistent with the gold-rich subclass of porphyry copper deposits. Ortega (1997) documented a south-southwest strike and steep westward dip as a typical orientation of these mineralized veins, haloed by a combination of potassic and sodic feldspar alteration rims.

Highlights of the most recent drilled intercepts include:

- DDH CR-23 (Central zone): 0.28% Cu and 0.24g/t Au over 60m (from 73m downhole)
- DDH CR-24 (Central zone): 0.21% Cu and 0.18g/t Au over 47m (from surface)
- DDH CR-15 (Aquitaine-Argyle zone): 0.3% Cu and 0.5g/t Ag over 20m (from 24m downhole)
- DDH CR-19 (Aquitaine-Argyle zone): 0.33% Cu and 0.43g/t Ag over 30m (from 27m downhole)
- DDH CR-12 (Deep Pit zone): 0.28% Cu and 0.82g/t Au over 15m (from 4m downhole)



Appendix IV – CX-07 Vancouver Petrographics Ltd. Report (September 2021)

CX07: WEAK/MODERATE POTASSIC (ALBITE-EPIDOTE-MAGNETITE-SERICITE) ALTERED DIORITE (?) CUT BY A CLOSELY SPACED SYSTEM OF SHEETED QUARTZEPIDOTE-MAGNETITE-KSPAR-CHALCOPYRITE-MINOR BORNITE-CHLORITE AFTER
SECONDARY BIOTITE VEINS

Described as surface sample from outcrop bearing sheeted veins, monzodiorite host with Described as surface sample from outcrop bearing sheeted veins, monzodiorite host with potential potassic alteration (magnetite-Kspar) with chalcopyrite-bornite in sheeted veinlets; hand specimen shows pale grey-green to buff, fine-grained felsic/intermediate intrusive rock cut by closely spaced, parallel sheeted veinlets mainly ~2 mm thick with local thin dark alteration envelopes and central sulfides. The rock is strongly magnetic, unscratched by steel, shows no reaction to cold dilute HCl, and abundant white etch for plagioclase but only minor yellow stain for K-feldspar (entirely along veins/vein envelopes, so secondary) in the etched offcut. Modal mineralogy in polished thin section is approximately:

Plagioclase (body of rock; albitized, sericite-epidote altered)

65%

Quartz (mainly veinlets, secondary)

10%

Plagitociase (body of toks, antifized, settene-epinore antered)
Quartz (mainly veinlets, secondary)
Epidote (mainly in veinlets/selvages; variable Fe content)
Magnetite (veinlet and disseminated; partly oxidized to hematite)
K-feldspar (veinlets only; secondary)
Chalcopyrite (mainly in veinlets) Sericite (after plagioclase)

Bornite (closely associated with chalcopyrite, magnetite)

Chlorite (after secondary biotite; veinlets only)

1%

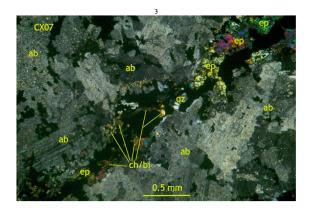
This sample consists mainly of abbitized, partly sericite-epidote altered plagioclase with relict mafic

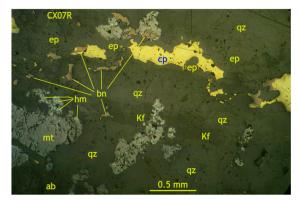
This sample consists mainly of albitized, partly sericite-epidote altered plagioclase with relict mafic sites now occupied by aggregates of epidote-magnetite-minor sulfides; most Cu-sulfide however occurs with coarser magnetite in a system of sheeted quartz-epidote-local Kspar-trace chlorite (after biotite) veins/veinlets. This is definitely a (relatively weak) potassic alteration assemblage.

In the body of the rock, plagioclase forms randomly oriented, sub- to euhedral tabular/lath-shaped crystals mainly in the 1-2 mm, rarely to 3 mm, size range. The crystals show distinct negative relief compared to quartz and the somewhat vague twinning with extinction Y-010 about 15* typical of albite, Anf., very likely secondary in light of the veining and alteration including pervasive sericite (randomly oriented subhedral flakes mainly <25, but up to 50 µm) and epidote (fine granular sub/anhedra <0.1 mm) plus minor Kspar (in adjacent veinlets). Relict mafic sites interstitial to the

sub'anhedra <0.1 mm) plus minor Kspar (in adjacent veinlets). Relict mafic sites interstitial to the plagioclase laths are mostly <1 mm, now represented by variable mixtures of epidote (subhedra <0.45 mm) and magnetite (subhedra <0.3 mm), traces of chalcopyrite mostly <0.15 mm.

In the sheeted veins/veinlets, which are up to about 2.5 mm thick and almost all parallel except for local partly oblique examples at 20.30° to the rest, quartz and epidote dominate in somewhat segregated, poorly defined and irregular bands <1 mm thick. Quartz forms tightly interlocking, randomly oriented, sub/anhedral crystals up to about 1 mm in diameter that display weak to rarely moderate undulose extinction, sub-grain development, and suturing of grain boundaries indicative of mild strain. Epidote forms somewhat bladed sub/euhedra up to 0.75 mm lone or much finer sub/anhedra <0.1 mm, the former with pale vellow colour and the latter strong boundaries indicative of mild strain. Epidote forms somewhat bladed sub/euhedra up to 0.75 mm long or much finer sub/anhedra <0.1 mm, the former with pale yellow colour and the latter strong brownish yellow colour, suggestive of moderate to high Fe content respectively. In places, minor sericite (matted/semi-radiating subhedral flakes to 0.1 mm) may be intergrown with the quartz, next to the epidote-rich band. Kspar forms irregular sub/anhedra mainly <0.7 mm within the veinlets, distinguished by traces of hematite from albite in the adjacent envelope. Magnetite occurs in irregular to somewhat elongated aggregates up to ~2 mm long, as does chalcopyrite with which it is closely associated. The magnetite is partly oxidized, especially at rims, to minor hematite as subhedral flakes mainly <0.1 mm. Chalcopyrite is locally partly intergrown with magnetite but does not appear to replace it; minor bornite locally intergrown with chalcopyrite forms sub/anhedra mostly <0.6 mm (and may partly replace magnetite?). The sulfides are closely related to or contained within





the epidote, and with minor chlorite (subhedral bright green flakes to 0.2 mm, after secondary biotite with pale brown pleochroism).

In summary, this is confirmed as weak/moderate potassic (albite-epidote-magnetite-sericite) altered diorite (?) cut by a closely spaced system of sheeted quartz-epidote-magnetite-lesser Kspar-chalcopyrite-minor bornite-chlorite after secondary biotite veins.

PHOTOMICROGRAPH CAPTIONS

CXO7: thin veinlet of quartz (q2)-epidote (ep)-minor chlorite after secondary biotite (ch/bi; Kspar not visible in this view) cutting diorite (?) composed mainly of albitized plagioclass (ab) slightly altered to minute flakes of sericite and epidote. At the center of the veinlet, magnetite and chalcopyrite-trace bornite (opaques) are intergrown. Transmitted light, crossed polars, field of view ~3 mm wide.

CX07R: central part of quartz (qz)-epidote (ep)-minor Kspar (Kf) vein with irregular aggregates of magnetite (mt, partly oxidized at rims to lighter grey hematite, hm) and chalcopyrite (ep), minor bornite (bn) closely associated with/contained within the epidote band. Reflected light, uncrossed polars, field of view -3 mm wide.





Appendix V – CR-21-57m Re-Os Age Dating Report (September 2021)

2021 Re-Os age dating of molybdenite for

Nova Copper Incorporated - Coxheath Project

Molybdenite-bearing rock samples were received in 2021 and processed for Re-Os age dating as follows:

CR-21-57m

For these samples, metal-free crushing followed by gravity and magnetic concentration methods were used to obtain a molybdenite mineral separate. Methods used for molybdenite analysis are described in detail by Selby & Creaser (2004) and Markey et al. (2007). The solvent extraction, anion chromatography and negative thermal ionization mass spectrometry techniques. A mixed double spike containing known amounts of isotopically enriched separate. We solvent extraction, anion chromatography and negative thermal ionization mass spectrometry techniques. A mixed double spike containing known amounts of isotopically enriched separate separate. Separate separate. Methods used in detail by Selby & Creaser (2004) and Markey et al., 2007) is routinely analyzed as a standard, and during the past 8 years returned an average Re-Os date of 27.78 ± 0.07 Ma (n=32), indistinguishable from the Reference Age Value of 27.66 ± 0.1 Ma (Wise and Watters, 2011).

The results of the Re-Os age determinations are given below in Table 1. The age uncertainty is quoted at 2σ level, and includes all known analytical uncertainty, including uncertainty in the decay constant of ¹⁸⁷Re.

Table 1. Re-Os isotopic and age data for molybdenite

Sample	Re ppm	± 2 σ	¹⁸⁷ Re ppm	± 2σ	¹⁸⁷ Os ppb	± 2σ	Model Age (Ma)	± 2σ (Ma)
CR-21-57m	79.04	0.22	49.68	0.14	518.81	0.06	623.5	2.6
CR-21-57m rpt	106.4	0.3	66.88	0.19	697.14	0.42	622.4	2.6

ppb = parts per billion, ppm = parts per million. All uncertainties are quoted at the 2 sigma level of precision. Rpt = replicate analysis

References.

R Markey, HJ Stein, JL Hannah, D Selby and RA Creaser "Standardizing Re-Os geochronology: A new molybdenite Reference Material (Henderson, USA) and the stoichiometry of Os salts". Chemical Geology (2007), **244**, 74-87.

D Selby and RA Creaser "Macroscale NTIMS and microscale LA-MC-ICP-MS Re-Os isotopic analysis of molybdenite: Testing spatial restrictions for reliable Re-Os age determinations, and implications for the decoupling of Re and Os within molybdenite". <u>Geochimica et Cosmochimica Acta (</u>2004), **68**, 3897-3908.

SA Wise and RL Watters "Reference Material 8599 Henderson Molybdenite". National Institute of Standards and Technoloy Report of Investigation, 30 March 2011.



Appendix VI – Pilot Re-Log Notes and Logging Codes (October 2021)

The control to people is taken of control of meaning the control of control o	NEW SAMPLING NOTES	Unsampled Cpy, Bn in vits	ed Cpy, Bn in vits	Unsampled Cpy, Bn in vits		Unsampled Cpy, Bn in vits		Unsampled Cpy, Bn in vits		Unsampled Cpy, Py in vits			ed Cpy, Mal in vits			ed Cpy in vits	Unsampled Cpy, Bn in parallel vein sets											
The control to partial between the control of the c	NEW SAN	Unsample	Unsample	Unsample		Unsample		Unsample		Unsample			Unsample			Unsample	Unsample											
The control to partial between the control man density of the control between the prevents are set to partial between the control between the prevents are controlled between the control	SAMPLING	INT	NOT SAMPLED	NOT SAMPLED		NOT SAMPLED	SAMPLED	INT Cu Au Ag		INT Cu Au Ag	SAMPLED		NOT SAMPLED		INT Ou Au Ag	NOT SAMPLED	NOT SAMPLED		CU ONLY	CU ONLY	CU ONLY	CU ONLY	CU ONLY	CU ONLY		CU ONLY	CU ONLY	CU ONLY
The control to partial between the control man density of the control between the prevents are set to partial between the control between the prevents are controlled between the control	HOTOS	21-0ct-21	21-0ct-21	21-0ct-21		21-0ct-21	21-0ct-21	21-0ct-21	Ī	21-0ct-21	21-0ct-21		21-0ct-21		21-0ct-21	21-0ct-21	21-0ct-21		21-0ct-21	21-0ct-21	21-0ct-21	21-0ct-21		21-0ct-21		21-0ct-21	0	21-0ct-21
The street of the benefit of the street of t	VG SUS								t					l									NC	Oct-21			NC	Oct-21
the control in the property cannot desire and extension and produced by the control lance Only RQ sea on this behalf the control lance Only RQ sea on the control lance on								-	t			- 1																
The region in the particular depends and a region from the particular depends and the particular depends and the control between 2 and the particular depends and the particular depend	H							100	t	3			200	l								100						
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		Most determine freeder met goden gebruiks og men der met men gere og den gebruiks geredigt, verskette geredigt, verskette geredigt i verskette geredigt for te leventsk geredigt, verskette for det for te leventsk for det for det geredigt for det for det geredigt, for d	Intense hematite +/- carbonate veins (shear zone?). Trace malachite on open fractures.	Alle	Wissing Box 11 (46 to 49m)	Back to diorite with only localized shear velicing (with increasing carbone, epidote +/. hervatish, Local vein breccia (chlorite matrix), likely may be Copy +/. Biv velicite (Sacretish, Minner 14 Selvages, Local Cy-Alig veries -/	Mixed zone of 10% cm-scale pink to white aplite dykelets and KI/Ab alteration zones with parallel vein sets. Local volcanic screens (to >25%) also with parallel vein sets (cov+ Ob). Abrurol lower contact with coanser nink dinitie.	Coarser grain, relatively homogeneous (14; leucocatid, politolitic dorite, Botte alteration (14; sericite) of mafrics (14; chlorite). Epidoce wellines + L. MAs advages: framery magnetic to disseminated troughout + trace CEP, Mottlee with local disseminated Cox, flare cardiocate venifies + 1, then the many hexces (15) set TCM set 77m. Possible lower contact at 80m.	Missing Box 17 (70,73.5m)	1000000	Diffuse contacts with finer grain diorite. Decreasing mineralization, but kl/ser alteration of mafics +/- weakly mineralized contact. Local biotite fragments (?) with Cpy & quartz.	Missing Boxes 20, 21 (82-90.5m)	Doote similar to top of hole. Albite/M selvages on rare, low angle veins 4/- clotty chorite veins (high angle) with minor hematite. Rare high-angle bornite in discrete veinlets. Unsampled, Local magnetite veinlets with bin 8 cpy (sampled with depth).	Missing Boxes 23 & 24 (95-100m)	Dotte similar to top of hole. Albite#d selvages on rate, low angle we're +/ cistry chorite we'res high angle) with minor hematiles. But will help be pointe in forcet weinder, for inampled, coal magnetite weindes with bin & cpy (sampled with depth). (Increasing alteration (eps. or, cd) toward shear zone at 105 Sm.		Dionte with panallel vein sets (mgt, sulphide (Cpr, Bn)) v/. kf/Ab selvages. Missing core after 117m.	Missing 80x 28 & 29 (117-122m (EOH)).	8			-	Missing boxes 7 & 8 (142-195') > 2% Cu	(8)	Missing boxes 10 & 11 (218-262')		Missing box 13 (281-303')	-
	F TCA IV	-	-	_		-	10	38	İ	38						70	10					-		10				10
88 88 88	TYF TYF			ði.		à	۸	ホ	H	ð.						3.	×		70		70	ð.		ŠĀ.				
	8	E 5 ×	E						ŀ										E		E					E		
	NC NC	m b		5		s	-	н	Ė	-	ь		2		4		2			-	ь		Ē					
	ð	> 5 8 >	ь					> 0 > 0	ŧ	> Q	77 O		۲۲ ۲۲	F	> 2	ئة >	2 \	H			>		Ė			>		
	ğ	R t		8≷ tr		BV tr		AL 1	F	AL 1									Е				F					
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	THER		d.						Π																			
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	8	>		-		-	7		Ė							4		Ħ				>	F		H			
\$\frac{1}{2}\$ \frac{1}{2}\$ \fra	5	D D	b ×	± ×	П	a ×			F					F		۵ >	5	F	b				F	i⊢ αc	F		П	
S	포	2		5		ž d			F				z z	F	p q	5	b	F	b		4			-	F	t,		5
	Ø.	ž							F				÷-	F				F		-	1		F		Е			1
\$\frac{1}{2}\frac{1}\frac{1}{2}\f	AB	b d		-			2		Þ				-	F	-		-	F					F	5	F	t d		-
\$\frac{1}{2}\$ \frac{1}{2}\$ \fra	Q.	7 0	4	2 0	П			7 0	F	7 0				F	7	1	2 0	F	7 0		7 0		F	7	F	7 0		
\$\frac{1}{2}\$\frac	ď	m							F		b			F	7 0	m	2 0	F					F	1				
	W							-	Þ				t c	F	ž C								F					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	у.					2		н	İ	н	p .		5		h d	b			ь					h		_		
N	80	5	-	_		_			þ		ž.		4	Ė	5			Ė	b				Ė	b		-		
N	Ų			н		-	m		t		0			Ė		e4								2				2
N	=		-				0	_	t																			
N	2	5	PRO	PRO		PRO	AB	0	L	0			5	L	0	POT	PO		POT	-	P0			POT		5		PRO
N	ALT2		NAME	To		10	10		t		8	3						ı				10						
N	ALT1 ALT2	0.	I	di.	f	a.	a.		f									f	4	a.	4	6.		Œ.	f	a.	f	6
N	=				Ц			8	1	8		Ц	MG	-	MG		MG	Н	_				1		Ц		Ц	
N	SIZE			운		운	S	¥	1		å					2	S		dd o	d.	ğ			EQ	H	å		ğ
	TXT SIZE			U		9	S Q	S	H	S	S N		S N		s N	0		H		S Q		8	-	S	H			82
	COL TXT SIZE	Q GE																								و		
	COL TXT SIZE	Q GE						2	f	α.								f		۵		*	F		f	S .		
	MOD COL TXT SIZE						175		-			П						Г				S.	Г		Г		П	
	MOD COL TXT SIZE													-			-	H	-			ă	L					
	MOD COL TXT SIZE						DIOR		L	_		Н														SAPI	Н	
	MOD COL TXT SIZE		0	_		œ	SO DIOR	œ	-	œ	œ	100	œ	in	œ	œ	œ		œ	w	œ		(Ar	œ			2	œ
	UTH1 * UTH2 * MOD COL TXT SIZE	DIOR	DIOR	DIOR			VOLC SO DIOR			DIOR									DIOR			DIOR			MISS.	DIOR	MISS	DIOR
	UTH1 * UTH2 * MOD COL TXT SIZE	DIOR	DIOR	DIOR			VOLC SO DIOR			7.50 DIOR								5.00 MISS	4.27 DIOR			DIOR			MISS.	DIOR	6.71 MISS	57.66 DIOR
1	WIDTH LITHE % LITHZ % MOD COL TXT SIZE	26.00 DIOR	2.00 DIOR D	19.00 DiOR	3.00	15.00	2.00 VOLC SO DIOR	4.00	3.50	7.50	1.00	8.50	4.50	5.00	9.50	3.00	4.50	5.00	4.27	3.35	27.43	5.49 DIOR	16.15	7.01	13.41 MISS	5.79 DIOR	6.71	9979
1	WIDTH LITHE % LITHZ % MOD COL TXT SIZE	26.00 DIOR	2.00 DIOR D	19.00 DiOR	3.00	15.00	2.00 VOLC SO DIOR	4.00	3.50	7.50	1.00	8.50	4.50	5.00	9.50	3.00	4.50	5.00	4.27	3.35	27.43	5.49 DIOR	16.15	7.01	13.41 MISS	5.79 DIOR	6.71	9979
100 100	TO WIDTH UTH1 % UTH2 % MOD COL TXT SIZE	27.00 26.00 DIOR	29.00 2.00 DIOR D	46.00 19.00 DIOR	49.00 3.00	64.00 15.00	66.00 2.00 VOLC S0 DIOR	70.00 4.00	73.50 3.50	81.00 7.50	82.00 1.00	90.50 8.50	95.00 4.50	100.00	109.50 9.50	112.50 3.00	117.00 4.50	122.00 5.00	7.01 4.27	10.36 3.35	37.79 27.43	43.28 5.49 DIOR	59.43 16.15	66.44 7.01	79.85 13.41 MISS	85.64 5.79 DIOR	92.35 6.71	160.01 67.66
17.00 2000	FR TO WIDTH UTH! % UTH? % MOD COL TXT SIZE	27.00 26.00 DIOR	29.00 2.00 DIOR D	27.00 46.00 19.00 DIOR	46.00 49.00 3.00	49.00 64.00 15.00	66.00 2.00 VOLC S0 DIOR	70.00 4.00	70.00 73.50 3.50	73.50 81.00 7.50	82.00 1.00	90.50 8.50	95.00 4.50	95.00 100.00 5.00	100.00 109.50 9.50	112.50 3.00	117.00 4.50	117.00 122.00 5.00	2.74 7.01 4.27	10.36 3.35	37.79 27.43	43.28 5.49 DIOR	43.28 59.43 16.15	59.43 66.44 7.01	66.44 79.85 13.41 MISS	79.85 85.64 5.79 DIOR	85.64 92.35 6.71	92.35 160.01 67.66
1,10, 1,10	FR TO WIDTH UTH1 % UTH2 % MOD COL TXT SIZE	1.00 27.00 26.00 blork	27.00 29.00 2.00 DIOR D	27.00 46.00 19.00 DIOR	46.00 49.00 3.00	49.00 64.00 15.00	64.00 66.00 2.00 VOLC SO DIOR	66.00 70.00 4.00	70.00 73.50 3.50	73.50 81.00 7.50	81.00 82.00 1.00	82.00 90.50 8.50	90.50 95.00 4.50	95.00 100.00 5.00	100.00 109.50 9.50	109.50 112.50 3.00	112.50 117.00 4.50	117.00 122.00 5.00	2.74 7.01 4.27	7.01 10.36 3.35	10.36 37.79 27.43	37.79 43.28 5.49 DIOR	43.28 59.43 16.15	59.43 66.44 7.01	66.44 79.85 13.41 MISS	79.85 85.64 5.79 DIOR	85.64 92.35 6.71	92.35 160.01 67.66
17.00 20.0	SGER FR TO WIDTH UTHI % UTHI % MOD COL TXT SIZE	Halle 1.00 27.00 26.00 DIOR	Halle 27.00 29.00 2.00 DIOR D	Halle 27.00 46.00 19.00 DiOR	Halle 46.00 49.00 3.00	Halle 49.00 64.00 15.00	Halle 64.00 66.00 2.00 VOLC 50 DIOR	Halle 66.00 70.00 4.00	Halle 70:00 73:50 3:50	Halle 73.50 81.00 7.50	Halle 81.00 82.00 1.00	Halle 82.00 90.50 8.50	Halle 90.50 95.00 4.50	Halle 95.00 100.00 5.00	Halle 100.00 109.50 9.50	Halle 109.50 112.50 3.00	Halle 112.50 117.00 4.50	Halle 117:00 122:00 5:00	Halle 2.74 7.01 4.27	Halle 7.01 10.36 3.35	Halle 10.36 37.79 27.43	Halle 37.79 43.28 5.49 DIOR	Halle 43.28 59.43 16.15	Halle 59.43 66.44 7.01	Halle 66.44 79.85 13.41 MSS	Halle 79.85 85.64 5.79 DIOR	Halle 85.64 92.35 6.71	Halle 92.35 160.01 67.66

LITHOLOGY ANDS And									COAREAIN LOGGING CODES 2022						
г		TEXTU	TEXTURES/MODIFIER	COLOUR	JR.			ALTERATION	_	NTENSITY		DESC	DESCRIPTOR	STUR	STURCTURE
	Andestie	₽	TD Textures Destroyed	×	X Extremely Dark G	U	Green	PRO	PRO Propylitic	г	Weak to Moderate	>	V Veins	돐	SH Sheared
APLT Apl	Aplite	<u>a</u>	Porphyritic	۵	Dark	8	Blue	POT	POT Potassic	7	Moderate	۵	D Disseminated	Œ	FR Fractured/Broken
BRXX Bre	Breccia	æ	Fragmental	Σ	Medium	×	Black	품	PHY Phyllic	m	Moderate to Intense	9	VD Veins & Disseminated	쏤	Slickensides
DIOR Dio	Diorite	۳	Tuffaceous	L Light	Light	ם	Buff	AB	Albite	4	Intense	ď	Q Patchy	E	Faulted
DIAB Dia	Jiabase	æ	Brecciated	ď	Mixed	'n	Grey	Ö	Chlorite-Magnetite			S	Selvages/Halos	98	Gougy
DYKE Dyl	Dyke	ర	Clastic			<u> </u>	Pink	Ξ	Hematite-Magnetite			×	X Replacement	쁌	Brittle Fracture
FSPP Fed	Fedspar Porphyry	ы	Glomerophyric			ш	Purple	生	Hornfels			귛	AL Autoliths	క	Crackle Breccia
GABR Gat	Gabbro	≸	Aphanitic			œ	Red	S	Silica			U	C Clotty	ե	Contact
HTBX Hyr	Hyrdrothermal Breccia	M	Mottled					Ç	Clay					ς	Parallel Vein Sets
MISS Mis	Missing Interval	=	IL Interlocking					붐	Chlorite						
MONZ Mo	Monzonite	ᆼ	Chilled					급	Epidote (Skarn)						
MZDR Mo	Monzo-Diorite	ш	Interfingered					M	Magnetite						
MMDR Mic	Micro-monzodiorite	¥	Poikilitic					89	Carbonate						
QFPP Qui	Quartz Feldspar Porphyry	CC	Leucocratic												
NOLC VOI	Volcanic	₽	Aplitic												



Appendix VII – Results of Magnetic Susceptibility Survey (October 2021)

	DEPTH		VT 6 MAC	CHC BEAD	NC.	
HOLF ID	(m)	Nº	RESULT	SUS READI	DATE	NOTES*
CR-08	(m) 5.00	1	0.58	J. Halle	21-Oct-21	Diorite
CR-08	6.50	2	0.09	J. Halle	21-Oct-21	Diorite
CR-08	8.00	3	0.03	J. Halle	21-Oct-21	Diorite
CR-08	9.50	4	1.13	J. Halle	21-Oct-21	Diorite
CR-08	11.00	5	0.84	J. Halle	21-Oct-21	Diorite
CR-08	12.50	6	4.17	J. Halle	21-Oct-21	Diorite
CR-08	14.00	7	0.11	J. Halle	21-Oct-21	Diorite
CR-08	15.50	8	0.46	J. Halle	21-Oct-21	Diorite
CR-08	17.00	9	0.81	J. Halle	21-Oct-21	Diorite
CR-08	18.50	10	0.39	J. Halle	21-Oct-21	Diorite
CR-08	20.00	11	0.37	J. Halle	21-Oct-21	Diorite
CR-08	21.50	12	0.63	J. Halle	21-Oct-21	Diorite
CR-08	23.00	13	3.36	J. Halle	21-Oct-21	Near mineralization
CR-08	24.50	14	0.76	J. Halle	21-Oct-21	
CR-08	26.00	15	0.72	J. Halle	21-Oct-21	Hematite altered
CR-08	27.50	16	0.29	J. Halle	21-Oct-21	Hematite altered
CR-08	29.00	17	2.46	J. Halle	21-Oct-21	
CR-08	30.50	18	16.50	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	32.00	19	3.13	J. Halle	21-Oct-21	
CR-08	33.50	20	7.12	J. Halle	21-Oct-21	
CR-08	35.00	21	18.70	J. Halle	21-Oct-21	unsampled
CR-08	36.50	22	36.70	J. Halle	21-Oct-21	unsampled
CR-08	38.00	23	21.90	J. Halle	21-Oct-21	unsampled
CR-08	39.50	24	1.53	J. Halle	21-Oct-21	unsampled
CR-08	41.00	25	19.40	J. Halle	21-Oct-21	unsampled
CR-08	42.50	26	11.60	J. Halle	21-Oct-21	unsampled
CR-08	44.00	27	14.70	J. Halle	21-Oct-21	unsampled
CR-08	45.50	28	0.71	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	47.00	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	48.50	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	50.00	29	37.60	J. Halle	21-Oct-21	Cpy Vein - unsampled
CR-08	51.50	30	41.40	J. Halle	21-Oct-21	unsampled
CR-08	53.00	31	1.95	J. Halle	21-Oct-21	unsampled
CR-08	54.50	32	17.80	J. Halle	21-Oct-21	unsampled
CR-08	56.00	33	47.60	J. Halle	21-Oct-21	unsampled
CR-08	57.50	34	31.30	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	59.00	35	29.90	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	60.50	36	52.00	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	62.00	37	13.20	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	63.50	38	0.70	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	65.00	39	7.22	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	66.50	40	1.27	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	68.00	41	42.60	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	69.50	42	49.20	J. Halle	21-Oct-21	
CR-08	71.00	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	72.50	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	74.00	43	50.70	J. Halle	21-Oct-21	unsampled
CR-08	75.50	44	52.00	J. Halle	21-Oct-21	unsampled
CR-08	77.00	45	58.60	J. Halle	21-Oct-21	unsampled
CR-08	78.50	46	47.30	J. Halle	21-Oct-21	unsampled
CR-08	80.00	47	44.10	J. Halle	21-Oct-21	unsampled
CR-08	81.50	48	42.60	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	83.00	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	84.50	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	86.00	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	87.50	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	89.00	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	91.00	49	27.50	J. Halle	21-Oct-21	unsampled
CR-08	92.00	50	30.50	J. Halle	21-Oct-21	unsampled
CR-08	93.50	51	40.10	J. Halle	21-Oct-21	unsampled
CR-08	95.00	52	0.40	J. Halle	21-Oct-21	Cpy Vein - unsampled
CR-08	96.50	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	98.00	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	99.50	N/A	N/A	J. Halle	21-Oct-21	box missing
CR-08	101.00	53	4.14	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	102.50	54	17.70	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	104.00	55	31.60	J. Halle	21-Oct-21	unsampled
CR-08	105.50	56	22.80	J. Halle	21-Oct-21	unsampled
CR-08	107.00	57	22.80	J. Halle	21-Oct-21	unsampled
CR-08	108.50	58	9.03	J. Halle	21-Oct-21	unsampled
CR-08	110.00	59	0.53	J. Halle	21-Oct-21	unsampled
CR-08	111.50	60	5.32	J. Halle	21-Oct-21	unsampled
CR-08	113.00	61	0.52	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	114.50	62	42.20	J. Halle	21-Oct-21	sampled - mineralized?
CR-08	116.00	63	25.20	J. Halle	21-Oct-21	end of available core - unsampled

^{* &#}x27;sampled' and 'unsampled' referes to previous geochemical analysis

	DEPTH		KT-6 MAG	SUS READI	NG	
HOLE ID	(m)	Nº	RESULT	SAMPLER	DATE	NOTES*
MM-25	2.74	64	4.70	J. Halle	21-Oct-21	
MM-25	4.57	65	3.20	J. Halle	21-Oct-21	
MM-25 MM-25	6.10 7.62	66 67	9.75 16.50	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	9.14	68	14.80	J. Halle	21-Oct-21	
MM-25	10.67	69	10.00	J. Halle	21-Oct-21	
MM-25	12.19	70	2.29	J. Halle	21-Oct-21	
MM-25	13.72	71	8.11	J. Halle	21-Oct-21	
MM-25 MM-25	15.24 16.76	72 73	6.32 17.80	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	18.29	74	14.30	J. Halle	21-Oct-21	
MM-25	19.81	75	20.10	J. Halle	21-Oct-21	
MM-25	21.33	76	4.98	J. Halle	21-Oct-21	
MM-25	22.86	77	9.92	J. Halle	21-Oct-21	
MM-25 MM-25	24.38 25.91	78 79	10.00 15.00	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	27.43	80	3.43	J. Halle	21-Oct-21	
MM-25	28.95	81	17.40	J. Halle	21-Oct-21	
MM-25	30.48	82	5.12	J. Halle	21-Oct-21	
MM-25	32.00	83	13.90	J. Halle J. Halle	21-Oct-21	
MM-25 MM-25	33.53 35.05	84 85	9.23 1.18	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	36.57	86	5.29	J. Halle	21-Oct-21	
MM-25	38.10	87	15.00	J. Halle	21-Oct-21	
MM-25	39.62	88	8.98	J. Halle	21-Oct-21	
MM-25	41.15	89	17.00	J. Halle J. Halle	21-Oct-21	
MM-25 MM-25	42.67 44.19	90 N/A	13.70 N/A	J. Halle J. Halle	21-Oct-21 21-Oct-21	box missing
MM-25	45.72	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	47.24	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	48.77	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25 MM-25	50.29 51.81	N/A N/A	N/A N/A	J. Halle J. Halle	21-Oct-21 21-Oct-21	box missing
MM-25 MM-25	53.34	N/A	N/A N/A	J. Halle J. Halle	21-Oct-21 21-Oct-21	box missing box missing
MM-25	54.86	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	56.39	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	57.91	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25 MM-25	59.43 60.96	91 92	7.90 18.50	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	62.48	93	5.40	J. Halle	21-Oct-21	
MM-25	64.00	94	13.10	J. Halle	21-Oct-21	
MM-25	65.53	95	1.16	J. Halle	21-Oct-21	
MM-25	67.05	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25 MM-25	68.58 70.10	N/A N/A	N/A N/A	J. Halle J. Halle	21-Oct-21 21-Oct-21	box missing box missing
MM-25	71.62	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	73.15	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	74.67	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	76.20	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25 MM-25	77.72 79.24	N/A N/A	N/A N/A	J. Halle J. Halle	21-Oct-21 21-Oct-21	box missing box missing
MM-25	80.77	96	2.37	J. Halle	21-Oct-21	DOX IIIISSIIIIg
MM-25	82.29	97	8.26	J. Halle	21-Oct-21	
MM-25	83.82	98	0.75	J. Halle	21-Oct-21	
MM-25	85.34	99	5.99	J. Halle	21-Oct-21	1
MM-25 MM-25	86.86 88.39	N/A N/A	N/A N/A	J. Halle J. Halle	21-Oct-21 21-Oct-21	box missing box missing
MM-25	89.91	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	91.44	N/A	N/A	J. Halle	21-Oct-21	box missing
MM-25	92.96	100	19.10	J. Halle	21-Oct-21	
MM-25 MM-25	94.48 96.01	101	21.40 14.70	J. Halle J. Halle	21-Oct-21	
MM-25	97.53	102	4.94	J. Halle	21-Oct-21	
MM-25	99.06	104	18.40	J. Halle	21-Oct-21	
MM-25	100.58	105	1.75	J. Halle	21-Oct-21	
MM-25	102.10	106	3.14	J. Halle	21-Oct-21	pie!
MM-25 MM-25	103.63	107	3.58 7.94	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	105.15	108	17.60	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	108.20	110	2.85	J. Halle	21-Oct-21	
MM-25	109.72	111	0.90	J. Halle	21-Oct-21	
MM-25 MM-25	111.25 112.77	112	1.72	J. Halle	21-Oct-21	quartered BQ Core
MM-25 MM-25	112.77	113	13.00 0.33	J. Halle J. Halle	21-Oct-21 21-Oct-21	quartered BQ Core quartered BQ Core
MM-25	115.82	115	22.70	J. Halle	21-Oct-21	quartered BQ Core
MM-25	117.34	116	17.30	J. Halle	21-Oct-21	quartered BQ Core
MM-25	118.87	117	13.40	J. Halle	21-Oct-21	
MM-25	120.39	118	22.10	J. Halle	21-Oct-21	
MM-25 MM-25	121.91 123.44	119	16.30 2.38	J. Halle J. Halle	21-Oct-21 21-Oct-21	quartered BQ Core
MM-25	124.96	121	10.20	J. Halle	21-Oct-21	quartered BQ Core
MM-25	126.49	122	10.60	J. Halle	21-Oct-21	
MM-25	128.01	123	14.00	J. Halle	21-Oct-21	
MM-25	129.53	124	4.01	J. Halle	21-Oct-21	
MM-25 MM-25	131.06 132.58	126	2.36 9.62	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	134.11	127	15.70	J. Halle	21-Oct-21	
MM-25	135.63	128	16.60	J. Halle	21-Oct-21	
MM-25	137.15	129	15.70	J. Halle	21-Oct-21	
MM-25	138.68	130	11.30	J. Halle	21-Oct-21	
MM-25 MM-25	140.20 141.73	131	15.70 18.20	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	143.25	133	13.70	J. Halle	21-Oct-21	
MM-25	144.77	134	13.70	J. Halle	21-Oct-21	
MM-25	146.30	135	17.60	J. Halle	21-Oct-21	
MM-25	147.82	136	16.70	J. Halle	21-Oct-21	
MM-25 MM-25	149.34 150.87	137	16.10 11.40	J. Halle J. Halle	21-Oct-21 21-Oct-21	
MM-25	152.39	139	13.20	J. Halle	21-Oct-21	
MM-25	153.92	140	3.85	J. Halle	21-Oct-21	
NANA DE	155.44	141	8.65	J. Halle	21-Oct-21	
MM-25 MM-25	156.96	142	2.58	J. Halle		End Of Core Boxes