Prospech Limited
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KORSNÄS METALLURGICAL UPDATE

Highlights:

Prospech Limited (ASX:PRS, **Prospech** or **the Company**) is pleased to announce significant progress in metallurgical test work from PT Geoservices Indonesia as part of its ongoing Korsnäs resource development initiatives. This program is being undertaken to determine the best processing route(s) for the Korsnäs Rare Earth Element (**REE**) resource.

A summary of the metallurgical test work program carried out by PT Geoservices and their preliminary findings are set out below. The PT Geoservices Mineralogy Reports are attached for completeness.

Prospech prepared five 20kg composites from dozens of ALS laboratory coarse-rejects comprising material from drill core, the Tailings Storage Facility (**TSF**) and the Lanthanide Concentrate Stockpile (**LnCS**).

These composites were submitted to PT Geoservices for a limited program of fine grinding, WHIMS, HMS, and potentially TSF lead flotation tests. While the REMHub work incurs no direct cost to Prospech, the timeline was required to be accelerated for metallurgical test work.

The five composite samples analysed:

- Two from 2024 drill core
- One from the LnCS
- Two from the TSF

Key Observations:

- Apatite is the dominant REE mineral and is well-liberated
- Monazite observed as inclusions within some apatite grains
- Liberation characteristics favourable for beneficiation

Managing Director Jason Beckton Comments;

"We are very pleased with the initial progress of our metallurgical test work program, a key step in advancing resource development has been results from PT Geoservices in Indonesia. The liberation results of REEs from the apatite fraction, which is the dominant host at Korsnäs, is particularly pleasing.

In parallel with the work being undertaken by PT Geoservices, collaboration with Oulu University, GTK Mintek and GTK ESPO is delivering valuable insights into REE distribution and beneficiation potential."

Current Status:

PT Geoservices – characterisation and mineral upgrading testing on all samples continues.

In addition, the metallurgical test work being conducted in Finland with the financial assistance of the EU REMHub grant continues in parallel with the PT Geoservices program. This work includes mineral processing testing at GTK Mintek and mini-pilot mineral processing testing at University of Oulu. Due to the broad collaborative scope of the REMHub program, Prospech has limited scope to accelerate this work and results are not expected until Q3/Q4 2025.

Proposed Program Acceleration:

In order to accelerate the metallurgical test results, the following program is now being undertaken at the PT Geoservices facility:

- Progress to bench-scale REE concentrate production
- Advance hydrometallurgical extraction of a saleable REE chemical product
- Produce a cleaned lanthanide concentrate sample in Australia.
- Conduct preliminary acid leach and purification testing on this sample

This proposed program acceleration is considered to provide the quickest route to metallurgical results while longer term work in Finland in progress.

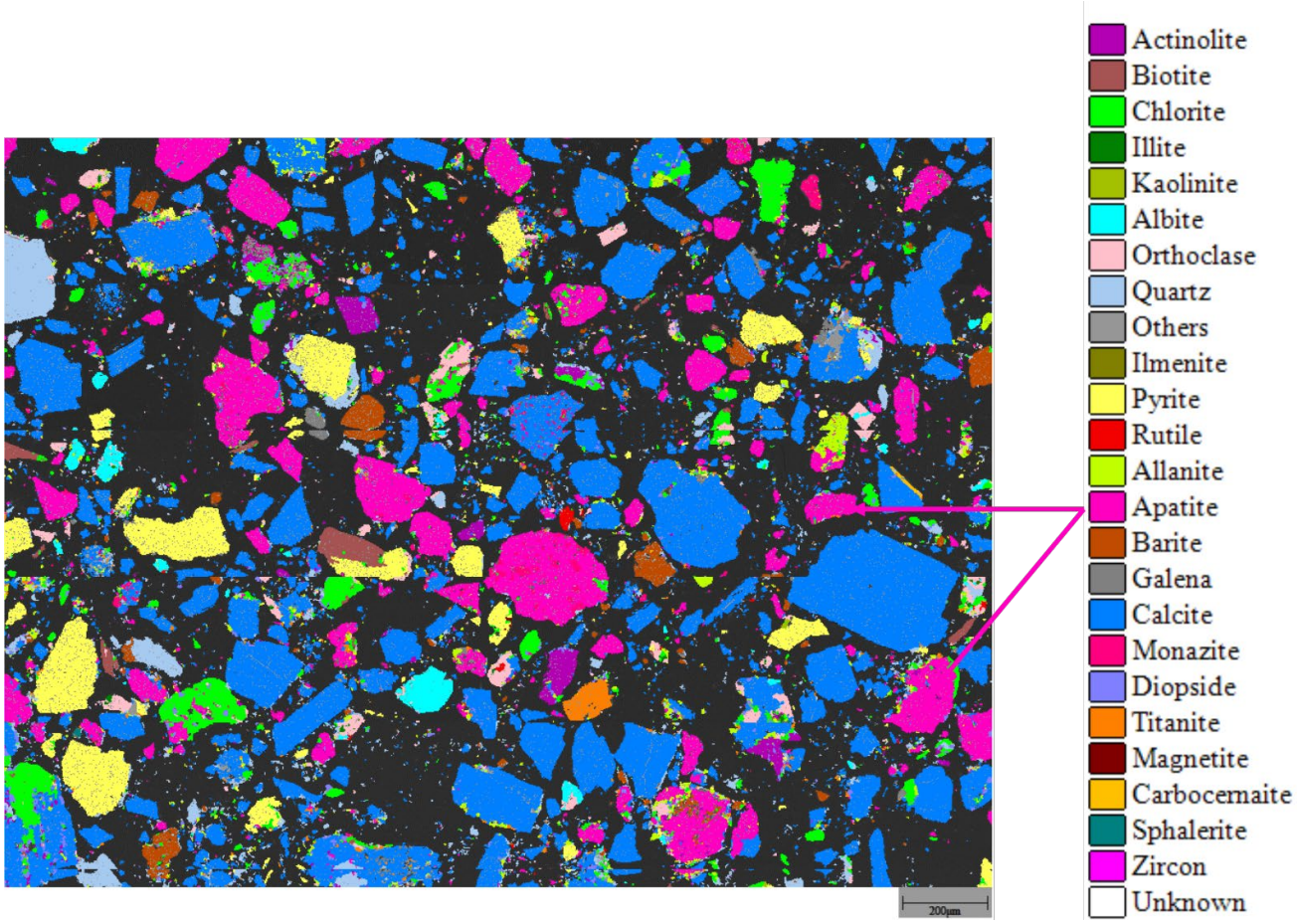

Figure 1. SEM/AMICS Mineral Image of the Polished Resin Mount. Sample ID - LNCS Composite_HG.

REMHub Consortium Participation

The metallurgical program is part of the REMHub consortium, where Prospech, through its subsidiary Bambra Oy, is a contributing member. This collaborative initiative accelerates the development of critical resource projects. Workstreams under the REMHub program are summarised below.

Parallel Finland based hardrock and tailings metallurgical test work

GTK ESPO (Finnish Government) completed **Laser Induced Breakdown Spectroscopy (LIBS)** scanning on-site. This cutting-edge, non-destructive scanning technology identifies, quantifies, and classifies elemental and mineral composition.

Prospech has selected 23 core boxes containing 1/2 core samples from recent drilling, which are undergoing scanning. These results will provide insights into REE mineral distribution across the sampled intervals, guiding further metallurgical studies.

GTK Mintec requires 100kg of drill core to perform comprehensive metallurgical test work. The planned scope includes mineral characterisation, crushing and flotation recovery tests on REE mineralised hard rock material.

TSF and LnCS metallurgical test work

Oulu University is undertaking crushing and flotation tests on TSF and LnCS samples. Key material requirements include:

- 100kg of samples from for TSF and LnCS
- 60kg of tailings material, already drilled and ready for dispatch

In addition, bulk density data has been collated and used to complete the current hard rock Mineral Resource Estimate (MRE).

Shipped material for initial no destructive test work to GTK Helsinki:

Table 1. Available diamond sampled for metallurgical sampling, initially non destructive testwork, followed by standard crushing and floatation testwork. Note Lithology use of the term 'karsi' – generally alteration associated with Rare Earth hosting carbonatite zones as per logging of the sequence since the 1950s that PRS has adopted.

Hole_ID	From	To	Samples	Metres	Boxes	Weight (kg) 1/2 core	Weight (kg) rejects	Lithology	TREO	NdPrO	NdPrO enrich
KR-305	43	50.1	8	7.1	3	15	7	karsi + klk	6423	1845	29%
KR-306	164.08	179.52	17	16.44	5	65	32	karsi + klk	18301	3251	18%
KR-306	211	216	5	5	2	21	10	altered gn	10522	1822	17%
KR-307	95	108.75	12	13.75	4	34	17	karsi + fault zone	5654	1079	19%
KR-308	82	91	9	9	3	18	9	karsi	5834	1493	26%
KR-309	134	146	13	13	4	52	26	mixture of gn/klk/karsi	19400	3567	18%
KR-310	98	104.5	7	6.5	2	26	13	Karsi/gn/klk - mainly gn	3295	680	21%
Total			71	70.79	23	229.7	114.85				

Table 2. Tailings Storage facility samples being prepared for dispatch to Oulu Mining School as per above test work program. In the case of the Lanthanide Dump Auger drilling has been completed only and material may be bulk sampled from excavator use, subject to permitting in the near future.

No_Holes	Series	No_Samples	Weight [kg]	Note
57	TSF	523	1100	Rejects
7	M-TSF	62	135	Fresh samples

About Prospech Limited

Founded in 2014, the Company focuses on mineral exploration in Finland and Slovakia, with a mission to discover, define, and develop critical elements deposits containing metals such as rare earths, lithium, cobalt, copper, silver, and gold. Prospech is actively positioning itself to contribute to Europe's mobility revolution and energy transition. With a strong portfolio of prospective base and precious metals projects in Slovakia, and the recent focus on rare earth element (REE) projects in Finland, the Company is strategically aligned with the increasing demand for locally sourced minerals in Eastern and Northern Europe, regions that are highly supportive of mining. As demand for these critical elements grows, Prospech aims to become a leading player in the European market.

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This announcement has been authorised for release to the market by the Board of Directors.

Cautionary Statement

The announcement and information, opinions or conclusion expressed in the course of this announcement contains forecasts and forward-looking information. Suh forecasts, projections and information are not a guarantee of future performance, involve unknown risks and uncertainties. Actual results and developments will almost certainly differ materially from those expressed or implied. There are a number of risks, both specific to Prospech, and of a general nature which may affect the future operating and financial performance of Prospech, and the value of an investment in Prospech, including and not limited to title risk, renewal risk, economic conditions, stock market fluctuations, commodity demand and price movements, timing of access to infrastructure, timing of environmental approvals, regulatory risks, operational risks, reliance on key personnel, reserve estimations, cultural heritage risks, foreign currency fluctuations, and mining development, construction and commissioning risk.

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JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section applies to all succeeding sections.)

Criteria	Commentary
Sampling techniques	Diamond core drilling was undertaken or sampled from storage to produce assays. Core was oriented for structural and geotechnical logging where possible in the case of KR305 to 310. This was not possible for the historic core.
Drilling techniques	HQ (63.5mm) diamond core drilling from 8m downhole post mud rotary to pass unsampled till cover. Prior drilling NQ (47.6mm) and BQ (36.4mm) and in minor underground cases AQ (35.3mm - which could not generally be sampled).
Drill sample recovery	Recoveries on the 2024 program averaged over 98%.
Logging	GTK Loppi Drill Core Library - core ordered was reviewed and photographed (dry and wet) after sampling intervals were marked and submitted. No geological logging was completed in pre 2024 core as geological logs from Outokumpu Oy are to a high standard and it was deemed redundant to relog the geology. 2024 KR305 to KR310 program - Holes were logged at the Korsnäs storage facility with RQD recoveries and orientation lines completed for runs. In general, over 80% of core could be orientated. After orientation then structural measurements were then taken at a frequency of at least one per run orientated. A total of 395 Recovery and RQD recordings are taken from KR305 to KR310.
Sub-sampling techniques and sample preparation	GTK Loppi Drill Core Library – Samples are normally 1 metre maximum in regard to half-core. Minimum sample length is 0.20m. Sample intervals marked up when core is returned to core boxes. Geological log then follows and finally dry and wet photography for all core boxes or the entire hole. All samples generated have identification that are registered in internal control spreadsheets. This identification is linked to the name of the hole and interval to which the sample belongs.
Quality of assay data and laboratory tests	Assays were be carried out by ALS, an internationally certified commercial laboratory following standard procedures (ALS method ME-MS81h for REEs). 2024 KR305 to KR310 Program - Duplicates in quarter-core were inserted, both being quarter-core and results have been analysed in the body of this report. Prospech inserted standards and blanks were not used due to the lack of ready availability of suitable reference materials for REEs. ALS has its own system of standard and blanks which were reported to Prospech and showed no issues. This lack was mitigated by the cross referencing a large numbers of samples with readings from a hand-held pXRF analyser. On average the ALS results for La Ce Nd and Pr were ~10% lower than the pXRF readings. It is Prospech's plan to submit pulps and coarse rejects to a second commercial laboratory for additional assaying and comparison of REE concentrations.
Verification of sampling and assaying	2024 KR305 to KR310 Program – Holes KR308 and KR310 twinned holes were drilled and assays. Results show good correspondence between the holes. Rare Earth Oxide values were calculated from chemical formulas and atomic weights.
Location of data points	LIDAR topographical information is available free from the GTK and is used to control the RL collar coordinates for all pre-2024 holes. Mitta OY used an DGPS to survey the collar locations of the 2024 KR305 to KR310 Program in the ETRS-TM35FIN projection (EPSG:3067).
Data spacing and distribution	Drill or pierce point spacing in the plane of the polygons files used to estimate the resource, were also controlled in that drill spacing beyond 120m which would not result in resource blocks being estimated to Inferred Resource. Sample compositing was applied prior to block modelling to 1m composites. Section where previously spaced from 10m in the mine area.
Orientation of data in relation to geological structure	Full core orientation was completed of key mineralised structures but also host or wall rock foliations and cross cutting, unmineralised structures. A total of 314 structural readings were taken from KR305 to KR309. KR310 was vertical and hence not orientated.
Sample security	Samples were sealed securely in double plastic bag and kept in a secure area until despatch to the laboratory by professional courier after being sealed in wooden boxes.

Criteria	Commentary
	 
Audits or reviews	Internal peer review conducted by senior geologists and CP; no third-party audit has yet been undertaken

Section 2 Reporting of Exploration Results

(Criteria in this section applies to all succeeding sections.)

Criteria	Commentary
Mineral tenement and land tenure status	Prospech Limited has 100% interest in Bambra Oy ('Bambra'), a company incorporated in Finland. The laws of Finland relating to exploration and mining have various requirements. As the exploration advances specific filings and environmental or other studies may be required. There are ongoing requirements under Finnish mining laws that will be required at each stage of advancement. Those filings and studies are maintained and updated as required by Prospech's environmental and permit advisors specifically engaged for such purposes. The Company is the manager of operations in accordance with generally accepted mining industry standards and practices. Tenure at Korsnäs comprises 4 tenements (Figure 2): • ML2021:0019 Hagg[1] (182.32 Ha) • ML2025:0020 Hägg 2[3] (185.55 Ha) • ML2024:0087 Hägg 3[2] (167.15 Ha) • ML2024:0103 Petalax[3] (2,995.37 Ha) 1. Granted by TUKES on 7 May 2024. 2. Granted by TUKES on 10 April 2025. If no appeals lodged to Administrative Court, becomes valid on 19 April 2025. 3. Exploration Permit Applications filed with TUKES for handling and granting of Exploration Permits.
Exploration done by other parties	The area of Korsnäs has been mapped, glacial till boulder sampled and drilled by private companies including and Outokumpu Oy.
Geology	The rocks of the Korsnäs deposit can be divided into 5 categories: calcite veins/dikes, skarn, migmatitic gneiss, granitic pegmatite, and strongly altered rocks. The REE reside in the calcite veins/dikes, skarn and strongly altered rocks. The calcite veins/dikes consist primarily of calcite with Sr-Ba feldspars, pigeonite pyroxenes, sulphides such as pyrrhotite, galena and pyrite, and REE phases such as bastnäsite and monazite as inclusions and around REE fluorapatite. The skarns consist primarily of diopside pyroxenes with perthitic Sr-Ba feldspar and albite, and sulphides such as pyrrhotite and pyrite. It also contains REE phases in the form of allanite, REE-bearing titanite and apatite. The strongly altered rocks have a wide range of compositions, some of them barren, some strongly enriched in REE. There are magnetite veins containing euhedral monazite crystals, others consist of a chalcedony matrix with REE apatite, monazite and bastnäsite.

Criteria	Commentary
Drill hole Information	Drill Hole Collar Information ETRS-TM35FIN projection (EPSG:3067) below in total 481 drill holes. All significant assays have been reported refer to www.prospech.com.au Below are details of the metallurgical samples dispatched to PT Geoservices. Coordinates have been provided.

Composite Name	Hole_Id	From	To	SampleID
Core Allan	KR-306	164.08	165	M002685
Core Allan	KR-306	165	166	M002686
Core Allan	KR-306	166	167	M002687
Core Allan	KR-306	168	169	M002689
Core Allan	KR-306	171	172	M002692
Core Allan	KR-306	172	173	M002693
Core Allan	KR-306	173	174	M002694
Core Allan	KR-306	174	175	M002695
Core Allan	KR-306	175	176	M002696
Core Allan	KR-306	176	177	M002697
Core Allan	KR-306	177	178	M002698
Core Allan	KR-306	178	179	M002699
Core Allan	KR-306	179	179.52	M002701
Core Allan	KR-306	212	213	M002707
Core Allan	KR-306	215	216	M002710
Core Allan	KR-307	60	61	M002748
Core Allan	KR-307	100	101	M002788
Core Allan	KR-307	101	102	M002789
Core Allan	KR-307	105	107.6	M002793
Core Allan	KR-309	139	140	M002921
Core Allan	KR-309	140	141	M002922
Core Allan	KR-309	141	142	M002923
Core Allan	KR-309	142	143	M002924
Core Allan	KR-309	145	146	M002928
Core Allan	KR-310	99	100	M002956
Core P	KR-305	44	44.5	M002632
Core P	KR-305	44.5	45.1	M002633
Core P	KR-305	45.1	46	M002634
Core P	KR-305	46	47	M002635
Core P	KR-305	49	50.1	M002638
Core P	KR-306	93.8	94.3	M002661
Core P	KR-306	97	98	M002665
Core P	KR-306	101	102	M002669
Core P	KR-306	116.8	117.3	M002676
Core P	KR-307	204	205	M002834
Core P	KR-308	85	86	M002861
Core P	KR-308	86	87	M002862
Core P	KR-308	87	88.7	M002863
Core P	KR-308	88.7	90	M002864
Core P	KR-308	90	91	M002865
Core P	KR-308	104	105	M002880
Core P	KR-308	112.9	113.4	M002889
Core P	KR-309	61	62	M002910
Core P	KR-309	62	63	M002911
Core P	KR-309	125.7	127	M002914
Core P	KR-309	135	136	M002917
Core P	KR-309	136	137	M002918

Criteria	Commentary				
	Core P	KR-309	158.5	159.5	M002931
	Core P	KR-309	159.5	160.5	M002932
	Core P	KR-309	160.5	161.5	M002933
	Core P	KR-309	164.5	165.5	M002937
	Core P	KR-309	167.5	168.5	M002940
	Core P	KR-309	168.5	169.5	M002941
	Core P	KR-309	185	185.5	M002948
	Core P	KR-310	107.4	108	M002965
	Core P	KR-310	114	114.5	M002972
	LnCS	LS-01	1	2	M002540
	LnCS	LS-01	2	3	M002541
	LnCS	LS-01	3	4	M002542
	LnCS	LS-01	4	5	M002543
	LnCS	LS-01	5	6	M002544
	LnCS	LS-01	6	6.7	M002545
	LnCS	LS-02	0.8	1.8	M002547
	LnCS	LS-02	1.8	2.8	M002548
	LnCS	LS-02	2.8	3.8	M002549
	LnCS	LS-02	3.8	4.8	M002550
	LnCS	LS-02	4.8	5.8	M002551
	LnCS	LS-02	5.8	6.8	M002552
	LnCS	LS-03	1	2	M002554
	LnCS	LS-03	2	3	M002555
	LnCS	LS-03	3	4	M002556
	LnCS	LS-03	4	5	M002557
	LnCS	LS-03	5	6	M002558
	LnCS	LS-03	6	6.5	M002559
	LnCS	LS-04	1.1	2.1	M002503
	LnCS	LS-04	2.1	3.1	M002504
	LnCS	LS-04	3.1	4.1	M002505
	LnCS	LS-04	4.1	5.1	M002506
	LnCS	LS-04	5.1	6.1	M002507
	LnCS	LS-04	6.1	7.1	M002508
	LnCS	LS-04	7.1	7.9	M002509
	LnCS	LS-05	0.8	1.8	M002561
	LnCS	LS-05	1.8	2.8	M002562
	LnCS	LS-05	2.8	3.8	M002563
	LnCS	LS-05	3.8	4.8	M002564
	LnCS	LS-05	4.8	5.8	M002565
	LnCS	LS-05	5.8	6.8	M002566
	LnCS	LS-05	6.8	7.8	M002567
	LnCS	LS-06	1	2	M002533
	LnCS	LS-06	2	3	M002534
	LnCS	LS-06	3	4	M002535
	LnCS	LS-06	4	5	M002536
	LnCS	LS-06	5	6	M002537
	LnCS	LS-06	6	7	M002538
	LnCS	LS-07	1	2	M002527
	LnCS	LS-07	2	3	M002528
	LnCS	LS-07	3	4	M002529

Criteria	Commentary				
	LnCS	LS-07	4	5	M002530
	LnCS	LS-07	5	6	M002531
	LnCS	LS-08	1	2	M002519
	LnCS	LS-08	2	3	M002520
	LnCS	LS-08	3	4	M002521
	LnCS	LS-08	4	5	M002522
	LnCS	LS-08	5	6	M002523
	LnCS	LS-08	6	7	M002524
	LnCS	LS-08	7	7.2	M002525
	LnCS	LS-09	1	2	M002511
	LnCS	LS-09	2	3	M002512
	LnCS	LS-09	3	4	M002513
	LnCS	LS-09	4	5	M002514
	LnCS	LS-09	5	6	M002515
	LnCS	LS-09	6	7	M002516
	LnCS	LS-09	7	7.35	M002517
	TSF Allan	TSF07	3	4	0704
	TSF Allan	TSF07	4	5	0705
	TSF Allan	TSF08	4	5	0805
	TSF Allan	TSF08	5	6	0806
	TSF Allan	TSF08A	4	5	08A05
	TSF Allan	TSF08A	5	6	08A06
	TSF Allan	TSF09	3	4	0904
	TSF Allan	TSF09	4	5	0905
	TSF Allan	TSF09	5	6	0906
	TSF Allan	TSF09	6	7	0907
	TSF Allan	TSF10	5	6	1006
	TSF Allan	TSF13	3	4	1304
	TSF Allan	TSF14	3	4	1404
	TSF Allan	TSF14	4	5	1405
	TSF Allan	TSF14A	3	4	14A04
	TSF Allan	TSF14A	4	5	14A05
	TSF Allan	TSF15	3	4	1504
	TSF Allan	TSF15	4	5	1505
	TSF Allan	TSF15	5	6	1506
	TSF Allan	TSF16	3	4	1604
	TSF Allan	TSF16A	3	4	16A04
	TSF Allan	TSF16A	4	5	16A05
	TSF Allan	TSF16A	5	6	16A06
	TSF Allan	TSF19	3	4	1904
	TSF Allan	TSF19	4	5	1905
	TSF Allan	TSF20	3	4	2004
	TSF Allan	TSF20	4	5	2005
	TSF Allan	TSF20A	3	4	20A04
	TSF Allan	TSF20A	4	5	20A05
	TSF Allan	TSF22	5	6	2206
	TSF Allan	TSF24	4	5	2405
	TSF Allan	TSF25	3	4	2504
	TSF Allan	TSF25	4	5	2505
	TSF Allan	TSF25A	1	2	25A02

Criteria	Commentary				
	TSF Allan	TSF25A	4	5	25A05
	TSF Allan	TSF27	3	4	2704
	TSF Allan	TSF27	4	5	2705
	TSF Allan	TSF30	4	5	3005
	TSF Allan	TSF31	4	5	3105
	TSF Allan	TSF32	4	5	3205
	TSF Allan	TSF32	5	6	3206
	TSF Allan	TSF33	3	4	3304
	TSF Allan	TSF33	4	5	3305
	TSF Allan	TSF33	5	6	3306
	TSF Allan	TSF34	3	4	3404
	TSF Allan	TSF36	5	6	3606
	TSF Allan	TSF37	5	6	3706
	TSF Allan	TSF38	4	5	3805
	TSF Allan	TSF38	5	6	3806
	TSF Allan	TSF38	6	7	3807
	TSF Allan	TSF39	2	3	3903
	TSF Allan	TSF39	3	4	3904
	TSF Allan	TSF44	3	4	4404
	TSF Allan	TSF51	0	1	5101
	TSF P	TSF04	0	1	0401
	TSF P	TSF05	1	2	0502
	TSF P	TSF08	0	1	0801
	TSF P	TSF08A	1	2	08A02
	TSF P	TSF13	2	3	1303
	TSF P	TSF15	2	3	1503
	TSF P	TSF16	4	5	1605
	TSF P	TSF18	0	1	1801
	TSF P	TSF18	5	6	1806
	TSF P	TSF23A	4	5	23A05
	TSF P	TSF24	7	8	2408
	TSF P	TSF27	0	1	2701
	TSF P	TSF27	1	2	2702
	TSF P	TSF28	0	1	2801
	TSF P	TSF29	1	2	2902
	TSF P	TSF29	5	6	2906
	TSF P	TSF33	2	3	3303
	TSF P	TSF34	0	1	3401
	TSF P	TSF37	3	4	3704
	TSF P	TSF37	8	9	3709
	TSF P	TSF39	1	2	3902
	TSF P	TSF39	6	7	3907
	TSF P	TSF42	0	1	4201
	TSF P	TSF44	2	3	4403
	TSF P	TSF45	0	1	4501
	TSF P	TSF45	3	4	4504
	TSF P	TSF45	6	7	4507
	TSF P	TSF46	1	2	4602
	TSF P	TSF50	7	8	5008
	TSF P	TSF50	8	9	5009
Data aggregation methods	Composites of 1 m were created prior to interpolation; no grade capping applied in this inferred MRE iteration.				

Criteria	Commentary
Relationship between mineralisation widths and intercept lengths	Nearly all holes were drilled either vertical or east azimuth. And given the vast bulk of pierce points are on structure dipping 45 degrees East with generally shallower dip zones to the East result in some non-orthogonal intercepts.
Diagrams	The location and results received for surface samples are displayed in the attached maps and/or tables. Coordinates are ETRS-TM35FIN projection (EPSG:3067). Figures 3 onwards depict hole locations.
Balanced reporting	Histograms of assay values used in the modelling are reported which include the full range of values.
Other substantive exploration data	Aside from the exploration activities conducted by Prospech and the historical programs undertaken by Outokumpu Oy, both comprehensively documented in this and other technical reports prepared by Prospech, no additional material exploration work is known to have been carried out on the properties.
Further work	Metallurgical test work is underway in the first instance before any further drilling. See report body for more details

Section 3 Estimation and Reporting of Mineral Resources

Criteria	Commentary
Database Integrity	All data was imported into Micromine software. The database was validated using specific processes to verify the existence of the errors including: No assays present in the assay database but present in the collar file (this was common as most holes assayed for lead only. No survey file present – most holes were measured from drafted sections to interpret dip hence the need for the 2024 program to confirm structural interpretations.
Site Visits	Prospech Competent Person have been continuously operating at the project site since April 2023.
Geological interpretation	The geology of the deposits is well understood, supported by a large number of historical drillholes, detailed mine records, and recent drilling. This provides a high level of confidence appropriate for a project at this stage of investigation. The primary data sources are historic drill logs and modern assay results. Key assumptions include conventional interpolation between drillholes, guided by well-defined geological controls, relatively close drill spacing, and modern drilling that validates the historical data. No alternative geological interpretation is currently warranted, as the historical mining data strongly supports a preferred model. Continuity is influenced by factors such as host lithology, ground preparation, fluid composition, and flow dynamics—each of which has been evaluated through mineralogical studies presented in this report.
Dimensions	The mineral resource is spread across 41 separate block model zones as depicted in the body of the text.
Estimation and modelling techniques	NA
Moisture	All samples were dried prior to weighing; no moisture correction was applied, and tonnages are reported as dry
Cut off Parameters	Cut-off parameters have been assessed by the Competent Person with consideration given to a number of material factors including, amongst other matters, the impact of the world and European geopolitical environment on future REE pricing and, given flatter dips confirmed by detailed structural studies completed by Prospech geologists based on the results from the recent drilling campaign completed by the Company, the potential for a partial open pit mining operation at Korsnäs. It is the Competent Person's opinion that, with more exploration and drilling, some amount of the Exploration Target is likely to be converted to a resource estimate. Further, the 41 separately block modelled zones will likely be consolidated to possibly less than 6 contiguous zones with a consequent increase in quality and quantity of the currently reported Inferred MRE. Based on the assumptions adopted by the Competent Person, a theoretical breakeven cut-off grade is indicated between 0.2% and 0.5% TREO. Given these uncertainties, the Competent Person considers that it is reasonable to classify the mineral resource estimate in the Inferred Category and use a cut-off grade of 0.5% TREO for summary reporting purposes of the Inferred MRE in this announcement.
Mining Factors or assumptions	No specific mining method is assumed other than potentially the use of open pit and underground mining methods.
Metallurgical Factors or assumptions	Five composite samples were submitted for SEM-EDS and MLA analysis by PT Geoservices. The samples were selected to represent a range of ore types including TSF, fresh rock, and stockpiled material. SEM-based Mineral Liberation Analysis (MLA) was used to assess modal mineralogy, grain size distribution, and mineral liberation characteristics. The methodology is appropriate for early-stage beneficiation assessments. The samples were selected from across the deposit and processing pathways (TSF, core, Lanthanide Concentrate Stockpile) to provide indicative mineralogical characteristics. No quantitative metallurgical recovery was determined at this stage. SEM/EDS spectra and mineral classification were reviewed by a senior mineralogist. No QA/QC concerns were identified at this stage.

Criteria	Commentary
	Apatite is the dominant REE host mineral and shows good liberation in the samples as presented. Monazite occurs as minor inclusions. Liberation characteristics are favourable for downstream beneficiation options.

PT. GEOSERVICES - MINERALOGY LABORATORY

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MINERALOGY REPORT

SEM MINERALOGICAL TESTING

CIK.MET.02242A

Prepared for:

Bambra Oy

27 April 2025

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Disclaimer

This report has been prepared for the Client by PT. Geoservices – Mineralogy Laboratory. Other parties, at the discretion of the Client may be given access to the report or receive copies of the report, but only in full including this page, the title page and appendices.

PT. Geoservices Ltd has performed the Mineralogy Services reported herein based on the information provided by the Client to PT. Geoservices Ltd and PT. Geoservices Ltd understanding of the Client's requirements.

PT. Geoservices Ltd is not responsible for any loss or damage arising out of any inaccurate, incomplete or misleading information that the Client gives to PT. Geoservices Ltd or any misunderstanding of the Client's requirements by PT. Geoservices Ltd.

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PT. Geoservices Ltd has performed the Mineralogy Services and prepared this Report based only upon the sample material that the Client provided to PT. Geoservices Ltd.

PT. Geoservices was not involved in:

1…….the drilling, collection or transportation of the sampels: and

2…….the handling of the samples prior to their delivery to Geoservices

The results presented in this report pertain only to the samples as received.

MINERALOGY TESTING SUMMARY

Samples

Two received samples from Bambra Oy. The samples contain various compositions of silicates, phosphates, sulfates, carbonates/nitrates, sulfides, and oxides/hydroxides. The Minerals of Interest (MoI) in the analysis are the REE-bearing minerals such as allanite, apatite, carbocernaite, monazite, and zircon. The element of interest include Ca, Ce, La, Nd, P and Si.

TSF "P"_HG

The sample is composed of several main minerals, which are Chlorite (20.1%), Orthoclase (20.1%), Quartz (19.0%), and Calcite (12.8%), based on the SEM automated mineralogy method. The observed Minerals of Interest (MoI) are Apatite, Monazite, and Zircon. Calcium (Ca) concentration in the sample is approximately 6.4wt%, Phosphorus (P) is about 0.3wt%, and Silicon (Si) is found at 22.8wt%. The REEs from this sample might have occurred below the detection limit. Apatite is found majorly well-liberated. Monazite is divided mostly in the categories of locked and well liberated, and minorly ranges in low-grade middlings to medium-grade middlings. Zircon is almost entirely well liberated.

TSF "Allan"_HG

The sample is composed of several main minerals, which are Chlorite (27.8%), Orthoclase (17.4%), Quartz (19.0%), and Allanite (9.3%), based on the SEM automated mineralogy method. Allanite is found predominantly mixing and has less REE containtment. Based on BSE identificantion, Allanite is found in darker color compared to the other samples. The observed Minerals of Interest (MoI) are Allanite, Carbocernaite, Apatite, Monazite, and Zircon. From AMICS calculations, the concentration of rare earth elements (REEs) in the sample is higher than previous sample, with cerium (Ce) at 9103 ppm, and lanthanum (La) at 7258 ppm. Calcium (Ca) concentration in the sample is approximately 6.9wt%, Phosphorus (P) is about 0.4wt%, and Silicon (Si) is found at 21.4wt%. REE are dominantly found in Allanite and Monazite, and very low in Carbocernaite. Allanite and Carbocernaite are predominantly found in locked-low grade middlings, while Monazite is found in high grade middlings, based on the liberation data.

LNCS Composite_HG

The sample is composed of several main minerals, which are Calcite (40.9%), Apatite (16.8%), and Pyrite (12.5%) based on the SEM automated mineralogy method. The observed Minerals of Interest (MoI) are Allanite, Carbocernaite, Apatite, and Monazite. From AMICS calculations, the concentration of rare earth elements (REEs) in the sample is higher than previous sample, with cerium (Ce) at 11168 ppm, lanthanum (La) at 1644 ppm, and Niobium 1989 ppm. Calcium (Ca) concentration in the sample is approximately 23.9wt%, Phosphorus (P) is about 3.6wt%, and Silicon (Si) is found at 6.2wt%. REE are dominantly found in Allanite and Monazite, and very low in Carbonaceite. Calcium content is relatively high at 40.9wt%, due to the presence of abundant calcite in the area captured by the AMICS. In contrast, the silicate content is lower (6.2wt%), indicating low amount of quartz identified. Allanite, Carbocernaite, and Monazite are predominantly found in locked conditions, based on the liberation data.

Modal Mineralogy Summary

SEM/ AMICS Modal Mineralogy

No.	Mineralogy			Samples		
	Mineral Chemical Formula	Phase	Classification	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	Ca2(Mg,Fe)5Si8O22(OH)2	Actinolite	Silicates	0,6	2,3	1,8
2	NaAlSi3O8	Albite	Silicates	6,7	3,4	1,2
3	(Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)	Allanite	Silicates		9,3	2,5
4	$Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$	Apatite	Phosphates	1,7	1,5	16,8
5	BaSO4	Barite	Sulfates	3,9	0,3	3,1
6	K Fe Mg2(AlSi3O10)(OH)2	Biotite	Silicates	7,9	8,1	1,0
7	CaCO3	Calcite	Carbonates	12,8	6,4	40,9
8	(Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O3)2 2H2O	Carbocernaite	Carbonates		0,1	0,1
9	(Mg,Fe)5 (Al,Si)5 O10 (OH)8	Chlorite	Silicates	20,1	27,8	5,6
10	CaMg (SiO3)2	Diopside	Silicates	2,3	9,4	1,4
11	PbS	Galena	Sulfides	0,4	0,6	1,4
12	(K,H3 O) (Al,Mg,Fe)2 (Si,Al)4 O10 [(OH)2,(H2O)]	Illite	Silicates	1,5	2,1	0,1
13	Al2(Si2O5)(OH)4	Kaolinite	Silicates	0,1		
14	Fe3O4	Magnetite	Oxides/Hydroxides		0,1	
15	(Ce,La,Nd) PO4	Monazite	Phosphates	0,1	0,8	2,0
16	KAlSi3O8	Orthoclase	Silicates	20,1	17,4	2,0
17	FeS2	Pyrite	Sulfides	1,5	0,7	12,5
18	SiO2	Quartz	Silicates	19,0	7,9	5,0
19	CaTi(SiO4)O	Titanite	Silicates	0,1	0,3	1,2
20	TiO2	Rutile	Oxides/Hydroxides	0,2	0,4	0,2
21	(Zr,Hf)SiO4	Zircon	Silicates	0,4		
22	Om	Other Minerals		0,8	1,2	0,9
			Total:	**100,0**	**100,0**	**99,9**

XRD Modal Mineralogy

No.	Mineralogy			Samples		
	Mineral Chemical Formula	Phase	Classification	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	NaAlSi3O8	Albite	Silicates	9,8	13,6	3,8
2	(CaLa)(AlAlFe2+)O[Si2O7][SiO4](OH)	Allanite	Silicates	0,5	1,6	1,4
3	Ca5(PO4)3(Cl/F/OH)	Apatite	Phosphates	0,8	0,6	14,2
4	BaSO4	Barite	Sulfates	3,8	2,1	5,6
5	K Fe Mg2(AlSi3O10)(OH)2	Biotite	Silicates	6,1	3,2	0,8
6	CaCO3	Calcite	Carbonates	13,5	11,8	45,0
7	(Ca,Na)(Sr,Ce,Ba)(CO3)2	Carbocernaite	Carbonates	1,6	0,7	2,2
8	(Mg,Fe)5 (Al,Si)5 O10 (OH)8	Chlorite	Silicates	8,4	25,4	5,0
9	CaMg (SiO3)2	Diopside	Silicates	7,4	2,7	0,9
10	PbS	Galena	Sulfides		0,6	1,0
11	H2NaCa2(Mg,Fe)4Al3Si6O24	Hornblende	Silicates	6,2		0,7
12	(K,H3 O) (Al,Mg,Fe)2 (Si,Al)4 O10 [(OH)2,(H2O)]	Illite	Silicates		2,5	
13	Fe3O4	Magnetite	Oxides/Hydroxides		0,8	0,6
14	(Ce,La,Th,Nd) PO4	Monazite	Phosphates		0,7	1,2
15	KAlSi3O8	Orthoclase	Silicates	21,7	21,3	8,1
16	FeS2	Pyrite	Sulfides	0,5	0,5	4,2
17	SiO2	Quartz	Silicates	19,8	11,9	5,4
			Total:	**100,0**	**100,0**	**100,0**

MINERALOGY TESTING SUMMARY

Chemical Assay - AMICS

No.	Sample	Element					
		Ca	Ce	La	Nd	P	Si
1	TSF "P"_HG	6,4				0,3	22,8
2	TSF "Allan"_HG	6,9	0,9	0,7	0,0	0,4	21,4
3	LNCS Composite_HG	23,9	1,1	0,2	0,2	3,6	6,2

Element Deportment

No.	Element	Mineral		Samples		
		Abbreviation	Mineral Phase	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	Ca	Act	Actinolite	0,1	0,3	0,2
2		Aln	Allanite		1,5	0,1
3		Ap	Apatite	0,6	0,6	6,7
4		Cal	Calcite	5,1	2,6	16,2
5		Di	Diopside	0,4	1,7	0,3
6		Ttn	Titanite		0,1	0,2
7		Om	Other minerals	0,2	0,1	0,2
8	Ce	Aln	Allanite		0,7	0,7
9		Mnz	Monazite		0,2	0,4
10		Om	Other minerals			
11	La	Aln	Allanite		0,1	
12		Mnz	Monazite		0,6	0,2
13		Om	Other minerals			
14	Nd	Mnz	Monazite			0,2
15		Om	Other minerals			
16	P	Ap	Apatite	0,3	0,3	3,1
17		Mnz	Monazite		0,1	0,5
18		Om	Other minerals			
19	Si	Act	Actinolite	0,2	0,6	0,5
20		Ab	Albite	2,0	1,0	0,4
21		Aln	Allanite		2,2	0,3
22		Bt	Biotite	1,5	1,6	0,2
23		Chl	Chlorite	2,7	3,8	0,8
24		Di	Diopside	0,6	2,4	0,4
25		Ill	Illite	0,4	0,5	
26		Or	Orthoclase	6,1	5,3	0,6
27		Qz	Quartz	8,9	3,7	2,4
28		Ttn	Titanite		0,1	0,3
29		Zr	Zircon	0,1		
30		Om	Other minerals	0,4	0,2	0,4

Mineral Locking

No.	Sample Code	Condition	Mineral of Interest				
			Allanite	Apatite	Carbocernaite	Monazite	Zircon
1	TSF "P"_HG	Liberated		6,2		15,9	
		Binary		8,1		8,6	
		Ternary		85,7		75,5	100,0
2	TSF "Allan"_HG	Liberated	9,6	16,3		5,6	
		Binary	8,7	10,7	6,1	13,0	
		Ternary	81,8	73,0	93,9	81,3	100,0
3	LNCS Composite_HG	Liberated	4,0	0,9		1,8	
		Binary	3,6	1,8		2,4	
		Ternary	92,4	97,4	100,0	95,8	

Mineral of Interest Liberation

Allanite

No.	Liberation Classes	Surface Area	Sample		
			TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	Locked	< 20%		57,8	63,2
2	Low grade middlings	20 - 40 %		16,2	6,6
3	Medium grade middlings	40 - 60 %		7,0	4,7
4	High grade middlings	60 - 80 %		6,2	15,6
5	Well liberated	80 - 100%		12,8	10,0
		Total:		**100,0**	**100,0**

MINERALOGY TESTING SUMMARY

Apatite

No.	Liberation Classes	Surface Area	Sample		
			TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	Locked	< 20%	3,0	44,1	3,3
2	Low grade middlings	20 - 40 %	0,8	4,5	4,6
3	Medium grade middlings	40 - 60 %	0,9	4,1	11,4
4	High grade middlings	60 - 80 %	7,4	8,6	34,4
5	Well liberated	80 - 100%	87,9	38,7	46,3
		Total:	**100,0**	**100,0**	**100,0**

Carbocernaite

No.	Liberation Classes	Surface Area	Sample		
			TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	Locked	< 20%		81,0	93,2
2	Low grade middlings	20 - 40 %		3,3	5,8
3	Medium grade middlings	40 - 60 %		9,7	1,1
4	High grade middlings	60 - 80 %		0,0	
5	Well liberated	80 - 100%		6,1	
		Total:		**100,0**	**100,0**

Monazite

No.	Liberation Classes	Surface Area	Sample		
			TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	Locked	< 20%	45,7	20,7	61,2
2	Low grade middlings	20 - 40 %	7,1	3,6	6,4
3	Medium grade middlings	40 - 60 %	13,3	0,5	8,8
4	High grade middlings	60 - 80 %		57,5	3,3
5	Well liberated	80 - 100%	34,0	17,7	20,4
		Total:	**100,0**	**100,0**	**100,0**

Zircon

No.	Liberation Classes	Surface Area	Sample		
			TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	Locked	< 20%	1,4	100,0	
2	Low grade middlings	20 - 40 %			
3	Medium grade middlings	40 - 60 %			
4	High grade middlings	60 - 80 %			
5	Well liberated	80 - 100%	98,6		
		Total:	**100,0**	**100,0**	

Size Distribution - P80 in µm

No.	P - Value	Sample		
		TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	P-80	304,5	104,2	170,9
2	P-50	85,8	41,7	100,5
3	P-20	21,3	12,1	45,4

Mineral of Interest Grain Size

Allanite

No.	P - Value	Sample		
		TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	P-80		9,1	20,2
2	P-50		6,1	10,3
3	P-20		4,0	5,8

Apatite

No.	P - Value	Sample		
		TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	P-80	119,6	17,1	147,4
2	P-50	109,8	8,3	87,6
3	P-20	13,0	4,6	44,3

MINERALOGY TESTING SUMMARY

Carbocernaite

No.	P - Value	Sample		
		TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	P-80		12,2	29,5
2	P-50		6,7	26,5
3	P-20		4,9	4,7

Monazite

No.	P - Value	Sample		
		TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	P-80	9,4	49,8	26,1
2	P-50	7,9	45,0	14,4
3	P-20	4,4	5,7	6,0

Zircon

No.	P - Value	Sample		
		TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
1	P-80	61,0	4,5	
2	P-50	58,0	4,3	
3	P-20	54,9	4,1	

Introduction

Project Information

Company:	Bambra Oy
Company Representative:	John Levings
Project:	Metallurgy
Client Reference No :	FS1 - LaCon, TSF - HG,SxS,GE,HLS
Laboratory Job Number:	CIK.MET.02242A
Mineralogist:	Nurarifah Amalian Sari, Hanuladsih Eko Wulan, Nadira Aryanti
Quality Checked:	Ivan Ibrahim
Receipt Date:	26/03/2025
Report Issue Date:	27/04/2025

Project objective is to provide mineralogy characterization of client submitted samples. Report is including sample preparation, chemical result, and SEM mineralogy identification and characterization.

Ivan Ibrahim
Mineralogy Operations

Wayne Turner
Minerals Division

Sample Received

Three samples were received from Bambra Oy on 26th March 2025 through Geoservices Mineral Laboratory. Test was commenced on 19th April 2025 for mineralogy characterization analysis.

Sample Information and Scanning Summary

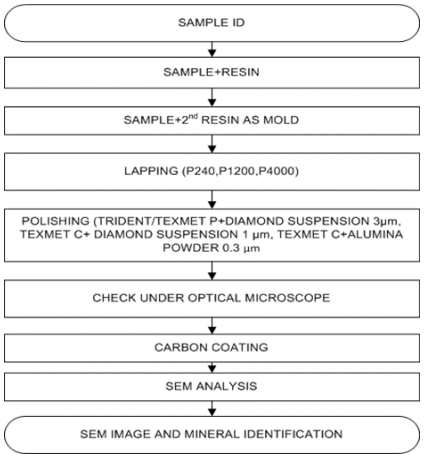
No.	Sample Code	Measurement		Sample Weight (gr)	Analysis Time
		Mode	Scanning		
1	TSF "P"_HG	BMA	Particle	93,7	4 hrs
2	TSF "Allan"_HG			82,7	4 hrs
3	LNCS Composite_HG			80,1	4 hrs

Received Sample

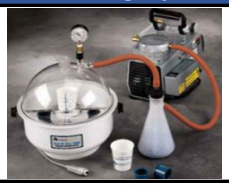
Sample Preparation

Each of the polished mounts were viewed under microscope to confirm that the lapping and polishing were of good quality. A photo of each polished mount was taken and basic mineralogy provided. Photos of the mounted samples provided in PRM Micrographs

Mineralogy Testing Preparation Flowchart



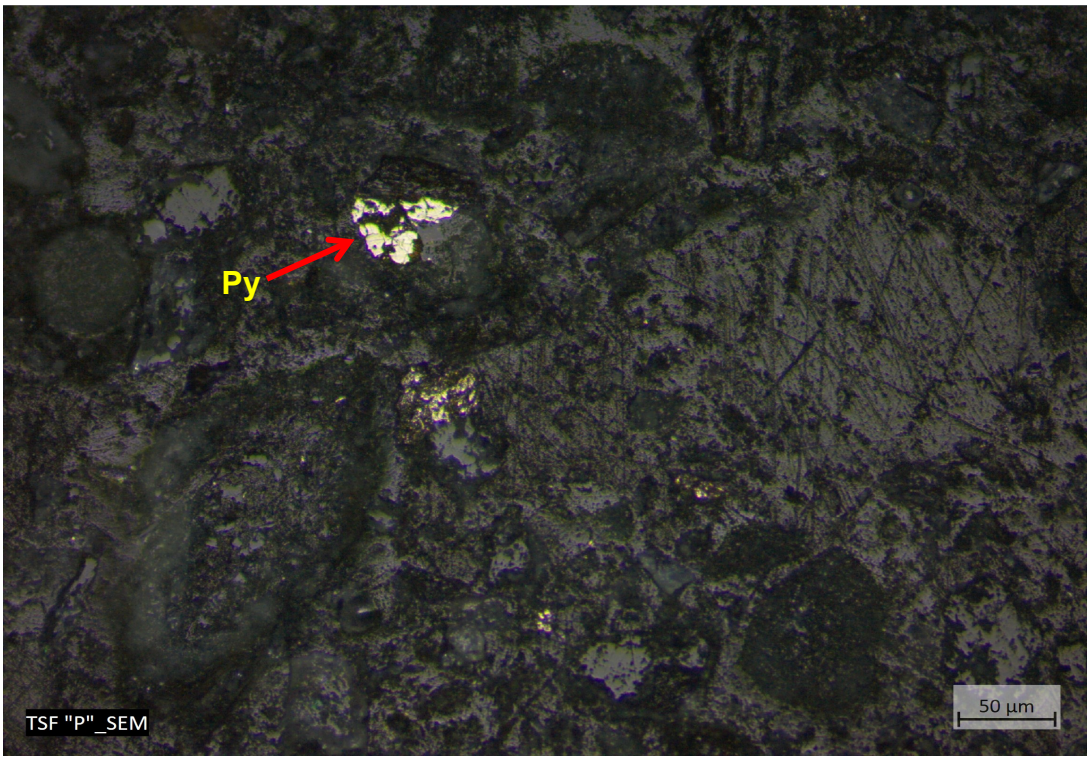
Preparation Equipment

No.	Equipment		Equipment Description
	Unit	Photograph	
1	Buehler Cast n' Vac		Supplied by Buehler the Cast N' Vac, vaccum Impregnation is used to remove entrapped air when encapsulating samples in epoxy. The vacuum pulls air from the mount, displacing it with empoxy to provide complete bonding and support. This maintains sample integrity during abrasive prepartion, reducing chances of cracking or delamination
2	LECOMET Pressure Vessel		Supplied by LECO is used to hardened the impregnated sample. This step used on first and second epoxy mounts. Sample stored inside pressure vessel for 2 days for both mounting phases.
3	Buehler Ecomet 250		Supplied by Buehler the Ecomet 250 is used on the resin blocks prepared to cut back and expose a fresh surface. This surface is progressively fine polished. The final polished mount is viewed under microscope to confirm the quality of preparation and identification of major minerals.
4	SPI Carbon Coater		The carbon coater machine is supplied by SPI. Carbon coating equipment is used to provide a thin layer of carbon to the prepared resin mount. The choice of carbon is popular choice for EDX analysis as the carbon X-ray peak does not interfere other elemental signals.
5	Hitachi FlexSEM1000		The method covers for Scanning Electron Microscope (SEM) equipped with Energy Dispersive Spectrometer (EDS) for elemental analysis. This unit is integrated with AMICS as automated mineralogy system which enables full quantification of mineral and composing elements.

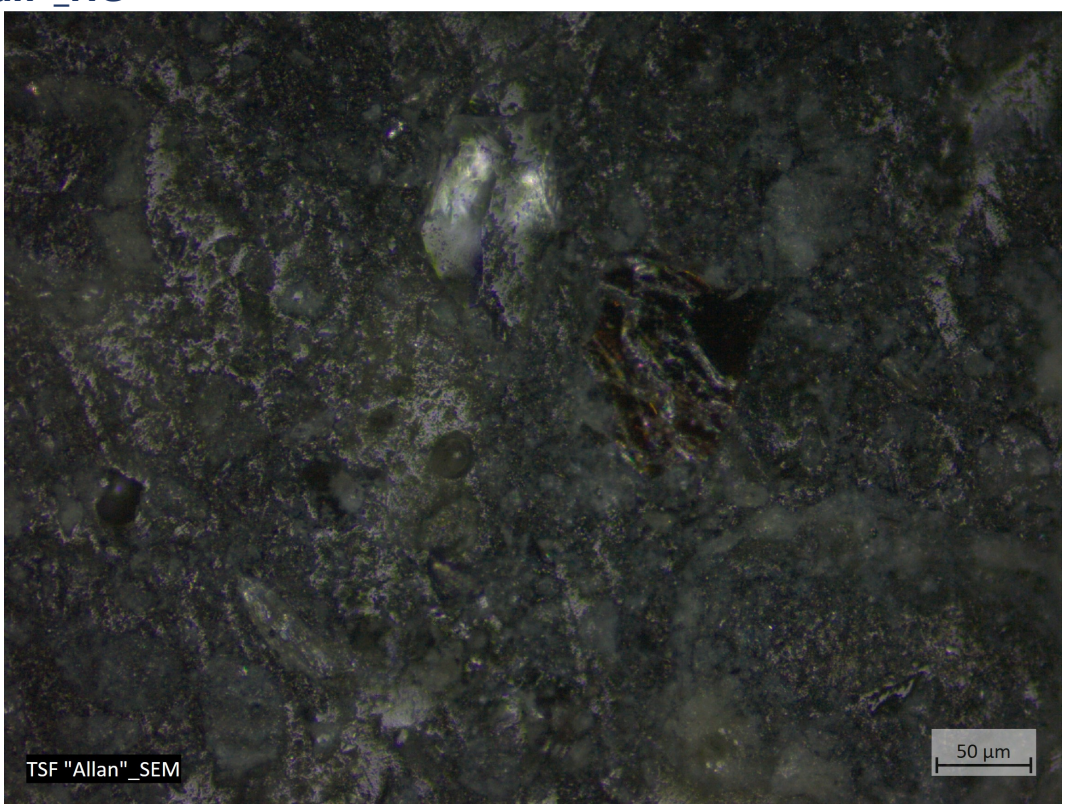
Methods of Analysis

No.	Method	Description
1	SEM Automated Mineralogy	Provide liberation, locking, and size of MoI
2	X-Ray Diffraction (XRD)	Advance mineral identification
3	Induced Coupled Plasma (ICP)	Elemental determination in solution
4	X-Ray Flourscence (XRF)	Major element identification based on element flourscence
5	LECO	Provide total Sulfur of the sample

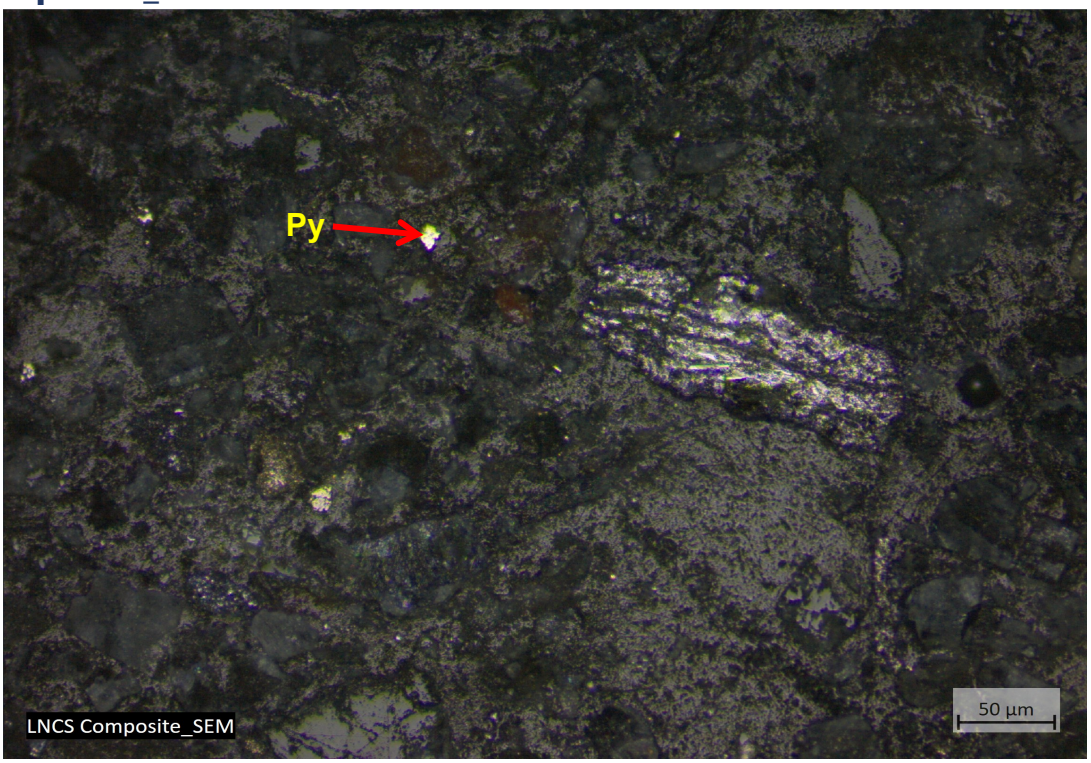
TSF "P"_HG



TSF "Allan"_HG

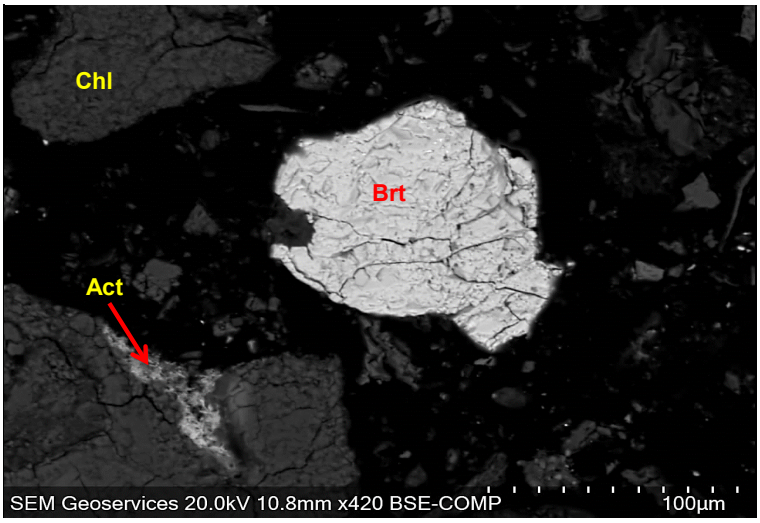


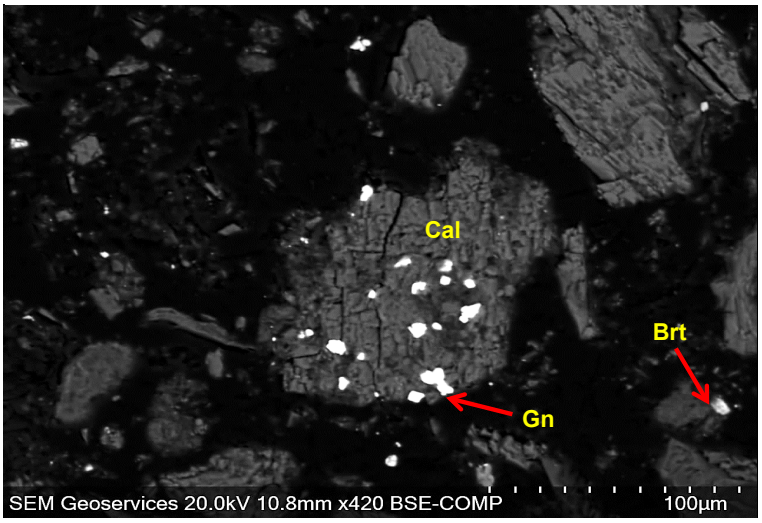
LNCS Composite_HG

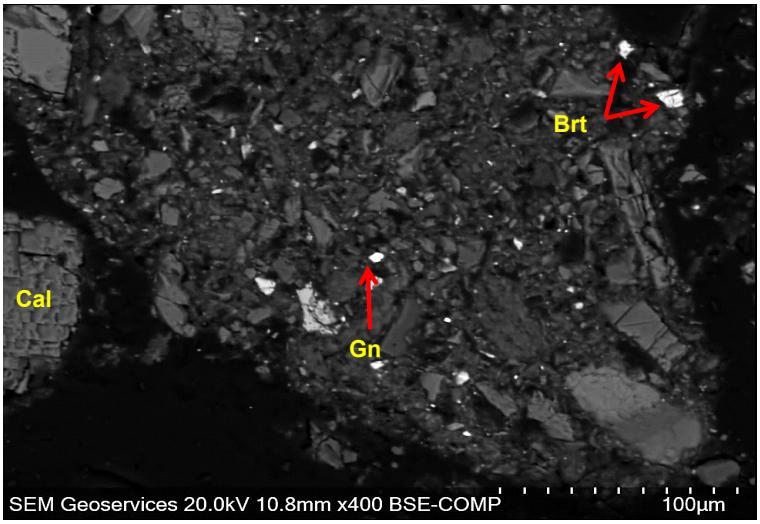


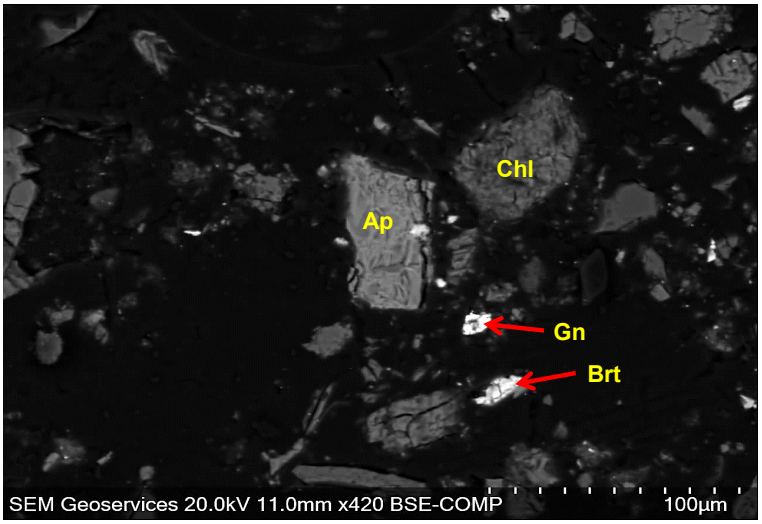
Minerals: Py-Pyrite.

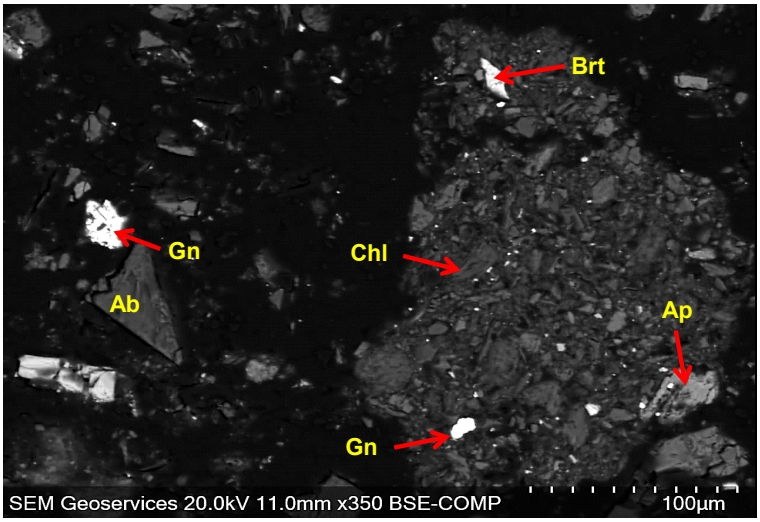
SAMPLE ID TSF "P"_HG

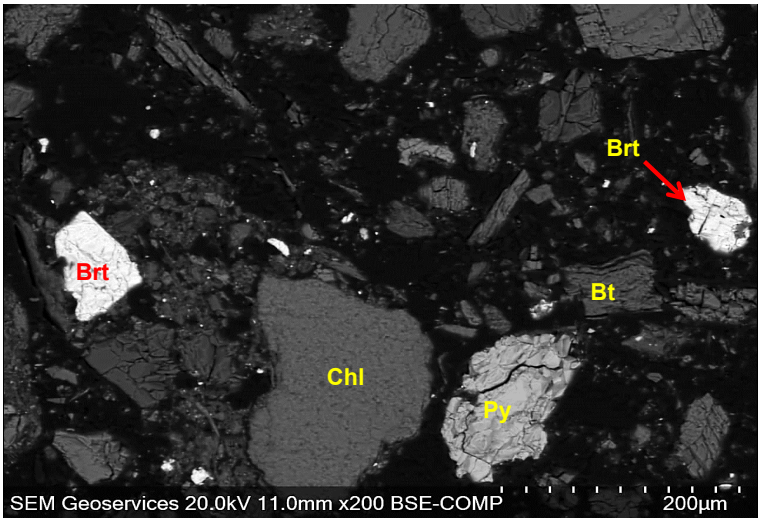






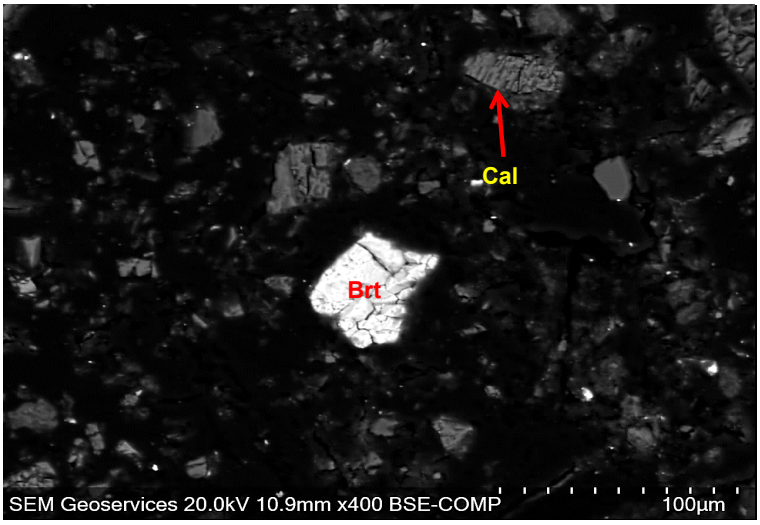


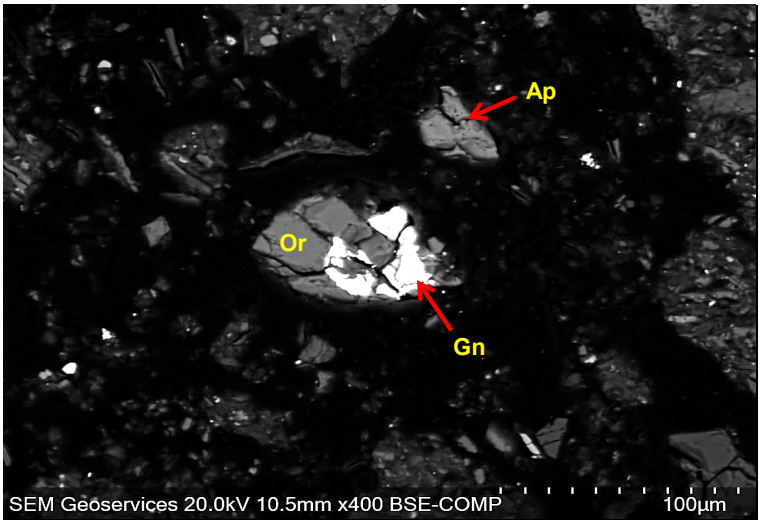


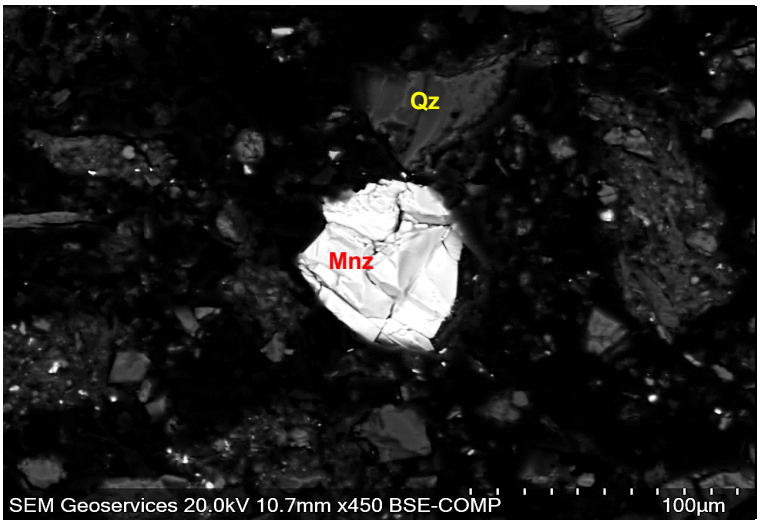


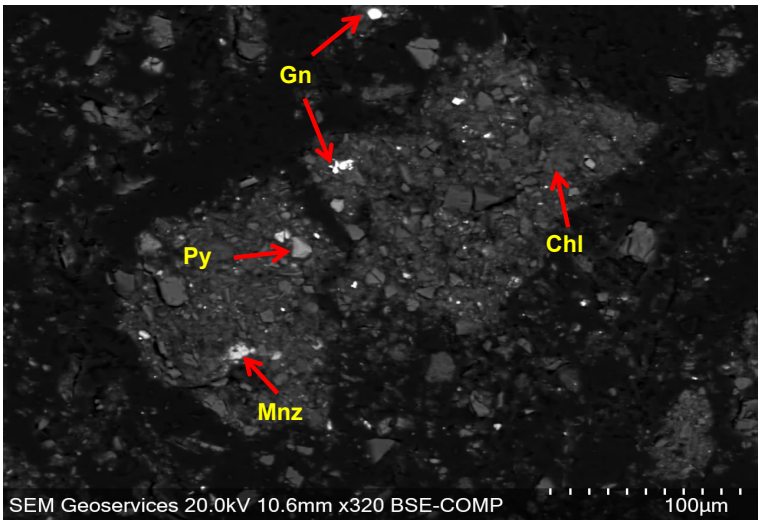
Minerals: Ab-Albite, **Act**-Actinolite, **Ap**-Apatite, **Brt**-Barite, **Bt**-Biotite, **Cal**-Calcite, **Chl**-Chlorite, **Gn**-Galena, **Py**-Pyrite.

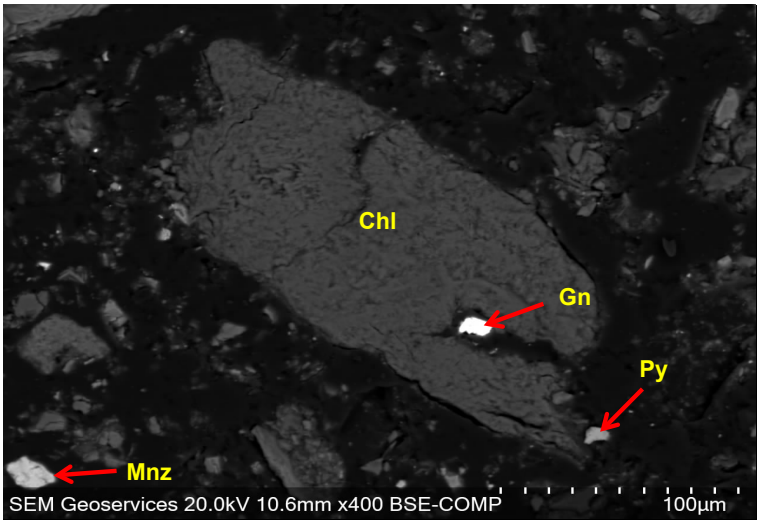
SAMPLE ID **TSF "Allan"_HG**

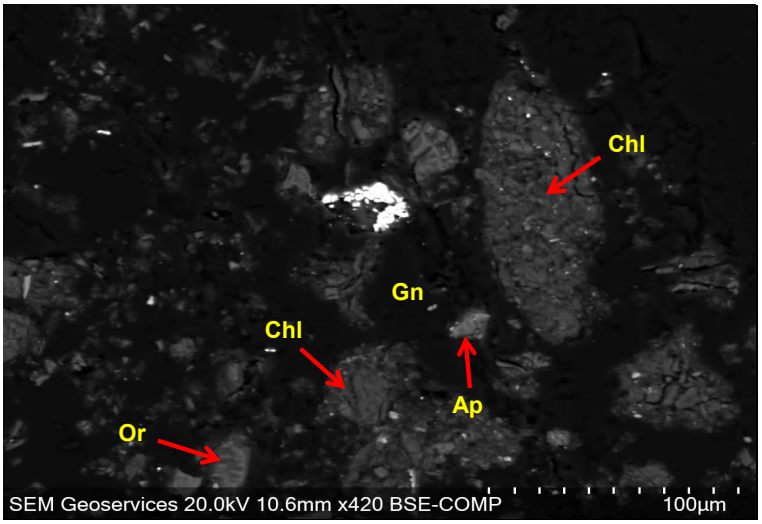








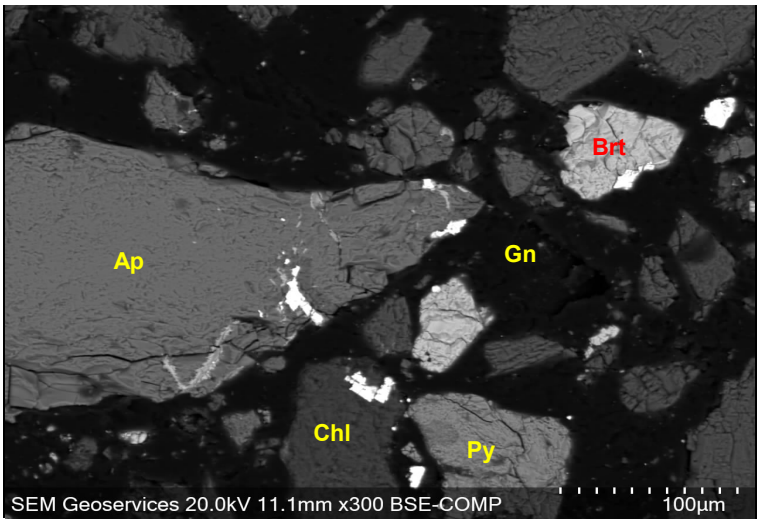


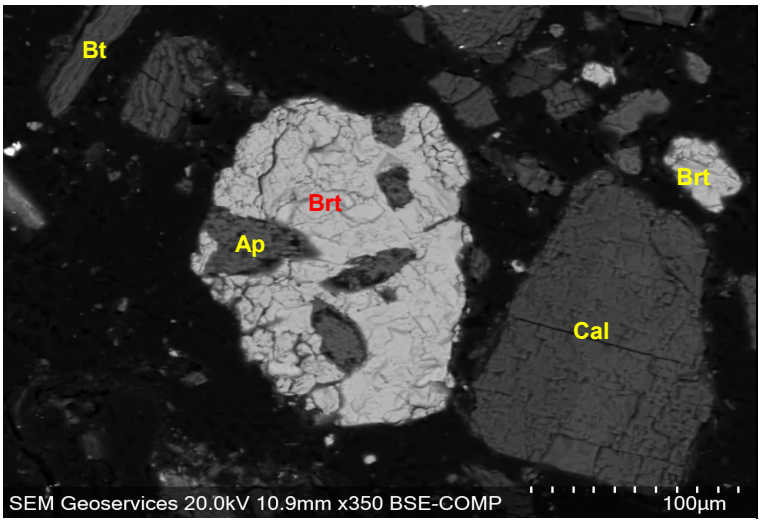


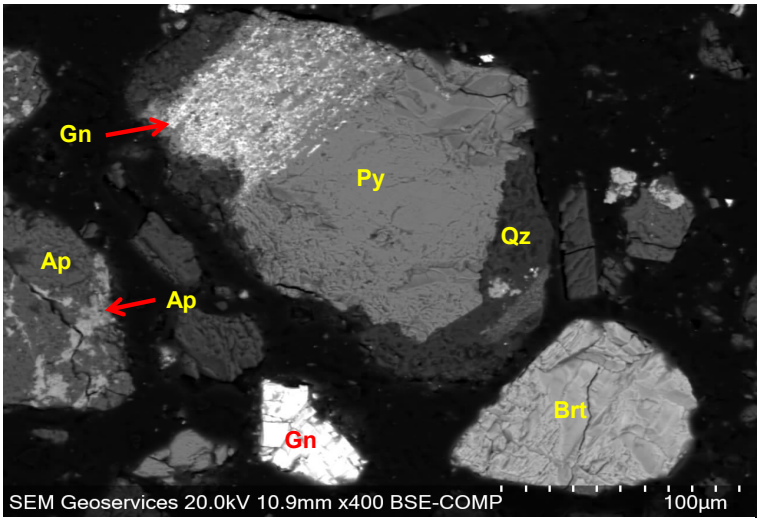
Minerals: Ap-Apatite, **Brt**-Barite, **Cal**-Calcite, **Chl**-Chlorite, **Gn**-Galena, **Mnz**-Monazite, **Or**-Orthoclase, **Py**-Pyrite, **Qz**-Quartz.

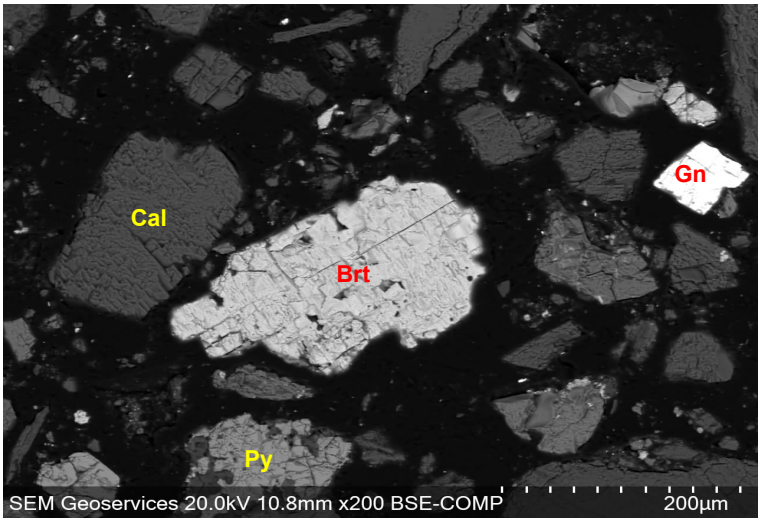
SEM - Backscattered-Electron Imagining

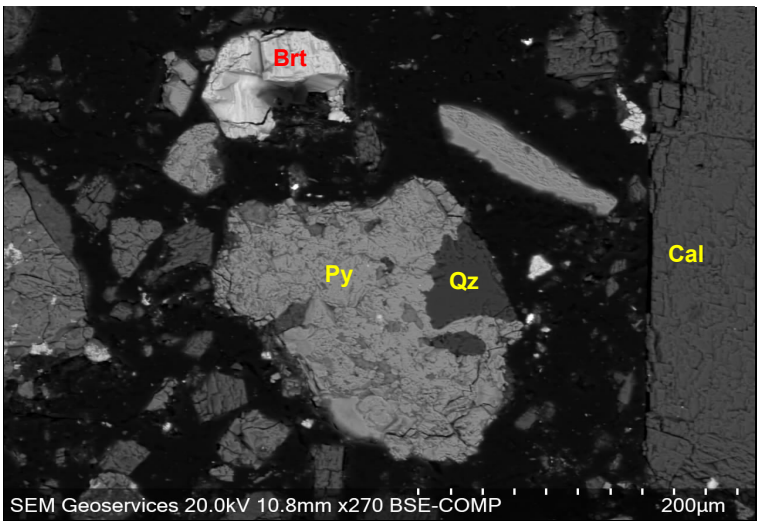
SAMPLE ID **LNCS Composite_HG**

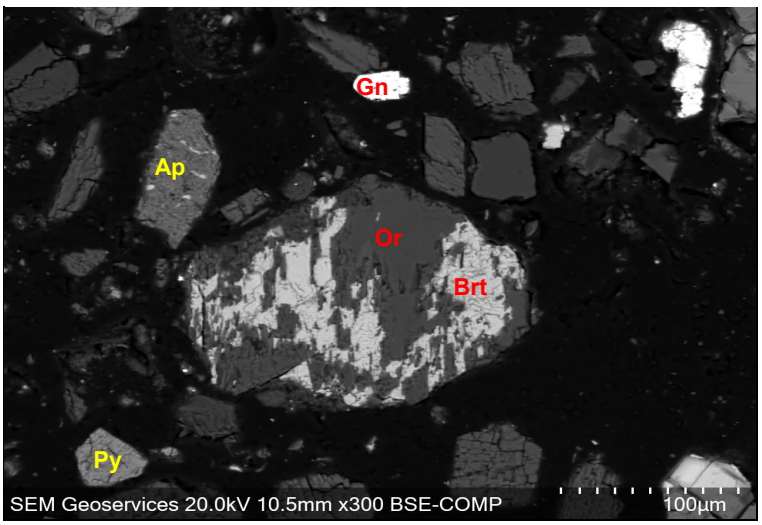








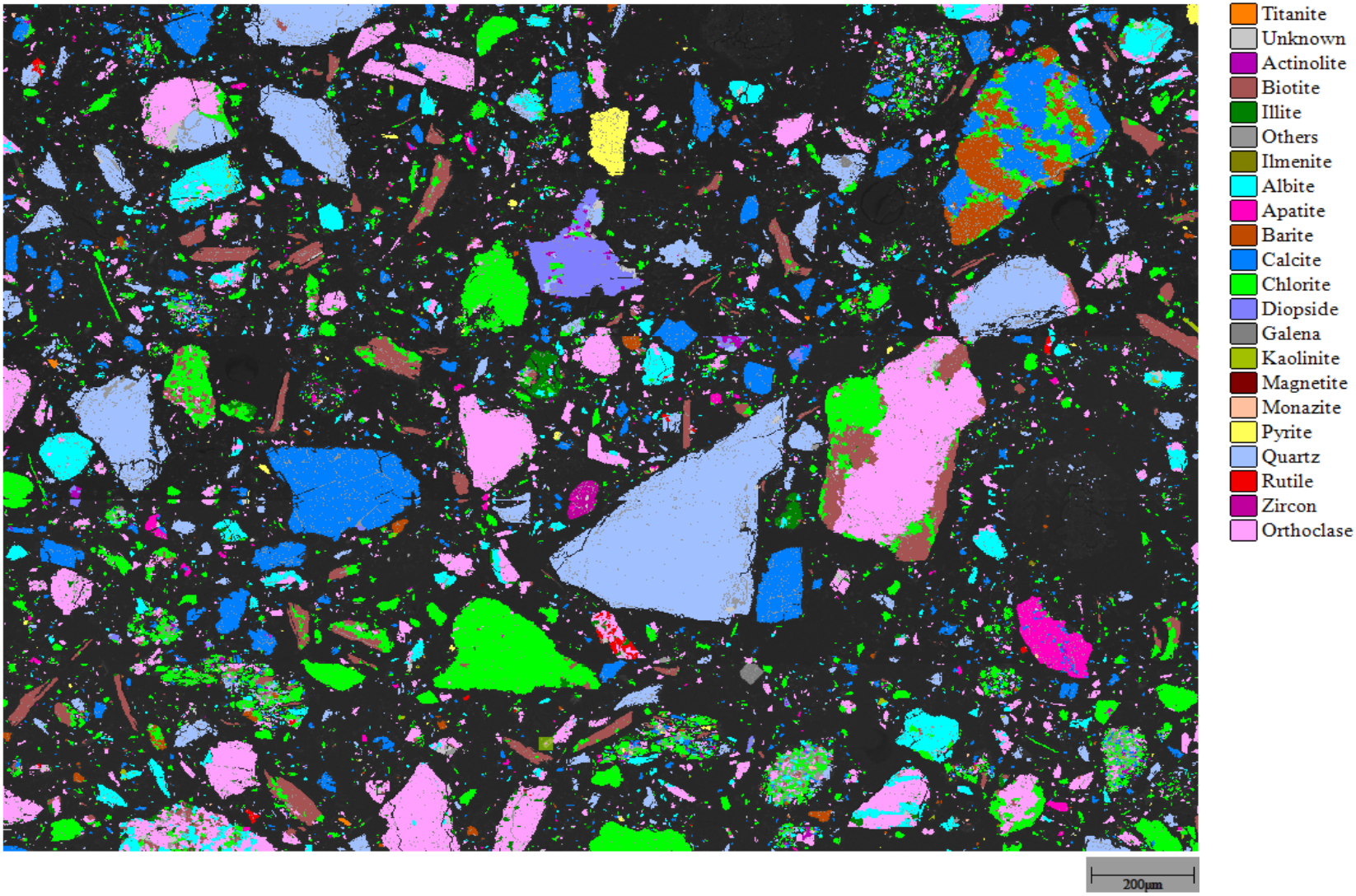




Minerals: Ap-Apatite, **Brt**-Barite, **Bt**-Biotite, **Cal**-Calcite, **Chl**-Chlorite, **Gn**-Galena, **Mnz**-Monazite, **Or**-Orthoclase, **Py**-Pyrite, **Qz**-Quartz.

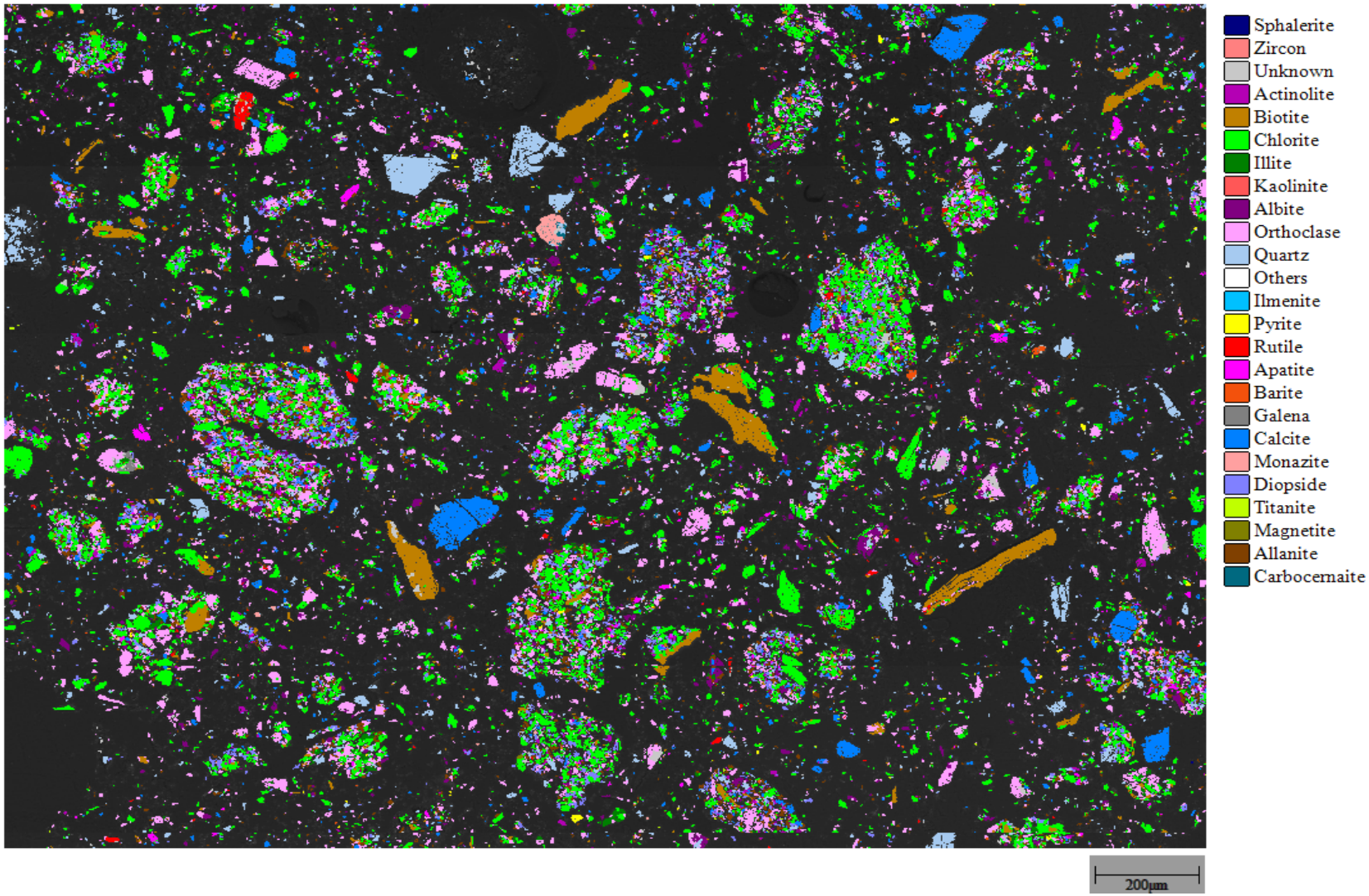
SEM/AMICS Mineral Image of the Polished Resin Mount

Sample ID TSF "P"_HG



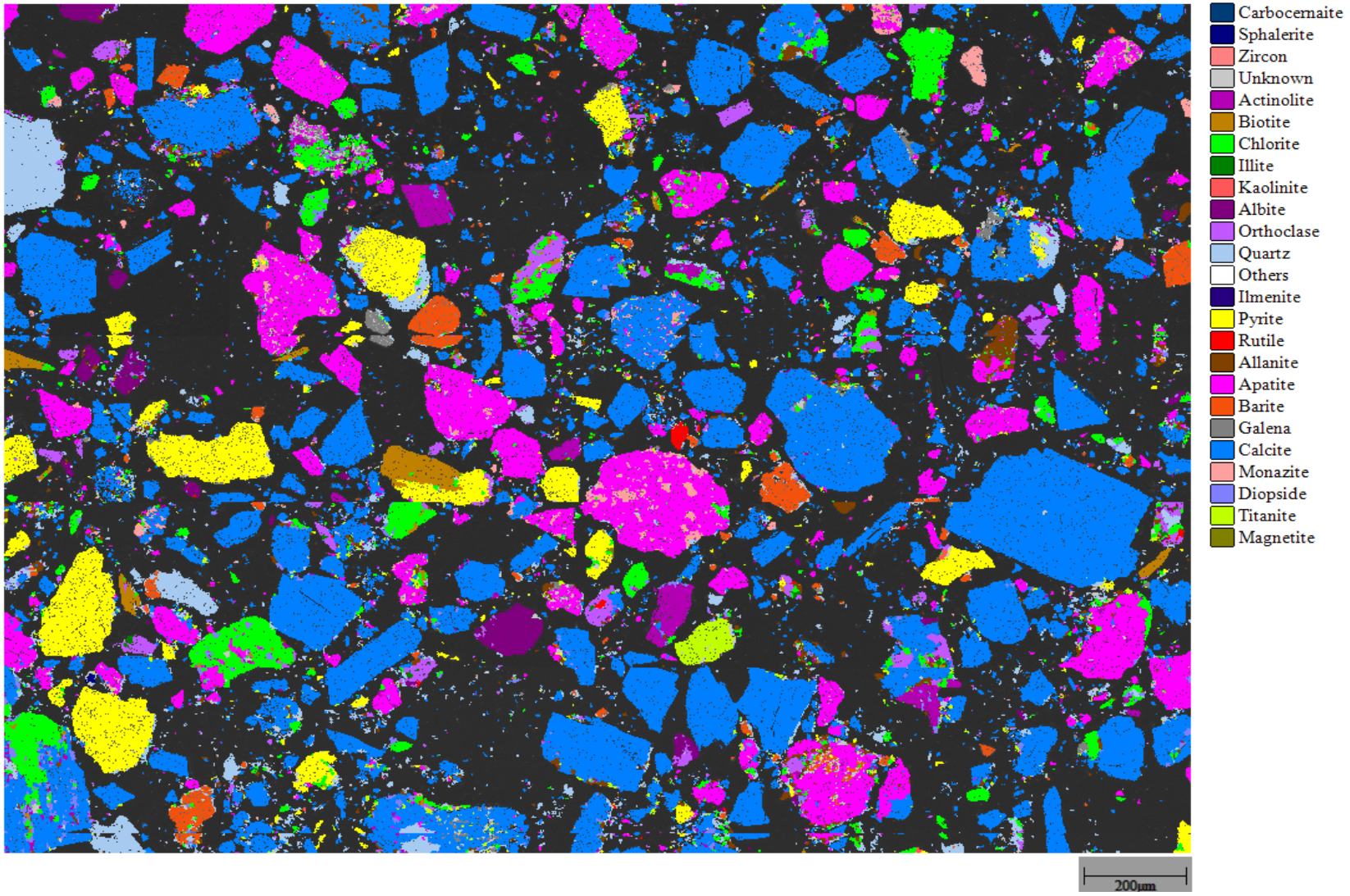
SEM/AMICS Mineral Image of the Polished Resin Mount

Sample ID TSF "Allan"_HG



SEM/AMICS Mineral Image of the Polished Resin Mount

Sample ID LNCS Composite_HG



XRD Result - Phase, Classification, and Grouping

MINERAL PHASE IDENTIFICATION- RIETVELD %

					1	2	3
					RIETVELD REFINEMENT WT%		
Abbreviation	Mineral Phase Identification	Mineral Chemical Formula	Mineral Classification	Mineral Group	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
Ab	Albite	NaAlSi3O8	Silicates	Plagioclase	9,8	13,6	3,8
Aln_La	Allanite	(CaLa)(AlAlFe2+)O[Si2O7][SiO4](OH)	Silicates	Epidote	0,5	1,6	1,4
Ap	Apatite	Ca5(PO4)3(Cl/F/OH)	Phosphates	Apatite	0,8	0,6	14,2
Brt	Barite	BaSO4	Sulfates	Barite	3,8	2,1	5,6
Bt	Biotite	K Fe Mg2(AlSi3O10)(OH)2	Silicates	Mica	6,1	3,2	0,8
Cal	Calcite	CaCO3	Carbonates	Calcite	13,5	11,8	45,0
Cbc	Carbocernaite	(Ca,Na)(Sr,Ce,Ba)(CO3)2	Carbonates	No Group	1,6	0,7	2,2
Chl	Chlorite	(Mg,Fe)5 (Al,Si)5 O10 (OH)8	Silicates	Clay	8,4	25,4	5,0
Di	Diopside	CaMg (SiO3)2	Silicates	Pyroxene	7,4	2,7	0,9
Gn	Galena	PbS	Sulfides	No Group		0,6	1,0
Hbl	Hornblende	H2NaCa2(Mg,Fe)4Al3Si6O24	Silicates	Amphibole	6,2		0,7
Ill_AlMgFe	Illite	(K,H3 O) (Al,Mg,Fe)2 (Si,Al)4 O10 [(OH)2,(H2O)]	Silicates	Clay		2,5	
Mag	Magnetite	Fe3O4	Oxides/Hydroxides	Spinel		0,8	0,6
Mnz_Cltn	Monazite	(Ce,La,Th,Nd) PO4	Phosphates	Monazite		0,7	1,2
Or	Orthoclase	KAlSi3O8	Silicates	K-Feldspar	21,7	21,3	8,1
Py	Pyrite	FeS2	Sulfides	Pyrite	0,5	0,5	4,2
Qz	Quartz	SiO2	Silicates	Quartz	19,8	11,9	5,4
				Total:	**100,0**	**100,0**	**100,0**

MINERAL CLASSIFICATION - SUM OF RIETVELD %

	Column Labels						
Sample ID	Silicates	Oxides/Hydroxides	Sulfates	Phosphates	Sulfides	Carbonates	Grand Total
TSF "P"_HG	79,9		3,8	0,8	0,5	15,1	**100,0**
TSF "Allan"_HG	82,1	0,8	2,1	1,3	1,1	12,5	**100,0**
LNCS Composite_HG	26,0	0,6	5,6	15,5	5,2	47,2	**100,0**

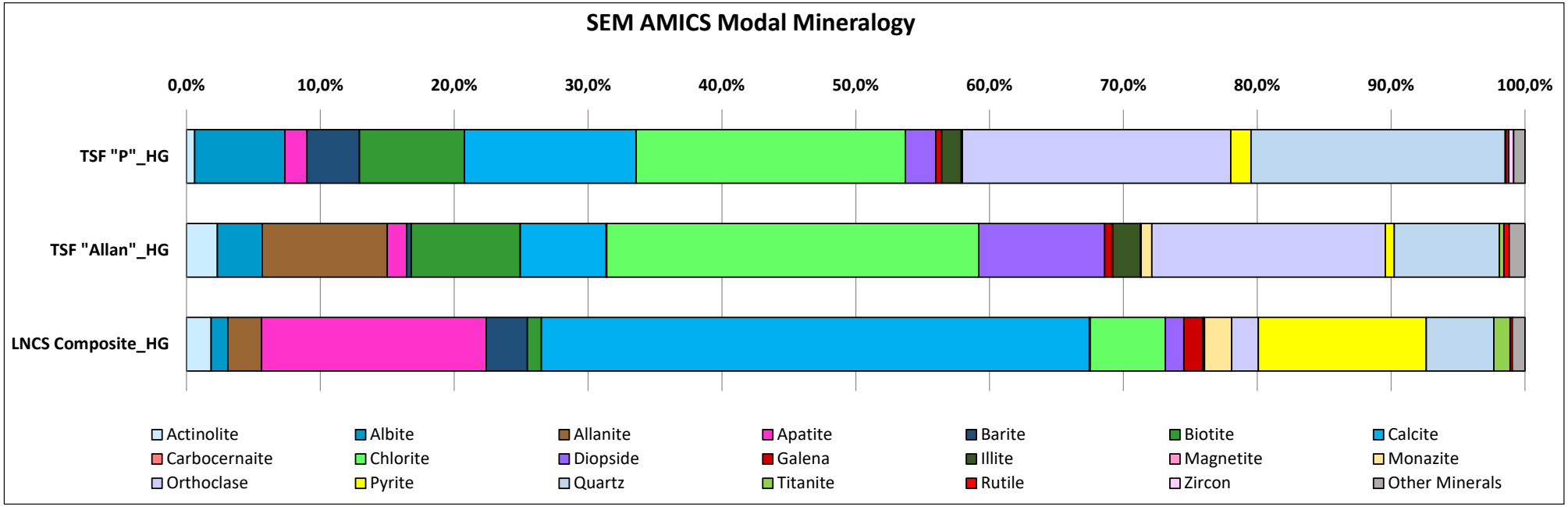
MINERAL GROUPING - SUM OF RIETVELD %

	Column Labels															
Sample ID	Quartz	No Group	Spinel	Plagioclase	Barite	Mica	Calcite	Clay	Pyroxene	Monazite	K-Feldspar	Pyrite	Apatite	Amphibole	Epidote	Grand Total
TSF "P"_HG	19,8	1,6		9,8	3,8	6,1	13,5	8,4	7,4		21,7	0,5	0,8	6,2	0,5	**100,0**
TSF "Allan"_HG	11,9	1,3	0,8	13,6	2,1	3,2	11,8	27,9	2,7	0,7	21,3	0,5	0,6		1,6	**100,0**
LNCS Composite_HG	5,4	3,2	0,6	3,8	5,6	0,8	45,0	5,0	0,9	1,2	8,1	4,2	14,2	0,7	1,4	**100,0**

Mineralogical Report - SEM/AMICS Modal Mineralogy

Abbreviation	Mineral Identification	Mineral Chemical Formula	Mineral Classification	Mineral Group	SAMPLE IDENTIFICATION		
					TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
					Detection Limit AMICS Identification - <0.1%		
Act	Actinolite	Ca2(Mg,Fe)5Si8O22(OH)2	Silicates	Amphibole	0,6	2,3	1,8
Ab	Albite	NaAlSi3O8	Silicates	Plagioclase	6,7	3,4	1,2
Aln_La	Allanite	(Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)	Silicates	Allanite		9,3	2,5
Ap	Apatite	$Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$	Phosphates	Apatite	1,7	1,5	16,8
Brt	Barite	BaSO4	Sulfates	Barite	3,9	0,3	3,1
Bt	Biotite	K Fe Mg2(AlSi3O10)(OH)2	Silicates	Mica	7,9	8,1	1,0
Cal	Calcite	CaCO3	Carbonates	Calcite	12,8	6,4	40,9
Cbc	Carbocernaite	(Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O	Carbonates	No Group		0,1	0,1
Chl	Chlorite	(Mg,Fe)5 (Al,Si)5 O10 (OH)8	Silicates	Clay	20,1	27,8	5,6
Di_Fe	Diopside	CaMg0.46Fe0.52Al0.60Si1.42O6	Silicates	Pyroxene	2,3	9,4	1,4
Gn	Galena	PbS	Sulfides	Galena	0,4	0,6	1,4
Ill	Illite	KAl2Si3AlO10(OH)2	Silicates	Clay	1,5	2,1	0,1
Mag	Magnetite	Fe3O4	Oxides/Hydroxides	Spinel		0,1	
Mnz	Monazite	(Ce,La,Th,Nd) PO4	Phosphates	Monazite	0,1	0,8	2,0
Or	Orthoclase	KAlSi3O8	Silicates	K-Feldspar	20,1	17,4	2,0
Py	Pyrite	FeS2	Sulfides	Pyrite	1,5	0,7	12,5
Qz	Quartz	SiO2	Silicates	Quartz	19,0	7,9	5,0
Ttn	Titanite	CaTi(SiO4)O	Silicates	Titanite	0,1	0,3	1,2
Rt	Rutile	TiO2	Oxides/Hydroxides	Rutile	0,2	0,4	0,2
Zr	Zircon	$(Zr,Hf)SiO_4$	Silicates	Zircon	0,4		
Om	Other Minerals				0,8	1,2	1,0
				Total	**100,0**	**100,0**	**100,0**

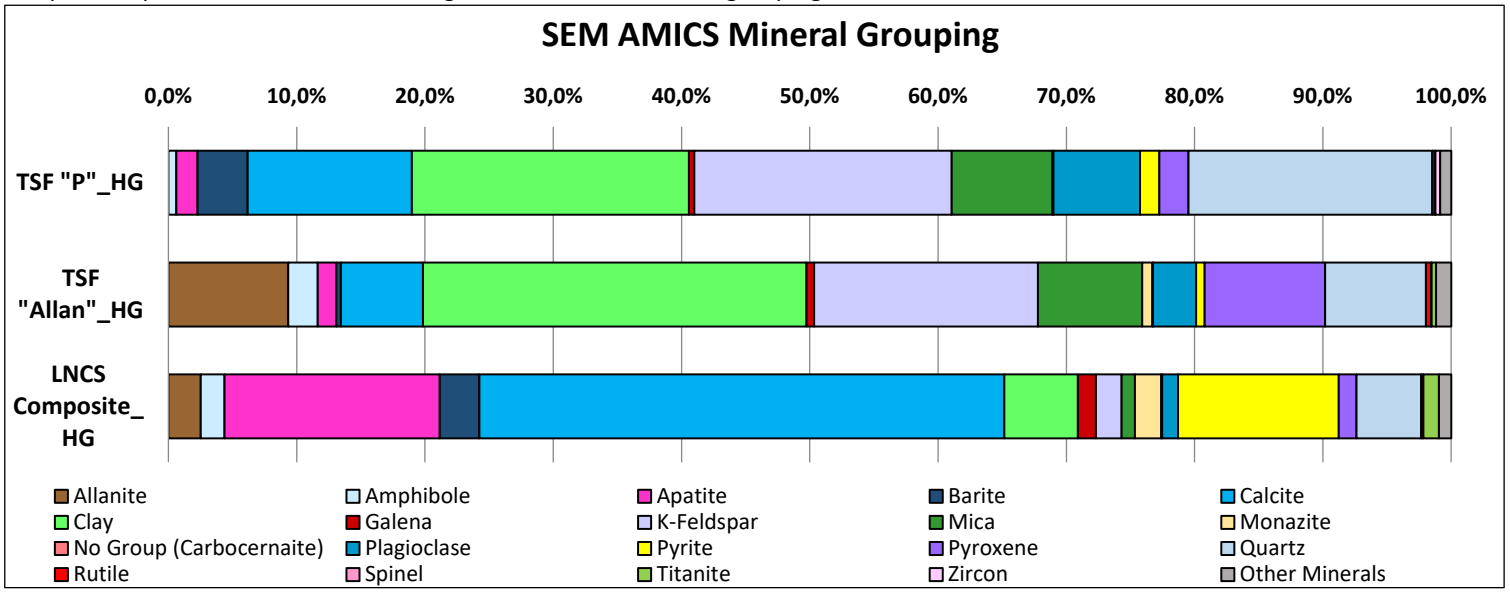
Graphical representation in the following bar chart of the modal mineralogy



Mineral Grouping

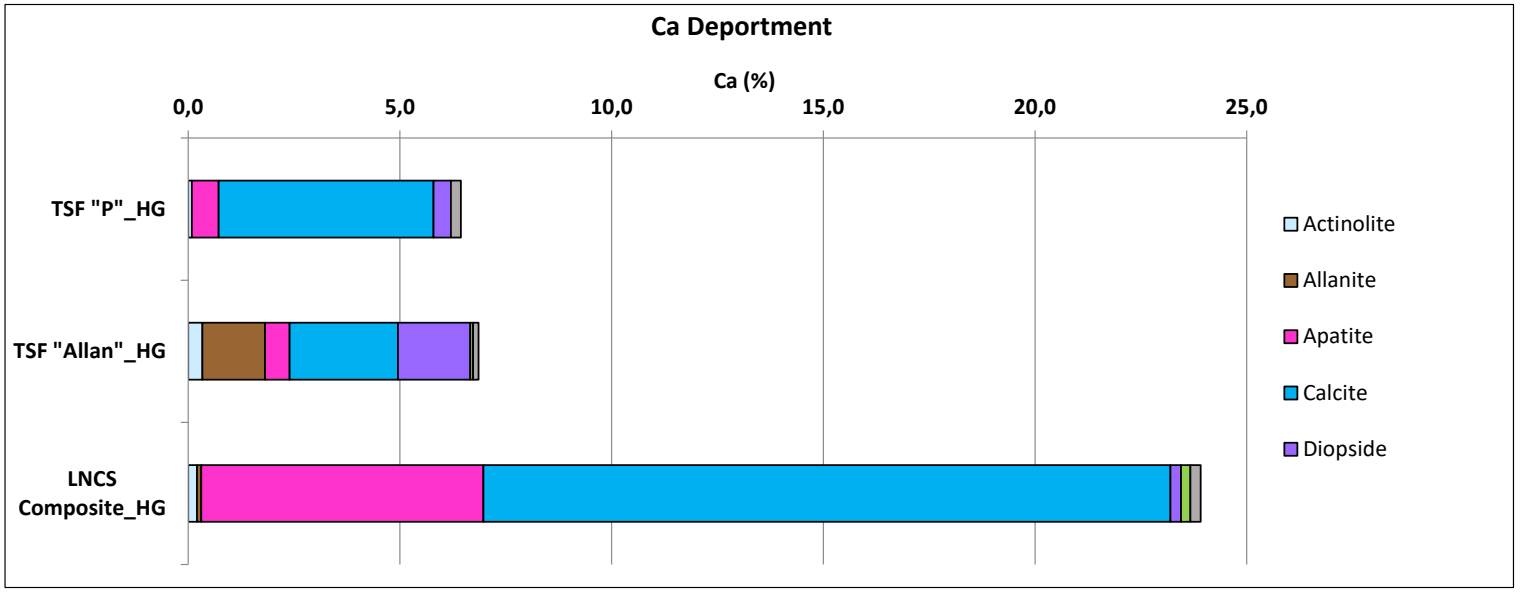
Mineral Grouping	SAMPLE IDENTIFICATION		
	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
Allanite		9,3	2,5
Amphibole	0,6	2,3	1,8
Apatite	1,7	1,5	16,8
Barite	3,9	0,3	3,1
Calcite	12,8	6,4	40,9
Clay	21,6	29,9	5,7
Galena	0,4	0,6	1,4
K-Feldspar	20,1	17,4	2,0
Mica	7,9	8,1	1,0
Monazite	0,1	0,8	2,0
No Group (Carbocernaite)		0,1	0,1
Plagioclase	6,7	3,4	1,2
Pyrite	1,5	0,7	12,5
Pyroxene	2,3	9,4	1,4
Quartz	19,0	7,9	5,0
Rutile	0,2	0,4	0,2
Spinel		0,1	
Titanite	0,1	0,3	1,2
Zircon	0,4		
Other Minerals	0,8	1,2	1,0
Total	**100,0**	**100,0**	**100,0**

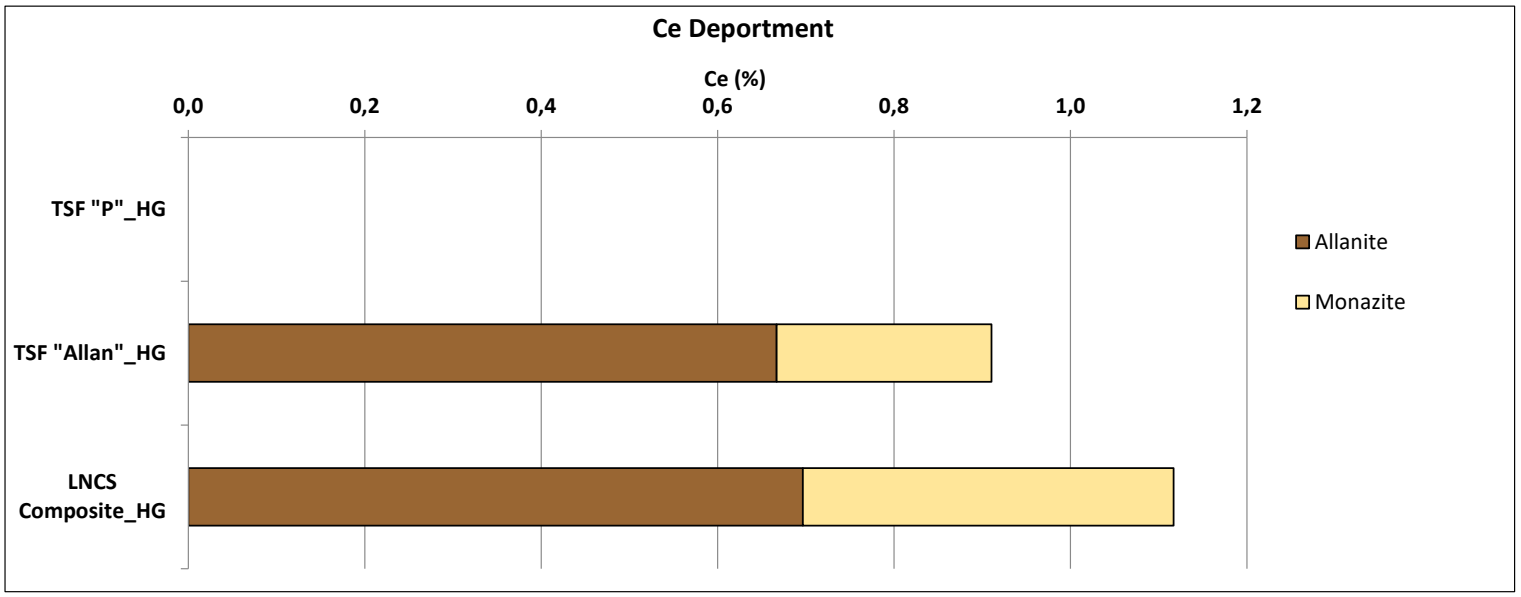
Graphical representation in the following bar chart of the mineral grouping

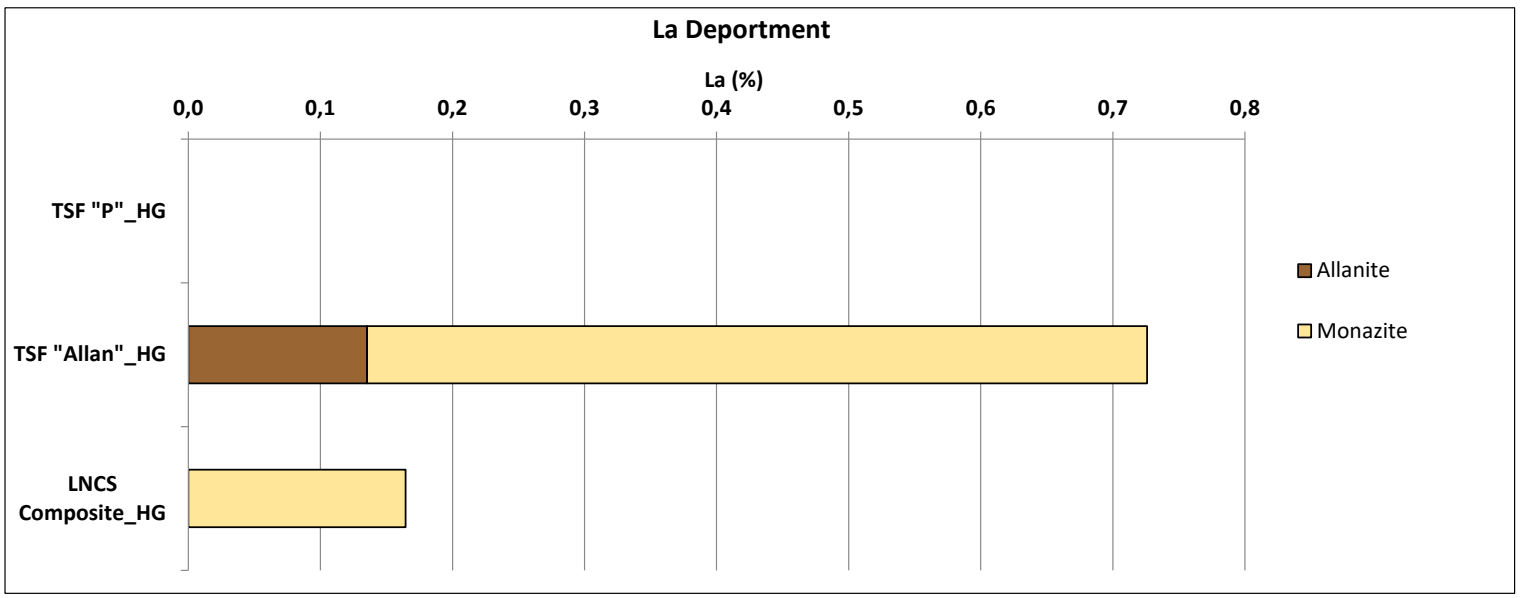


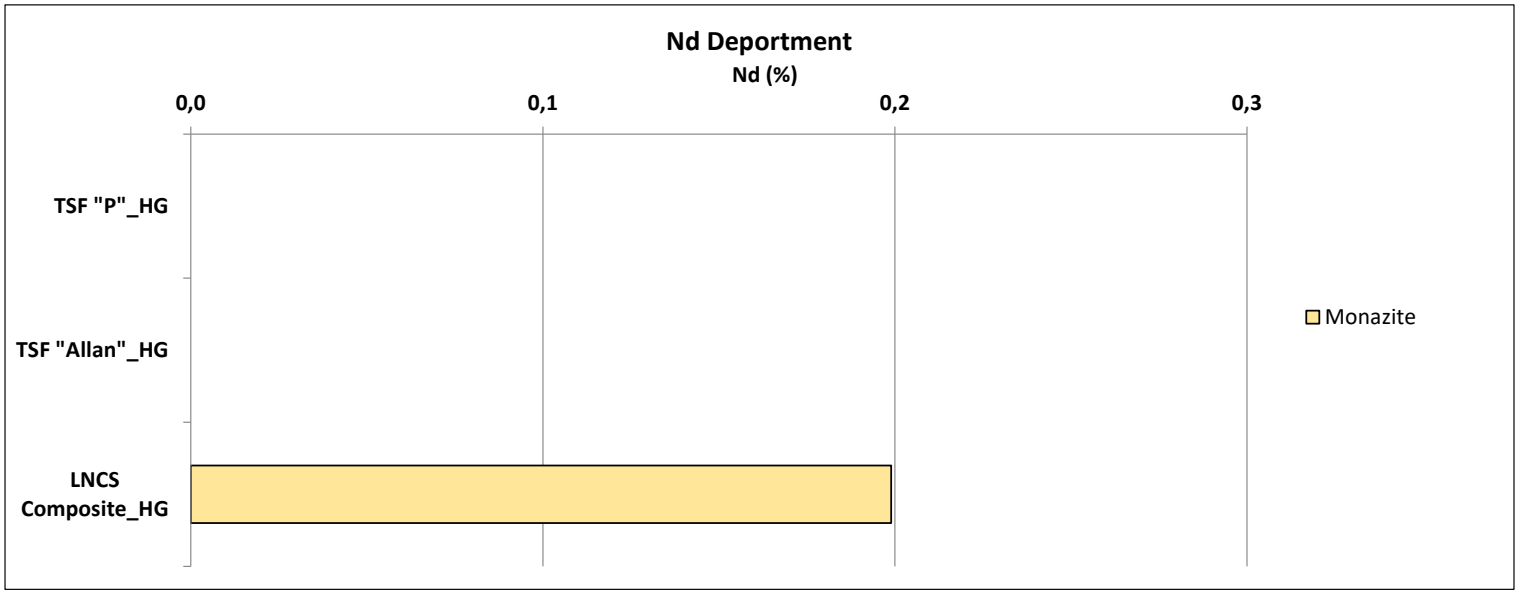
Major Element Deportment Mineral	Abbrevation	SAMPLE IDENTIFICATION		
		TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
Ca deportment (%)				
Actinolite	Act	0,1	0,3	0,2
Allanite	Aln		1,5	0,1
Apatite	Ap	0,6	0,6	6,7
Calcite	Cal	5,1	2,6	16,2
Diopside	Di_Fe	0,4	1,7	0,3
Titanite	Ttn		0,1	0,2
Other minerals	Om	0,2	0,1	0,2
	Ca (SEM/EDS/AMICS)	6,4	6,9	23,9
	Ca (chemical)	6,72	5,08	24,17
Ce deportment (%)				
Allanite	Aln		0,7	0,7
Monazite	Mnz		0,2	0,4
Other minerals	Om			
	Ce (SEM/EDS/AMICS)		0,9	1,1
	Ce (chemical)	0,20	0,39	0,85
La deportment (%)				
Allanite	Aln		0,1	
Monazite	Mnz		0,6	0,2
Other minerals	Om			
	La (SEM/EDS/AMICS)		0,7	0,2
	La (chemical)	0,09	0,16	0,36
Nd deportment (%)				
Monazite	Mnz			0,2
Other minerals	Om			
	Nd (SEM/EDS/AMICS)			0,2
	Nd (chemical)	0,12	0,24	0,54
P deportment (%)				
Apatite	Ap	0,3	0,3	3,1
Monazite	Mnz		0,1	0,5
Other minerals	Om			
	P (SEM/EDS/AMICS)	0,3	0,4	3,6
	P (chemical)	0,54	0,63	2,93
Si deportment (%)				
Actinolite	Act	0,2	0,6	0,5
Albite	Ab	2,0	1,0	0,4
Allanite	Aln		2,2	0,3
Biotite	Bt	1,5	1,6	0,2
Chlorite	Chl	2,7	3,8	0,8
Diopside	Di_Fe	0,6	2,4	0,4
Illite	Ill	0,4	0,5	
Orthoclase	Or	6,1	5,3	0,6
Quartz	Qz	8,9	3,7	2,4
Titanite	Ttn		0,1	0,3
Zircon	Zr	0,1		
Other minerals	Om	0,4	0,2	0,4
	Si (SEM/EDS/AMICS)	22,8	21,4	6,2
	Si (chemical)	23,23	21,44	6,36

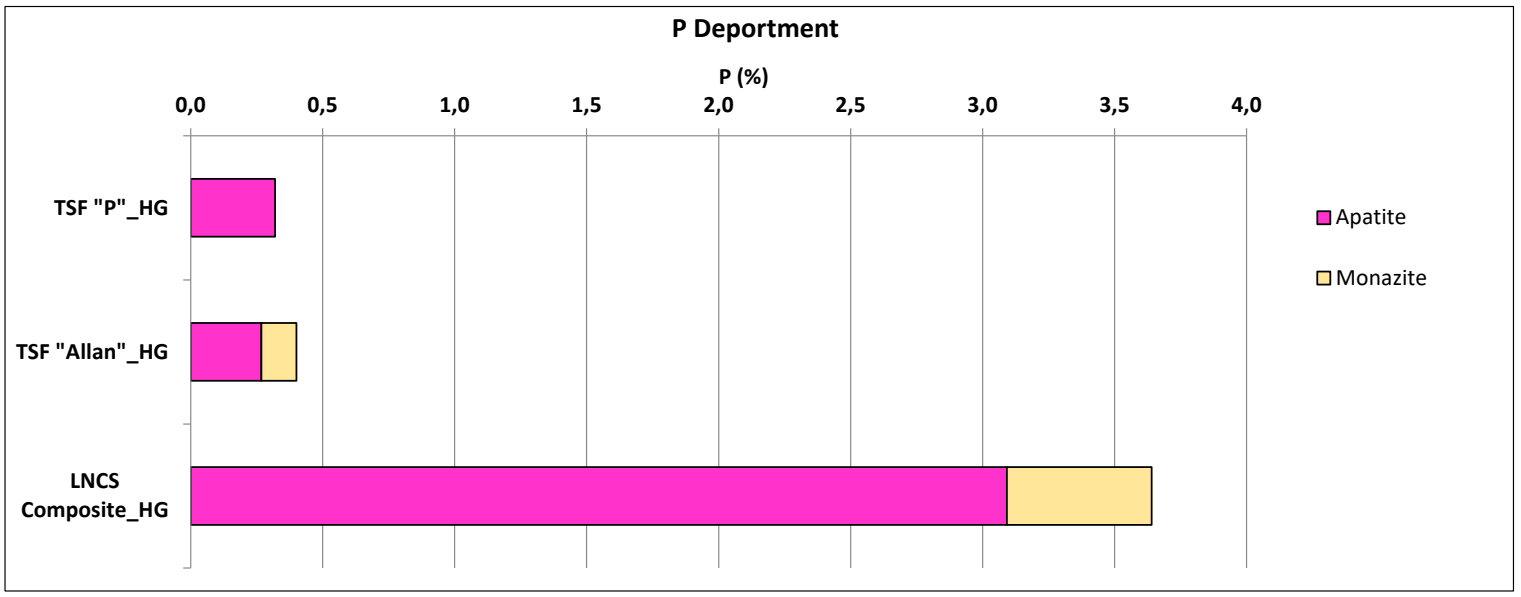
Deportment Chart

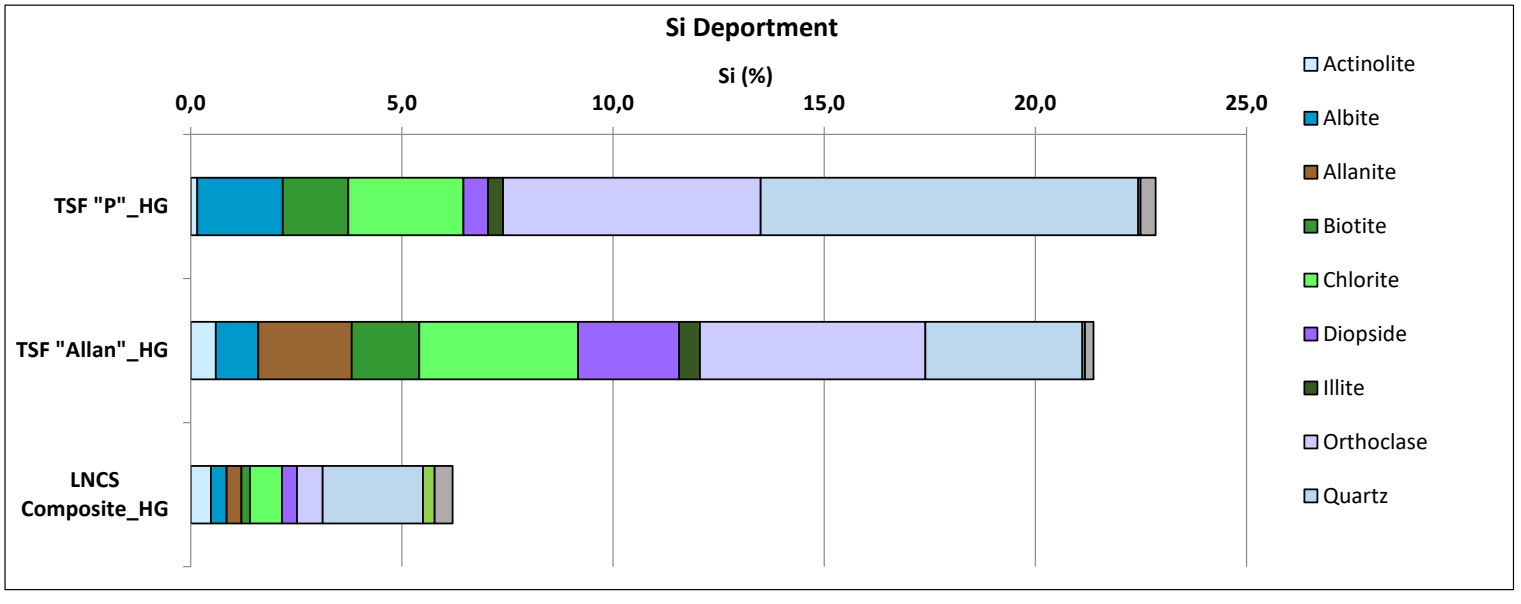




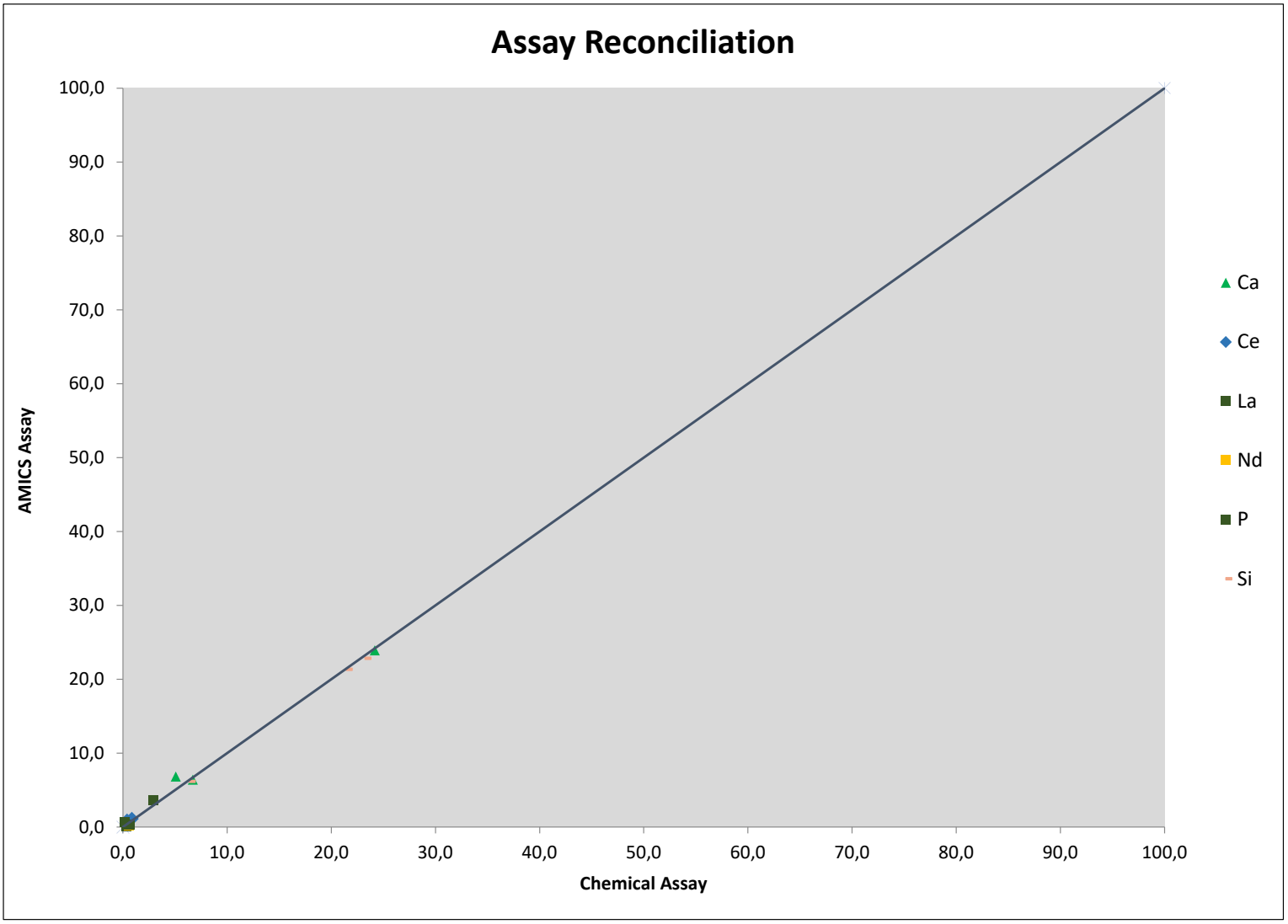



Nd Deportment
Nd (%)
0,0
0,1
0,2
0,3
TSF "P"_HG
TSF "Allan"_HG
LNCS Composite_HG
Monazite


P Deportment
P (%)
0,0
0,5
1,0
1,5
2,0
2,5
3,0
3,5
4,0
TSF "P"_HG
TSF "Allan"_HG
LNCS Composite_HG
Apatite
Monazite

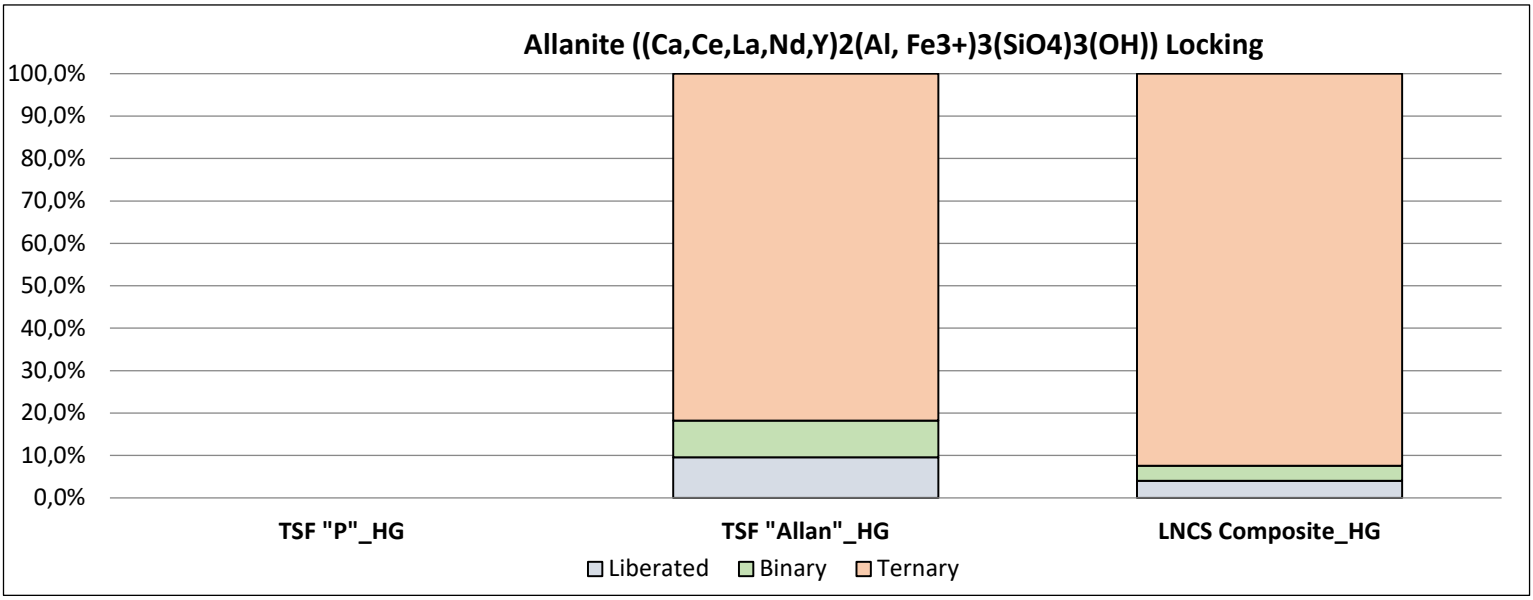

Si Deportment
Si (%)
0,0
5,0
10,0
15,0
20,0
25,0
TSF "P"_HG
TSF "Allan"_HG
LNCS Composite_HG
Actinolite
Albite
Allanite
Biotite
Chlorite
Diopside
Illite
Orthoclase
Quartz

Reconciliation Chart



Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Summary	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
	Locking percentage (%)		
Liberated		9,6	4,0
Binary		8,7	3,6
Ternary		81,8	92,4
Total		**100,0**	**100,0**

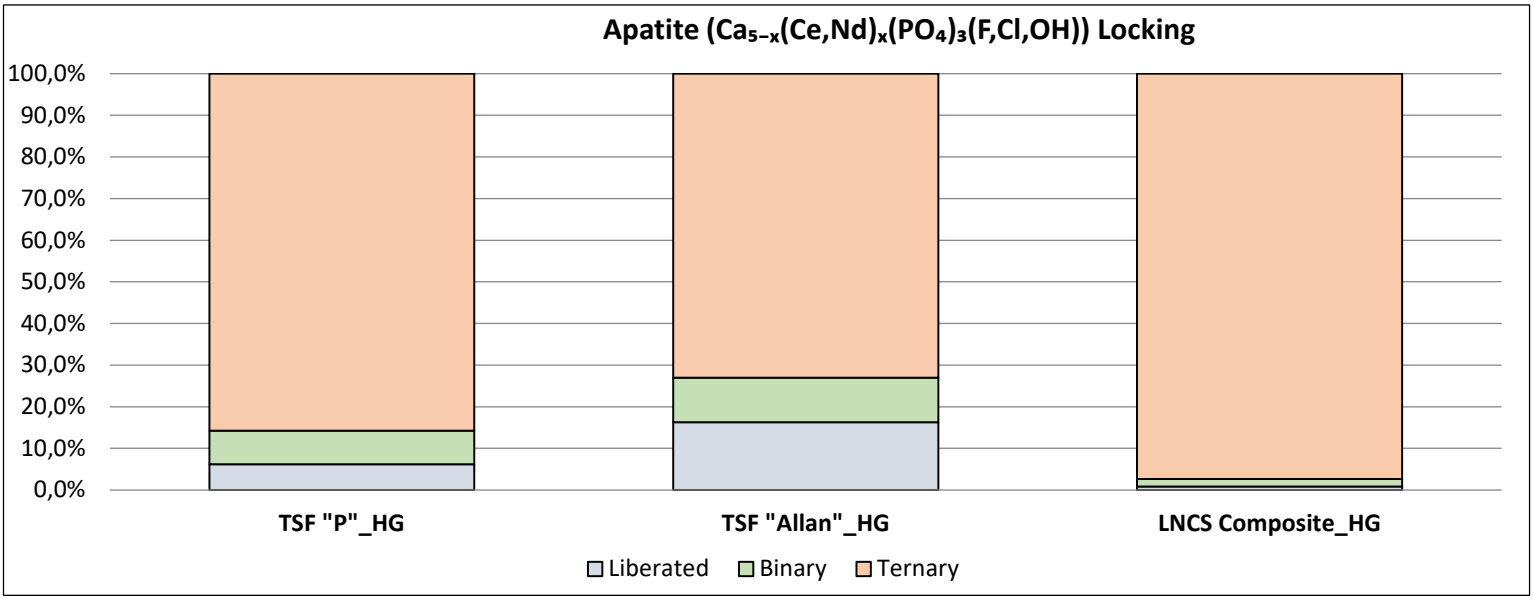


Locking in	TSF "P"_HG		TSF "Allan"_HG		LNCS Composite_HG	
	Binary	Ternary	Binary	Ternary	Binary	Ternary
Actinolite			0,2	2,8		1,8
Albite			0,3	3,0		1,2
Apatite			0,2	1,8	0,1	20,9
Barite				0,4		1,5
Biotite			0,1	3,3		1,1
Calcite			0,6	3,2	0,8	29,8
Carbocernaite						0,2
Chlorite			1,6	27,1	0,6	7,3
Diopside			0,5	13,3	0,2	2,7
Galena				0,4		2,0
Illite			0,1	2,2		0,4
Kaolinite				0,1		
Monazite				0,3		0,9
Orthoclase			1,7	14,7	0,2	4,3
Others			1,8	2,3	0,4	4,7
Pyrite				0,6		2,7
Quartz			1,3	4,6	1,0	7,0
Rutile			0,1	0,3		0,1
Titanite			0,1	0,6	0,1	2,4
Unknown			0,1	1,0		1,4

Mineralogical Report - Mineral Locking

Apatite (Ca $_x$(Ce,Nd)$_x$(PO) (F,Cl,OH))

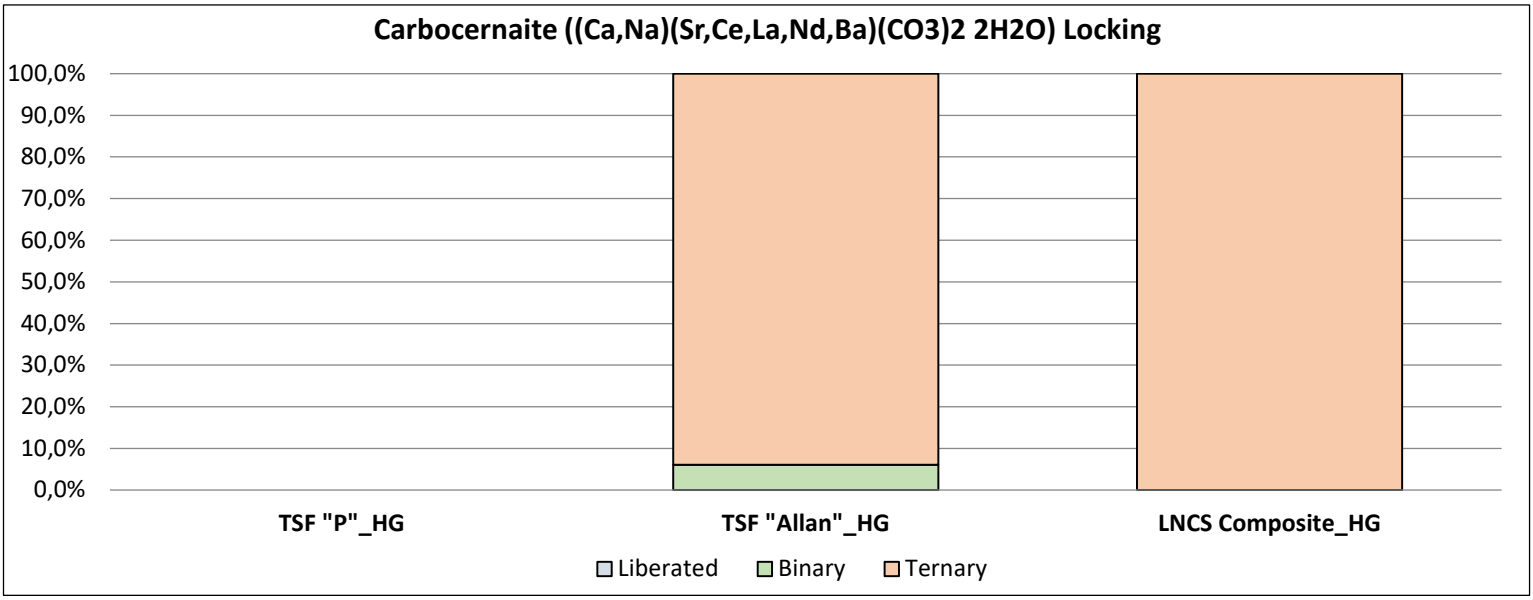
Summary	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
	Locking percentage (%)		
Liberated	6,2	16,3	0,9
Binary	8,1	10,7	1,8
Ternary	85,7	73,0	97,4
Total	**100,0**	**100,0**	**100,0**



Locking in	TSF "P"_HG		TSF "Allan"_HG		LNCS Composite_HG	
	Binary	Ternary	Binary	Ternary	Binary	Ternary
Actinolite	0,1	9,2	0,7	1,7		3,8
Albite		0,2		1,8		0,2
Allanite			1,7	13,9		6,7
Barite		0,8		0,1		1,1
Biotite	0,1	0,2		2,1		0,2
Calcite	0,8	33,6	0,2	4,5	0,4	15,8
Carbocernaite						0,2
Chlorite	1,1	9,4	0,4	17,2		8,5
Diopside				8,5		2,3
Galena				1,4		1,5
Illite		0,3		0,9		0,1
Kaolinite						
Monazite		4,9		3,9		22,4
Orthoclase	0,1	0,6	0,2	7,5		1,3
Others	5,2	20,4	6,6	4,2	1,2	20,8
Pyrite				0,3		1,3
Quartz	0,6	0,2	0,9	2,2	0,1	5,1
Rutile				0,1		
Titanite				0,2		1,9
Zircon		0,8				
Unknown	0,2	5,3	0,2	2,5		4,2

Carbocernaite ((Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O)

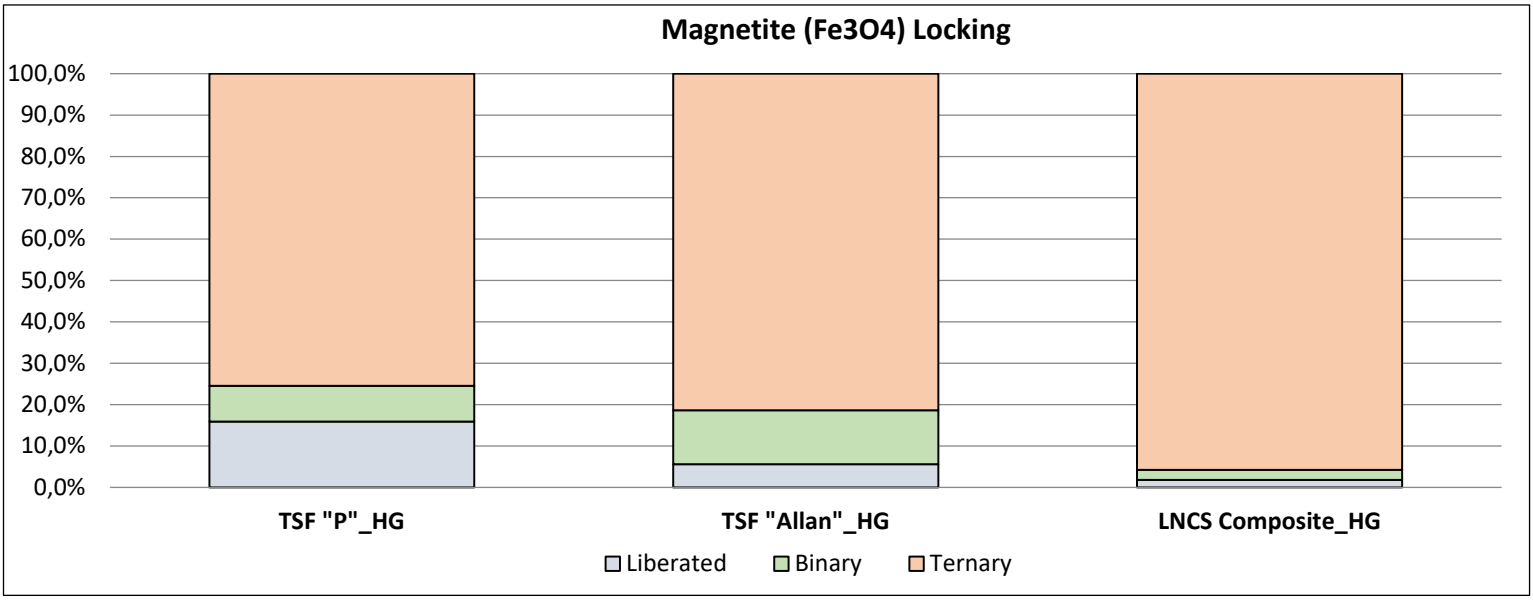
Summary	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
	Locking percentage (%)		
Liberated			
Binary		6,1	
Ternary		93,9	100,0
Total		**100,0**	**100,0**



Locking in	TSF "P"_HG		TSF "Allan"_HG		LNCS Composite_HG	
	Binary	Ternary	Binary	Ternary	Binary	Ternary
Actinolite				0,7		0,2
Allanite						2,6
Apatite						13,3
Barite						2,9
Biotite						0,2
Calcite						60,4
Chlorite						3,1
Diopside						0,8
Galena						0,2
Monazite				72,8		8,0
Orthoclase				0,5		0,1
Others				3,9		2,3
Pyrite						0,2
Quartz				10,6		2,4
Titanite						1,2
Unknown			6,1	2,3		2,3

Monazite ((Ce,La,Th,Nd) PO4)

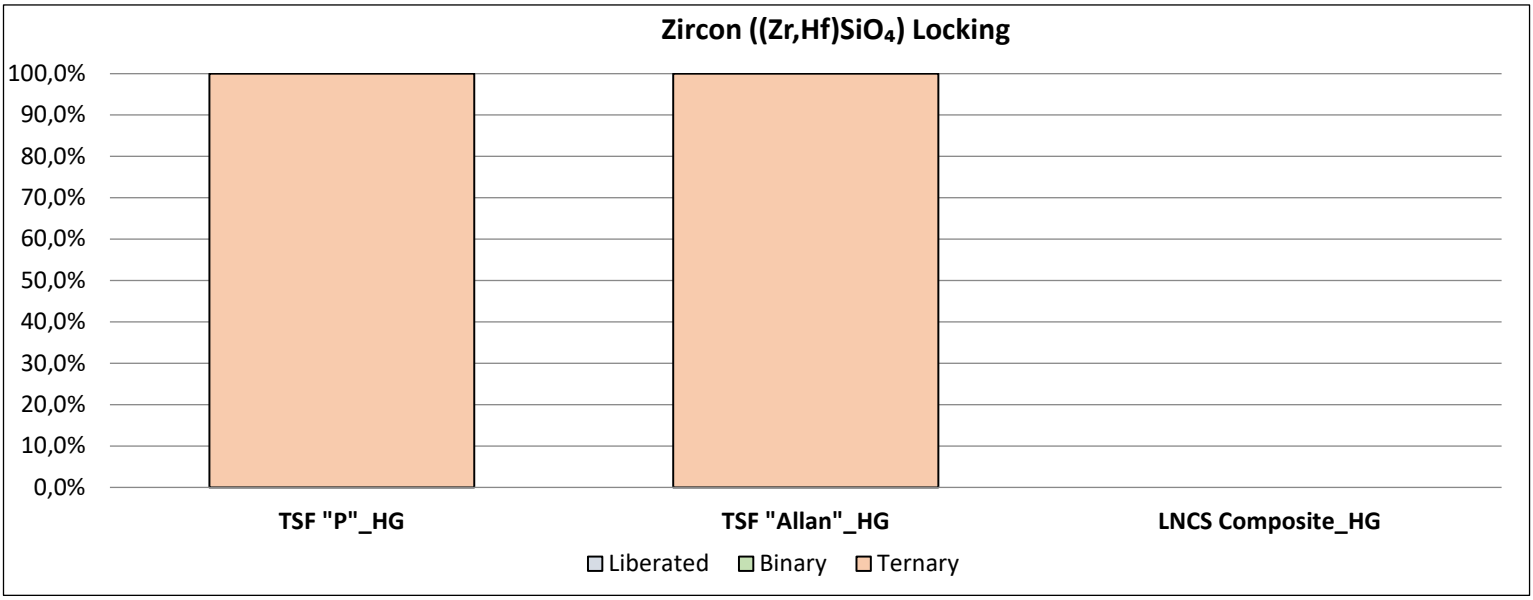
Summary	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
	Locking percentage (%)		
Liberated	15,9	5,6	1,8
Binary	8,6	13,0	2,4
Ternary	75,5	81,3	95,8
Total	**100,0**	**100,0**	**100,0**



Locking in	TSF "P"_HG		TSF "Allan"_HG		LNCS Composite_HG	
	Binary	Ternary	Binary	Ternary	Binary	Ternary
Actinolite		0,7		2,9		0,4
Albite		1,8		0,3		0,0
Allanite				3,0		1,2
Apatite		23,5		1,2	0,5	51,8
Barite	2,6	0,8		0,2		0,2
Biotite		1,6		0,9		0,1
Calcite		4,4	0,4	0,7	0,1	12,3
Carbocernaite				21,6		3,2
Chlorite		20,6	1,1	11,2		3,0
Diopside		0,2		3,0		0,4
Galena				0,2		2,9
Illite		0,5		0,3		
Orthoclase		3,5		2,8		0,2
Others	1,8	4,3	2,7	11,1	1,2	9,6
Pyrite		0,7		0,1		0,5
Quartz		2,1	8,9	16,5	0,5	4,8
Rutile				0,1		
Titanite				0,2	0,1	0,5
Unknown	4,3	10,8		5,3		4,8

Zircon ((Zr,Hf)SiO)

Summary	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
	Locking percentage (%)		
Liberated			
Binary			
Ternary	100,0	100,0	
Total	**100,0**	**100,0**	



Locking in	TSF "P"_HG		TSF "Allan"_HG		LNCS Composite_HG	
	Binary	Ternary	Binary	Ternary	Binary	Ternary
Biotite		0,3		47,2		
Chlorite		6,1		12,9		
Albite				18,5		
Orthoclase		0,1		11,5		
Quartz				9,0		
Others		36,5		0,9		
Apatite		35,3				
Calcite		1,3				
Unknown		20,4				

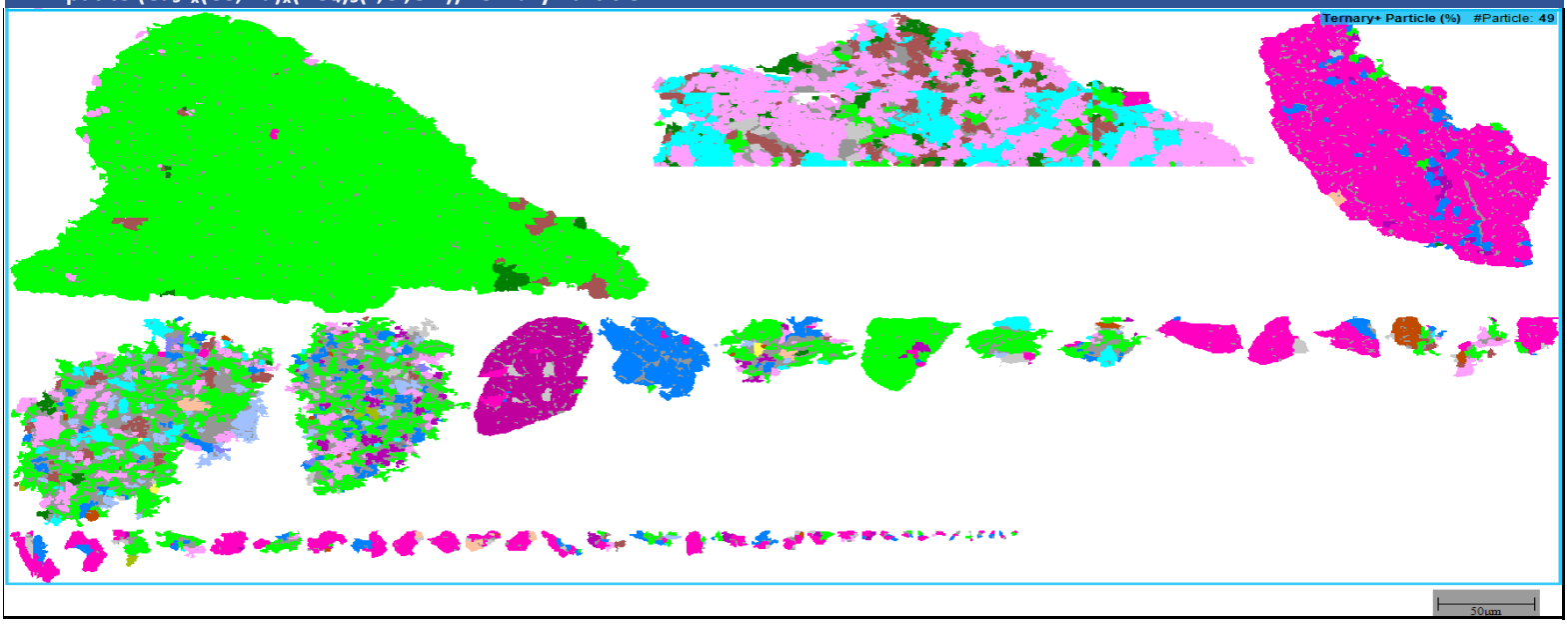
Mineral Locking Particle Image

TSF "P"_HG

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Liberated Particle

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Binary Particle

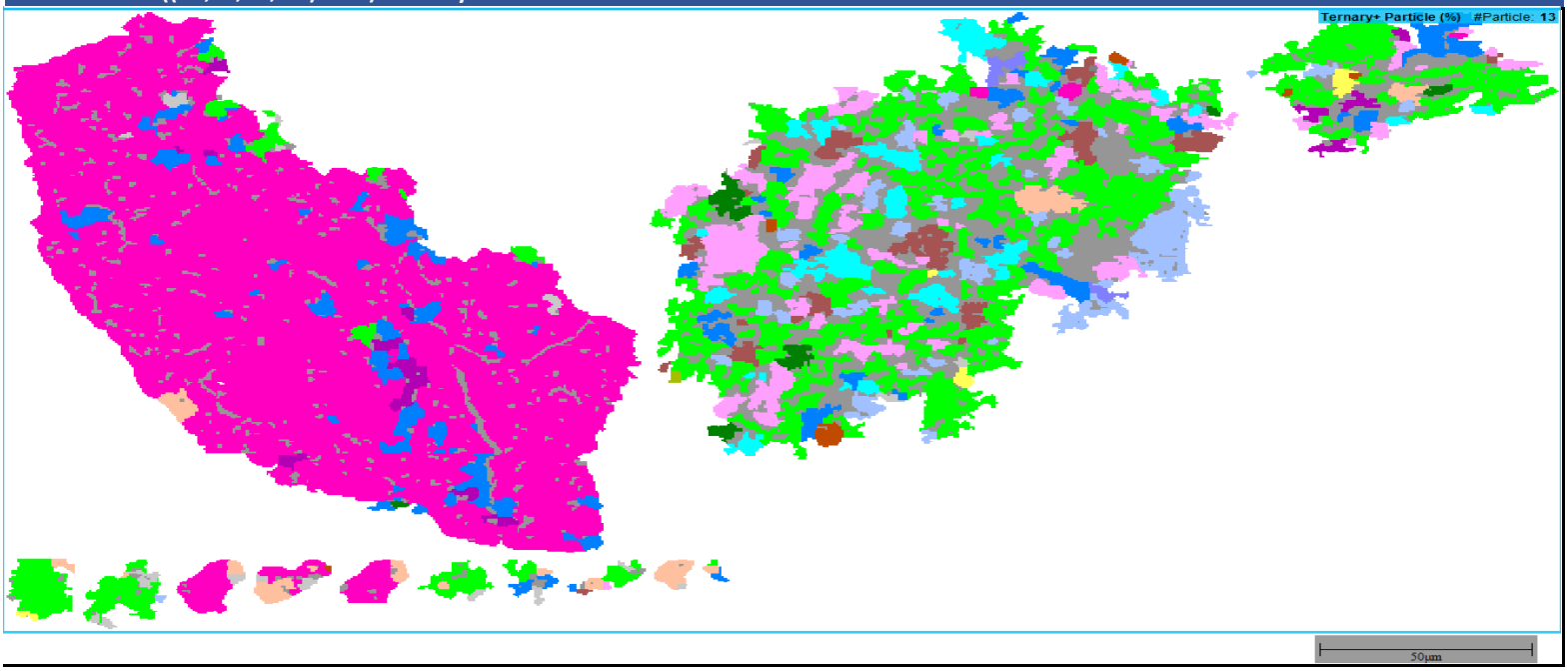
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Ternary Particle



Monazite ((Ce,La,Th,Nd) PO4) Liberated Particle

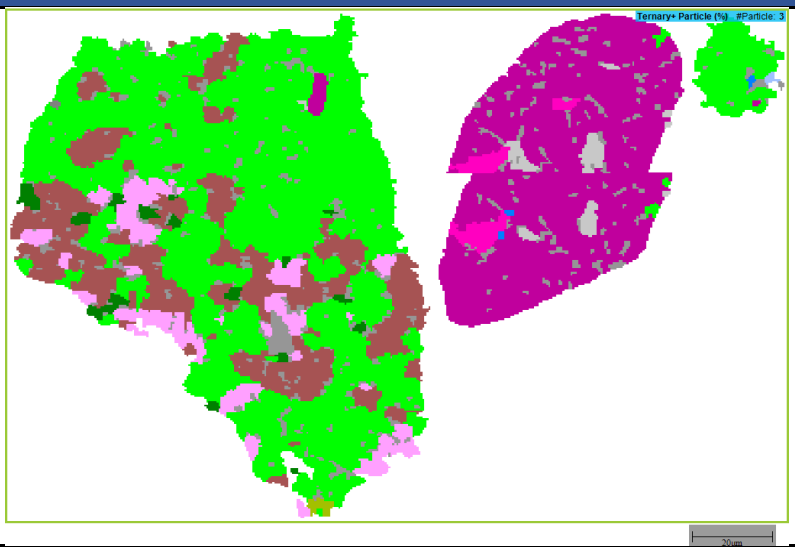
Monazite ((Ce,La,Th,Nd) PO4) Binary Particle

Monazite ((Ce,La,Th,Nd) PO4) Ternary Particle



Mineral Locking Particle Image

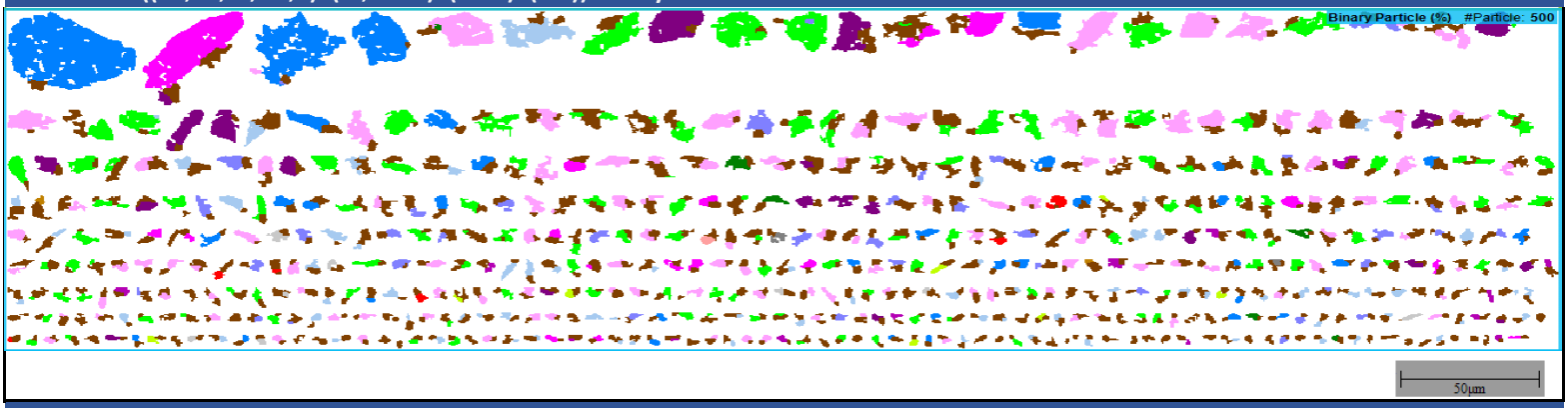
Zircon ($(Zr,Hf)SiO_4$) Ternary Particle



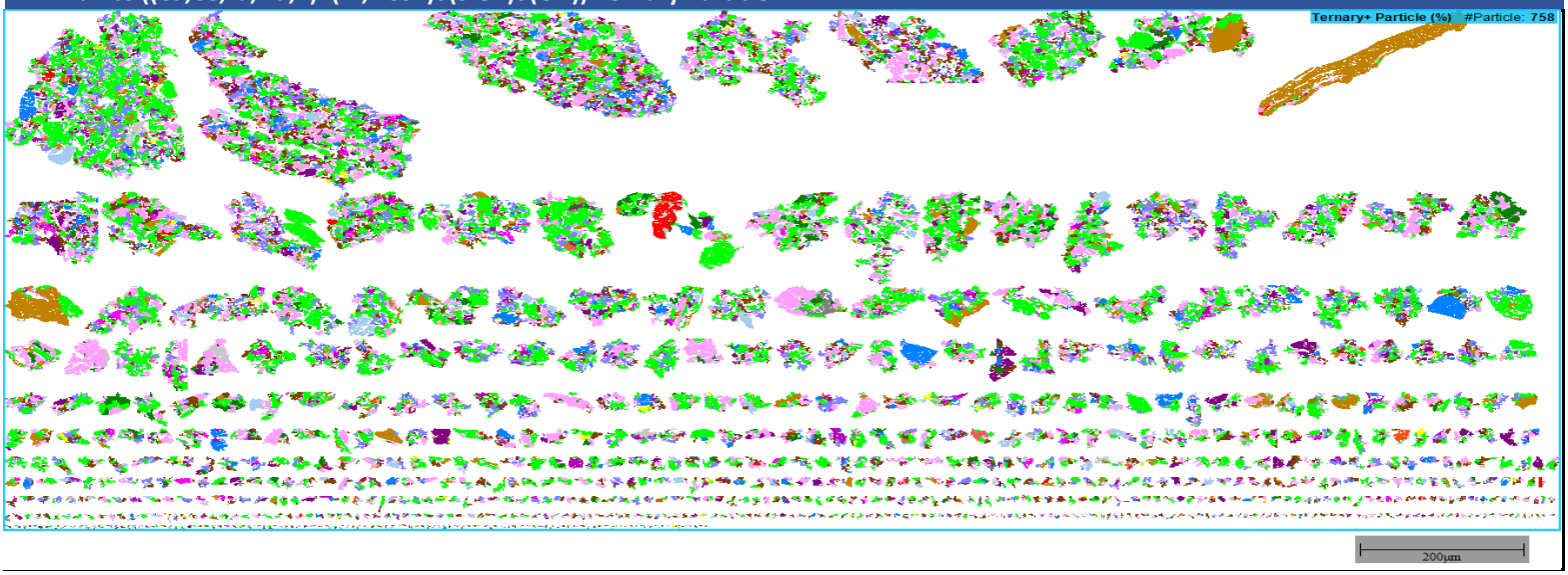
TSF "Allan"_HG

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Liberated Particle

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Binary Particle



Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Ternary Particle

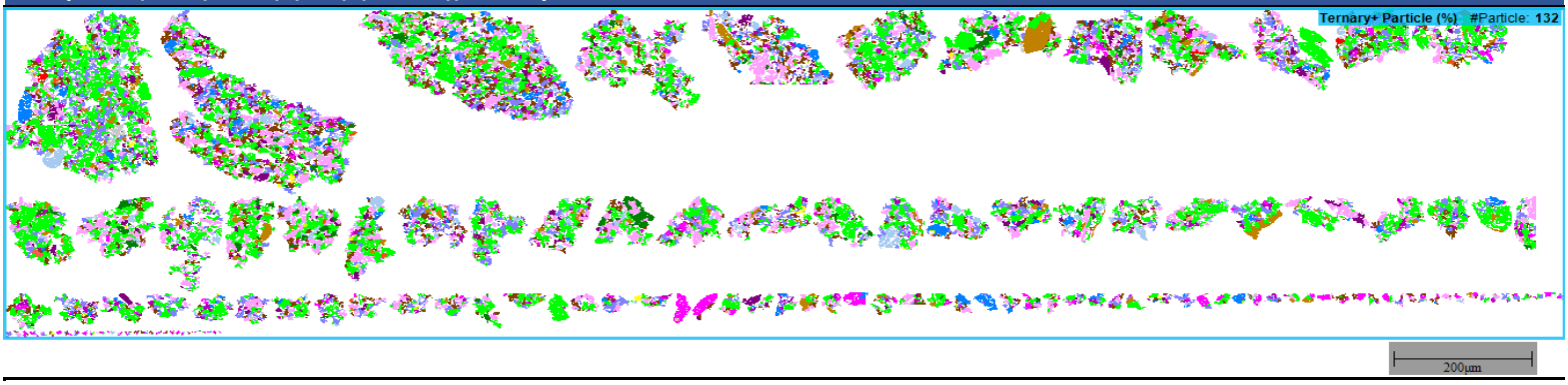


Mineral Locking Particle Image

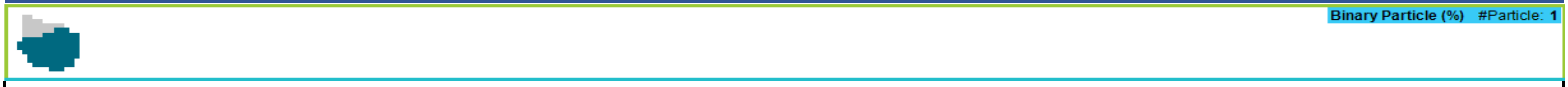
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Liberated Particle

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Binary Particle

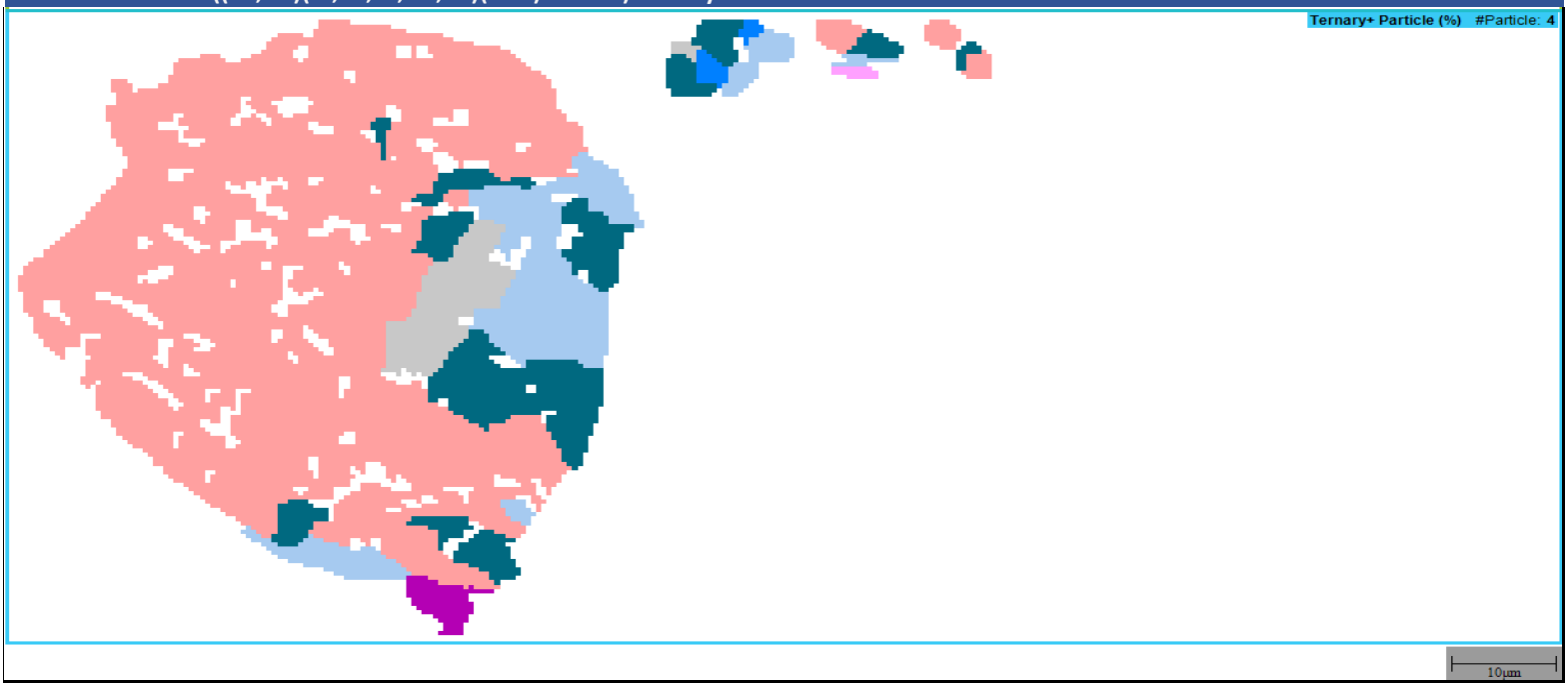
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Ternary Particle



Carbocernaite ((Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O) Binary Particle



Carbocernaite ((Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O)Ternary Particle

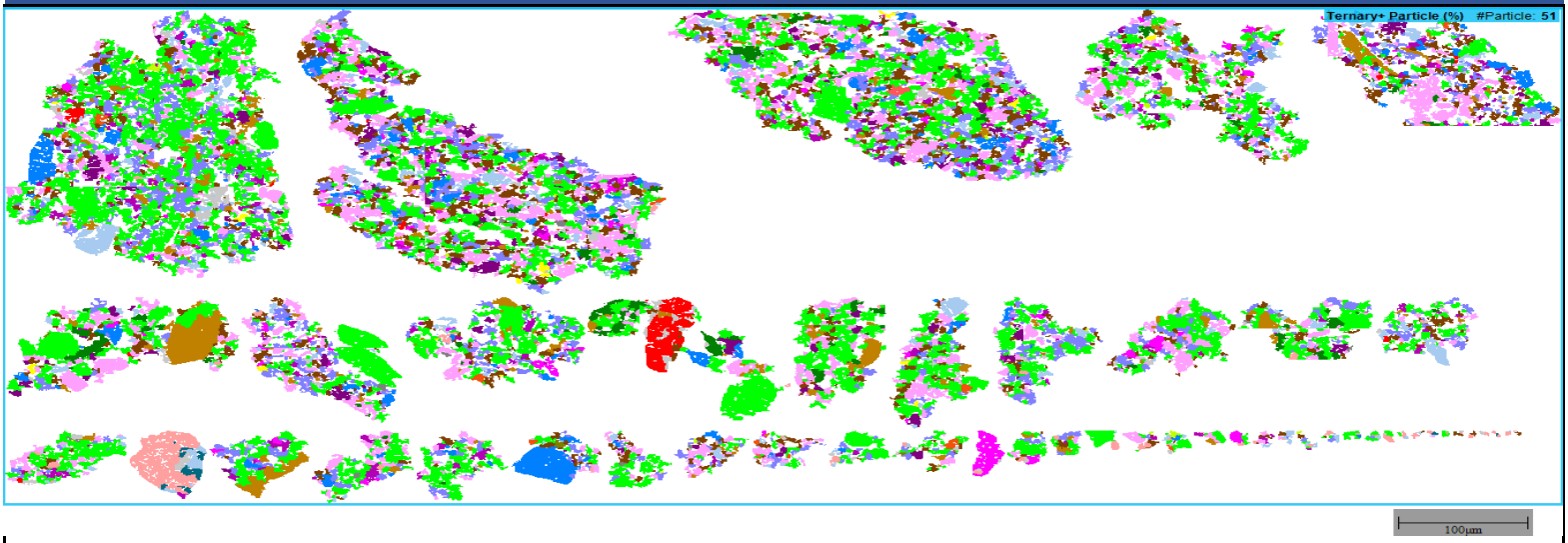


Monazite ((Ce,La,Th,Nd) PO4) Liberated Particle

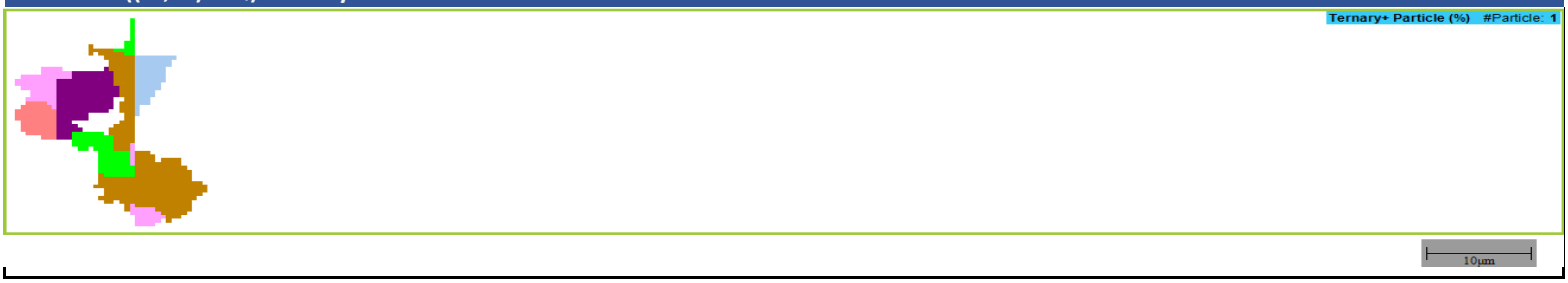
Monazite ((Ce,La,Th,Nd) PO4) Binary Particle

Mineral Locking Particle Image

Monazite ((Ce,La,Th,Nd) PO4) Ternary Particle



Zircon ($(Zr,Hf)SiO_4$) Ternary Particle

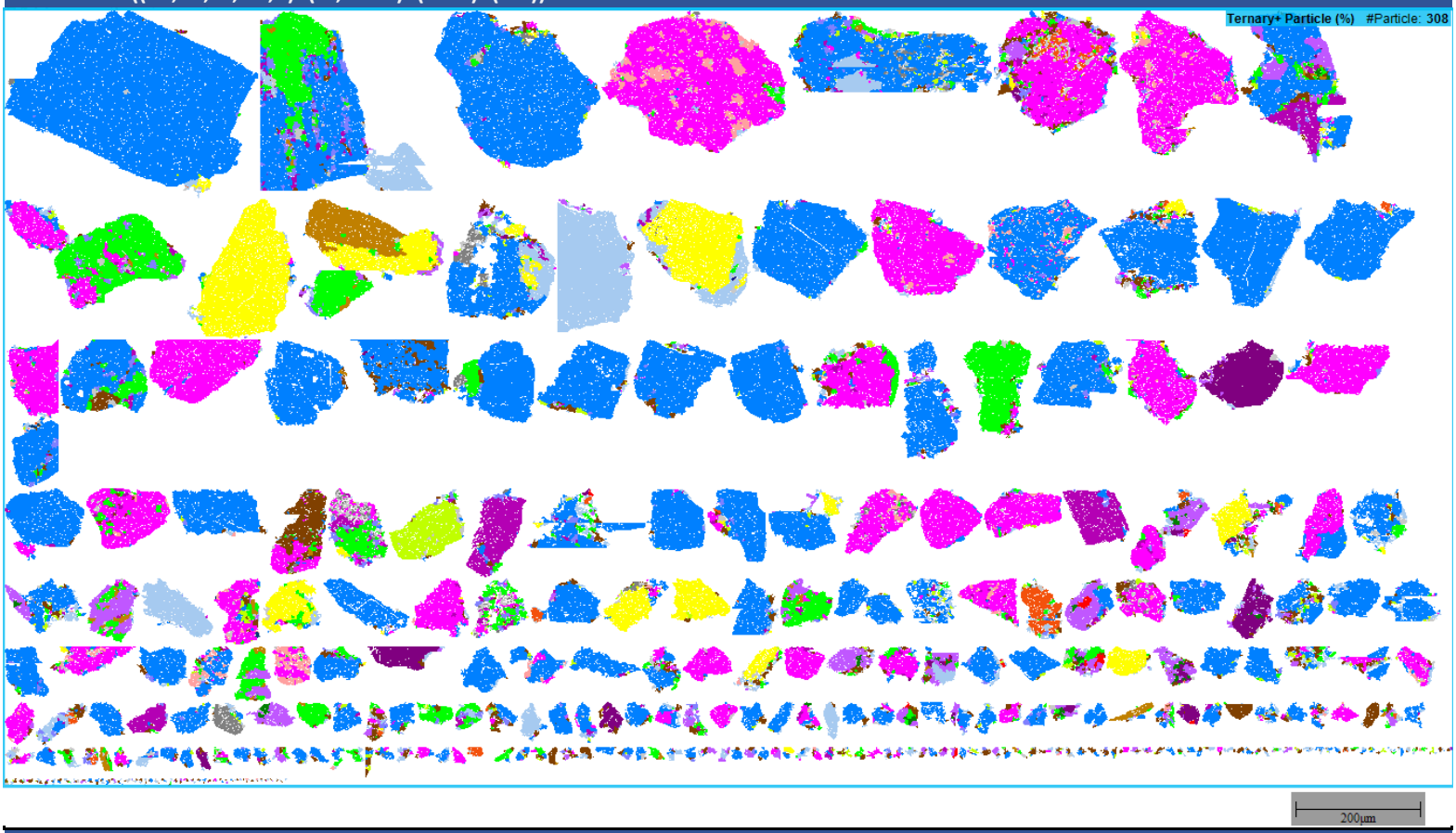


LNCS Composite_HG

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Liberated Particle

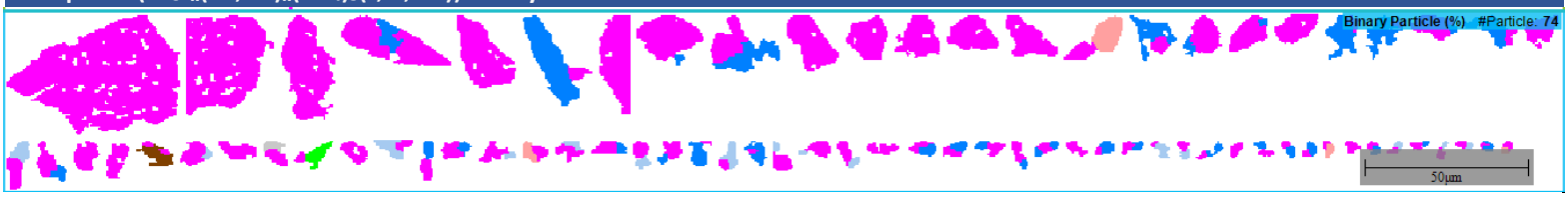
Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Binary Particle

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Liberated Particle



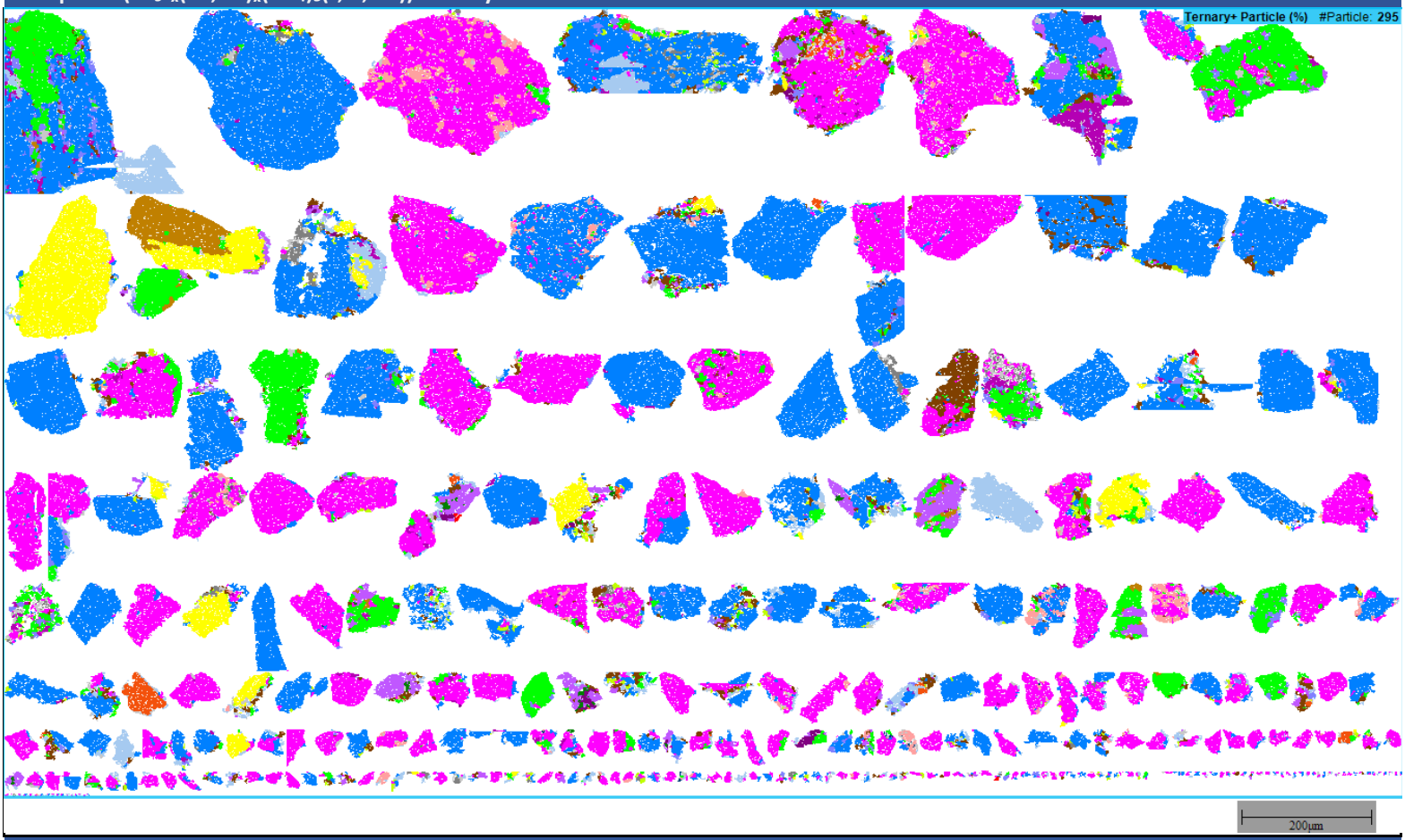
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Liberated Particle

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Binary Particle

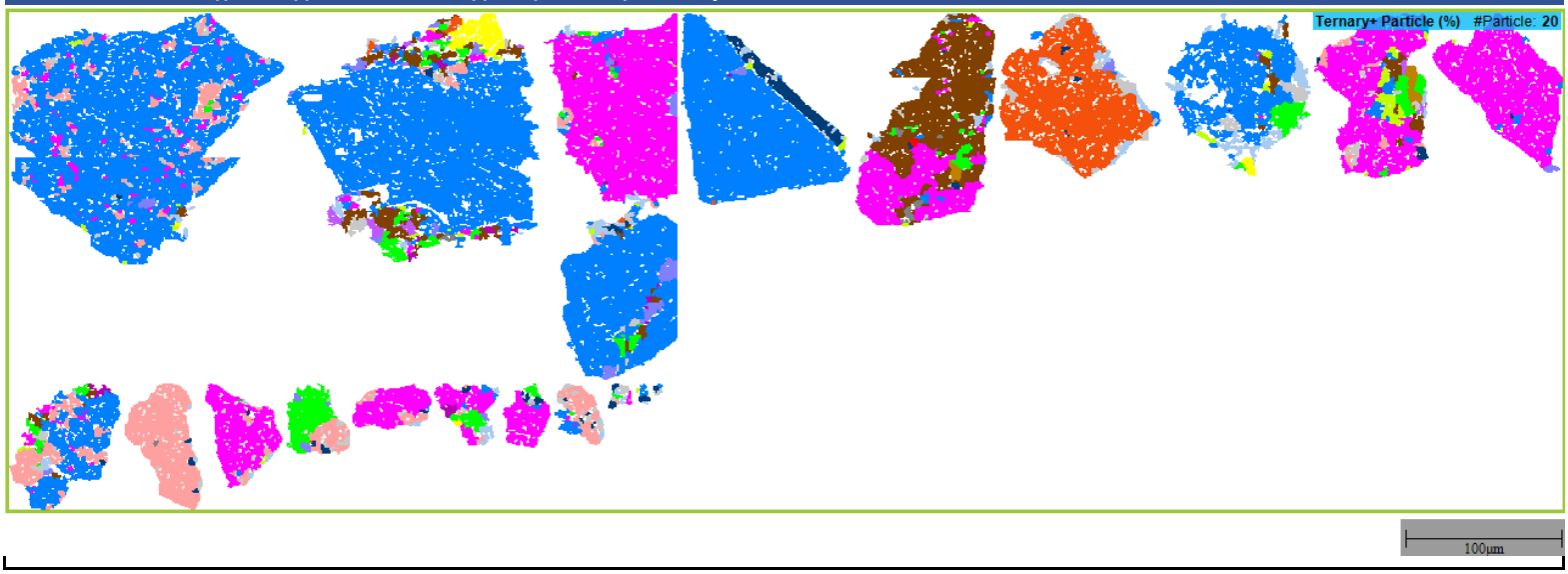


Mineral Locking Particle Image

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Ternary Particle



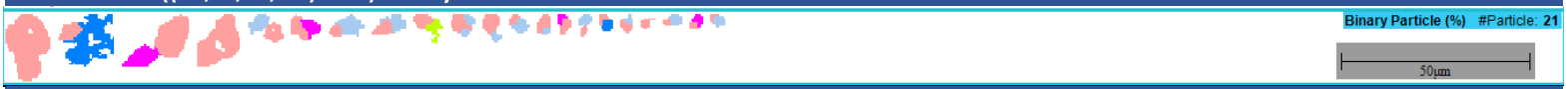
Carbocernaite ((Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O) Ternary Particle



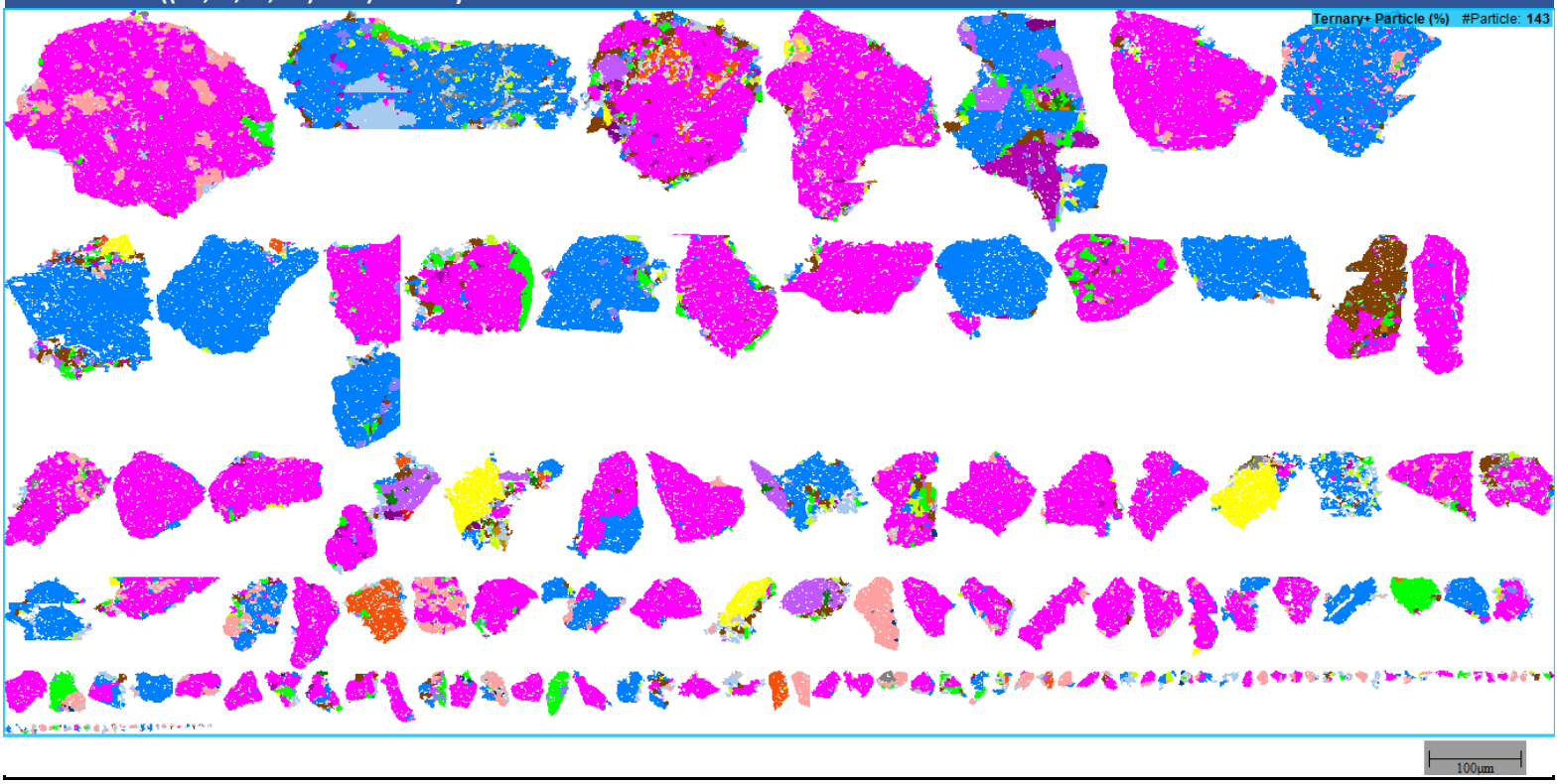
Mineral Locking Particle Image

Monazite ((Ce,La,Th,Nd) PO4) Liberated Particle

Monazite ((Ce,La,Th,Nd) PO4) Binary Particle

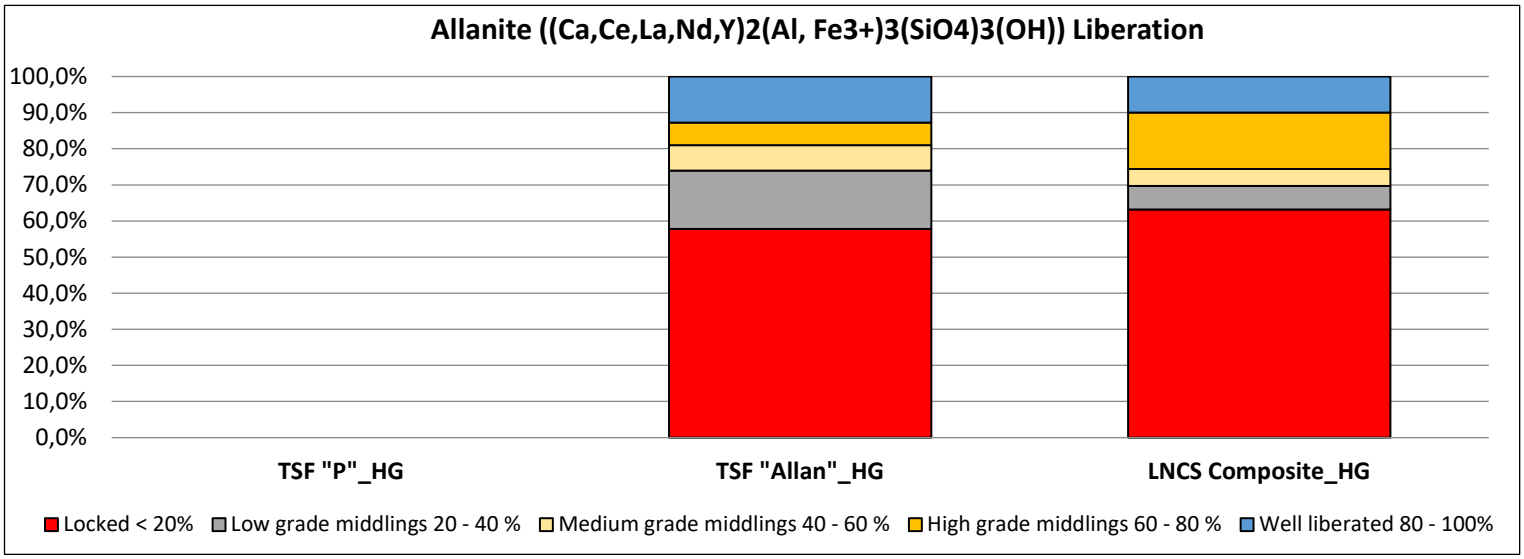


Monazite ((Ce,La,Th,Nd) PO4) Ternary Particle



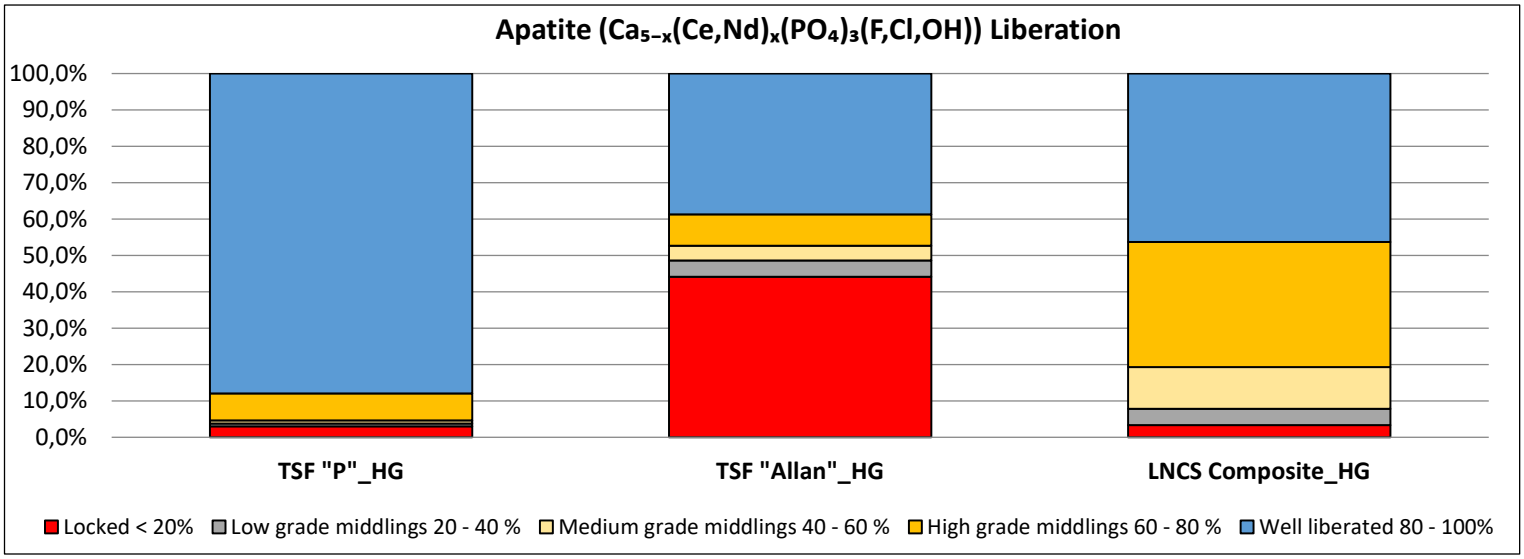
Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Liberation Classes	Surface Area	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
Locked	< 20%		57,8	63,2
Low grade middlings	20 - 40 %		16,2	6,6
Medium grade middlings	40 - 60 %		7,0	4,7
High grade middlings	60 - 80 %		6,2	15,6
Well liberated	80 - 100%		12,8	10,0
	Total		**100,0**	**100,0**



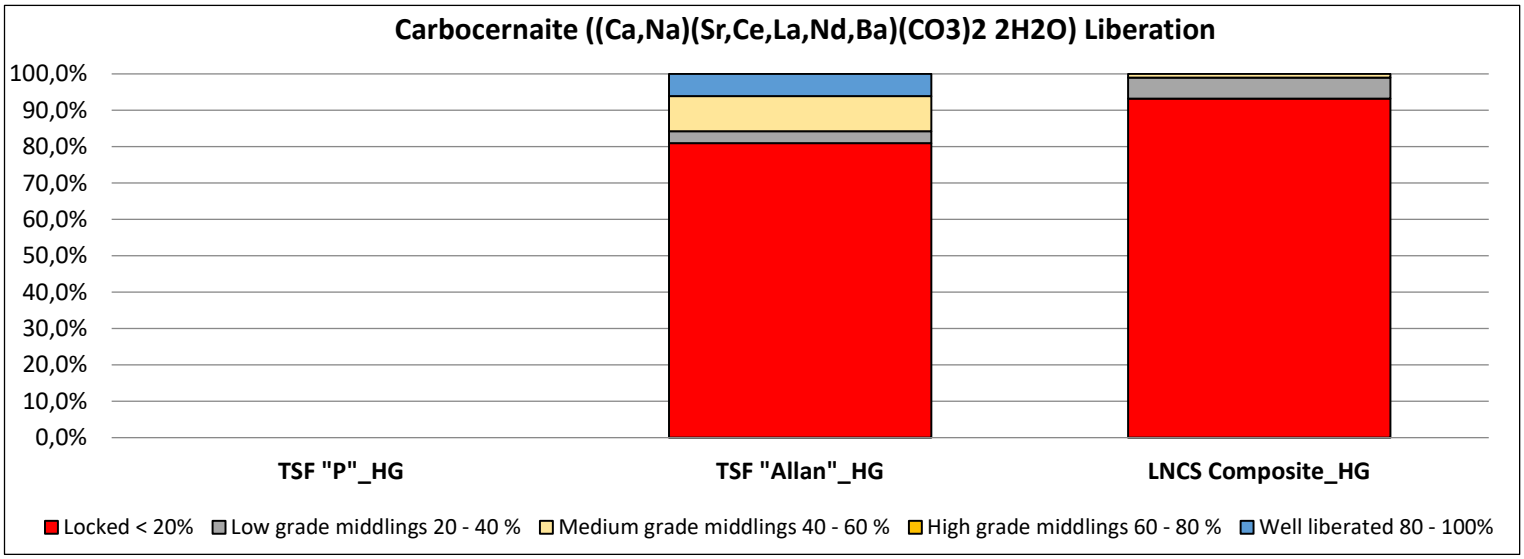
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

Liberation Classes	Surface Area	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
Locked	< 20%	3,0	44,1	3,3
Low grade middlings	20 - 40 %	0,8	4,5	4,6
Medium grade middlings	40 - 60 %	0,9	4,1	11,4
High grade middlings	60 - 80 %	7,4	8,6	34,4
Well liberated	80 - 100%	87,9	38,7	46,3
	Total	**100,0**	**100,0**	**100,0**



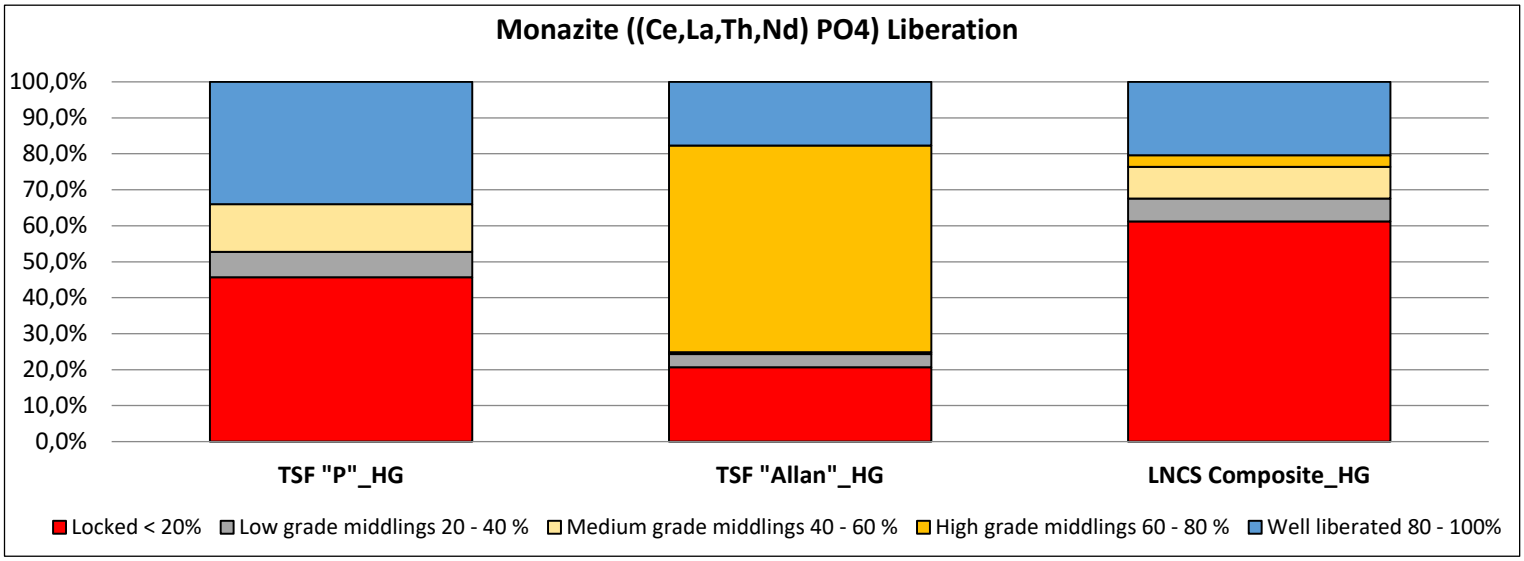
Carbocernaite ((Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O)

Liberation Classes	Surface Area	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
Locked	< 20%		81,0	93,2
Low grade middlings	20 - 40 %		3,3	5,8
Medium grade middlings	40 - 60 %		9,7	1,1
High grade middlings	60 - 80 %		0,0	
Well liberated	80 - 100%		6,1	
	Total		**100,0**	**100,0**



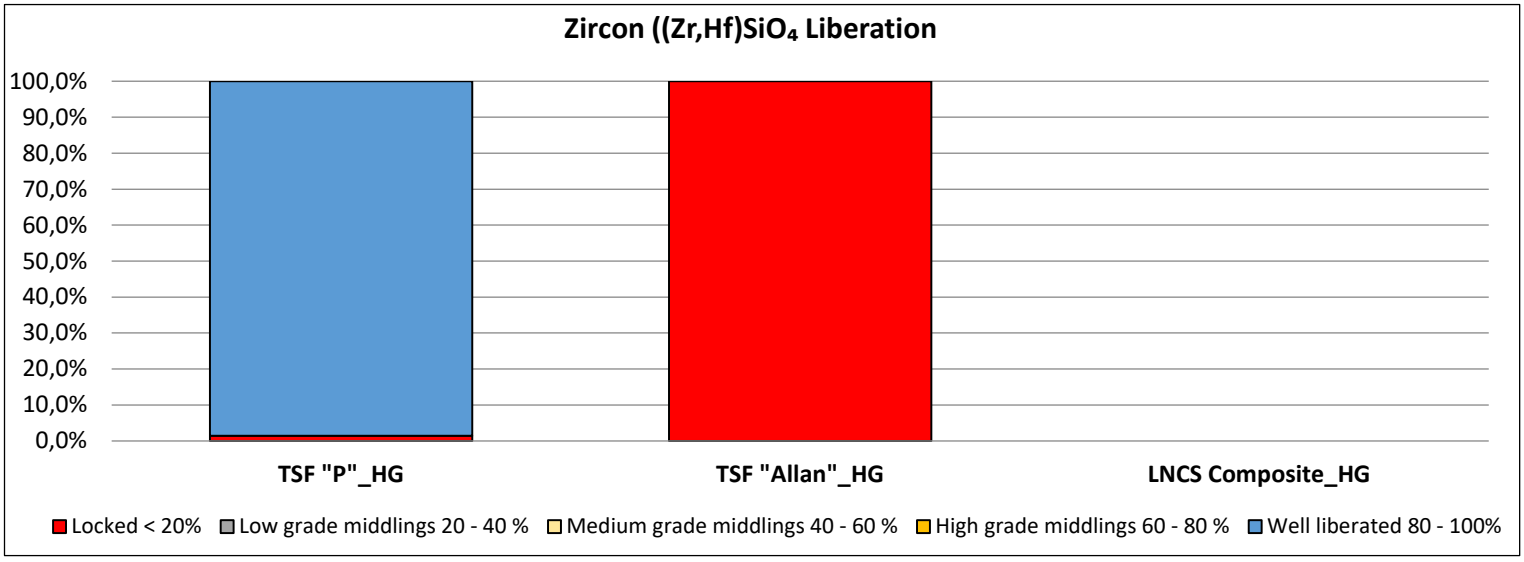
Monazite ((Ce,La,Th,Nd) PO4)

Liberation Classes	Surface Area	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
Locked	< 20%	45,7	20,7	61,2
Low grade middlings	20 - 40 %	7,1	3,6	6,4
Medium grade middlings	40 - 60 %	13,3	0,5	8,8
High grade middlings	60 - 80 %		57,5	3,3
Well liberated	80 - 100%	34,0	17,7	20,4
	Total	**100,0**	**100,0**	**100,0**



Zircon ($(Zr,Hf)SiO_4$)

Liberation Classes	Surface Area	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
Locked	< 20%	1,4	100,0	
Low grade middlings	20 - 40 %			
Medium grade middlings	40 - 60 %			
High grade middlings	60 - 80 %			
Well liberated	80 - 100%	98,6		
	Total	**100,0**	**100,0**	

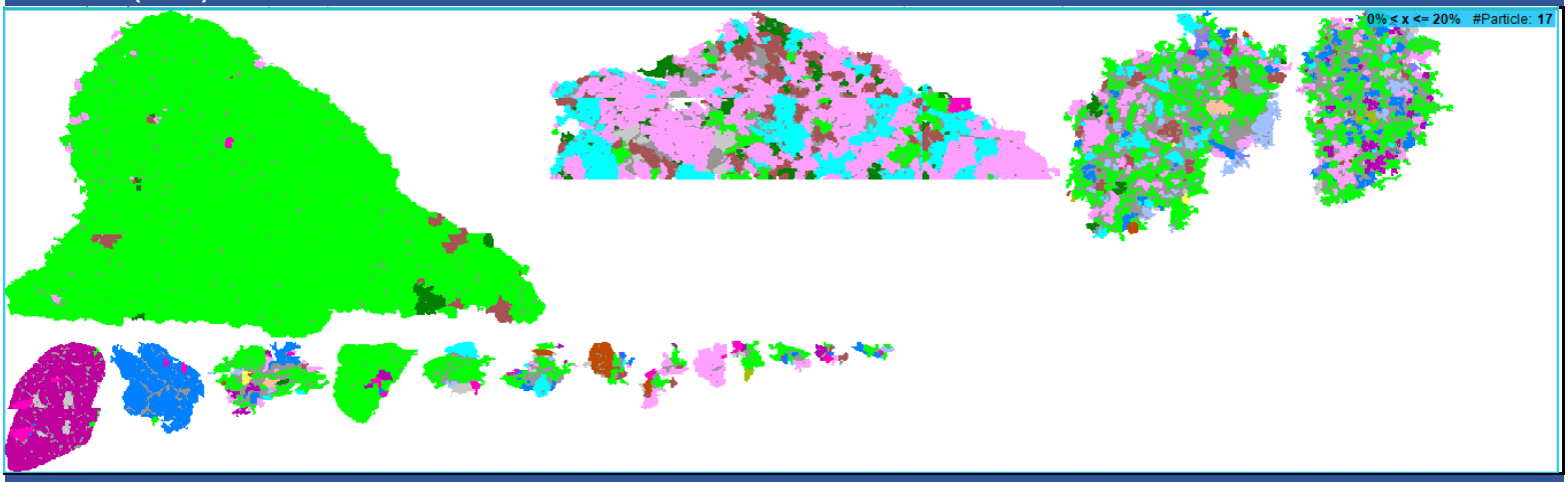


Liberation Class Particle Image

TSF "P"_HG

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

Locked (<20%)

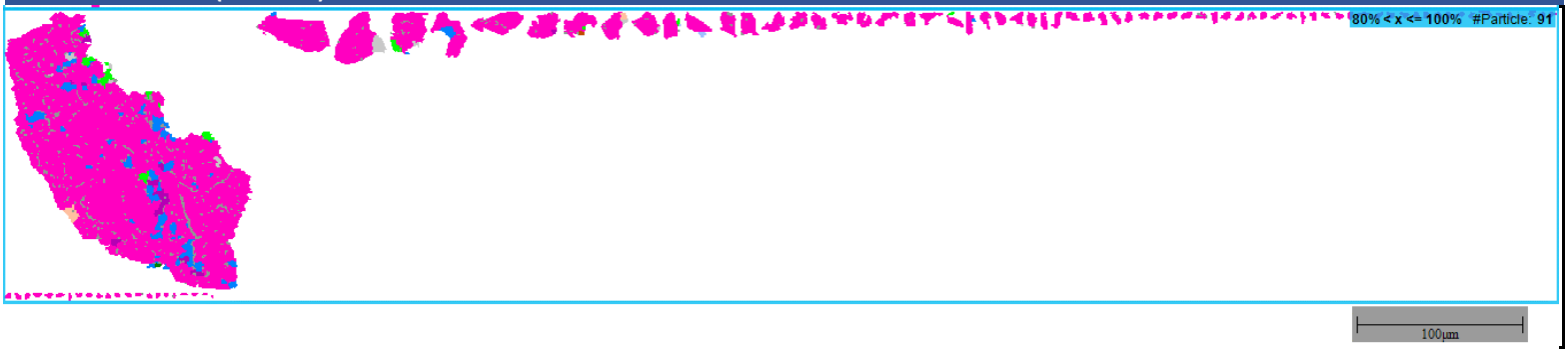


Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)

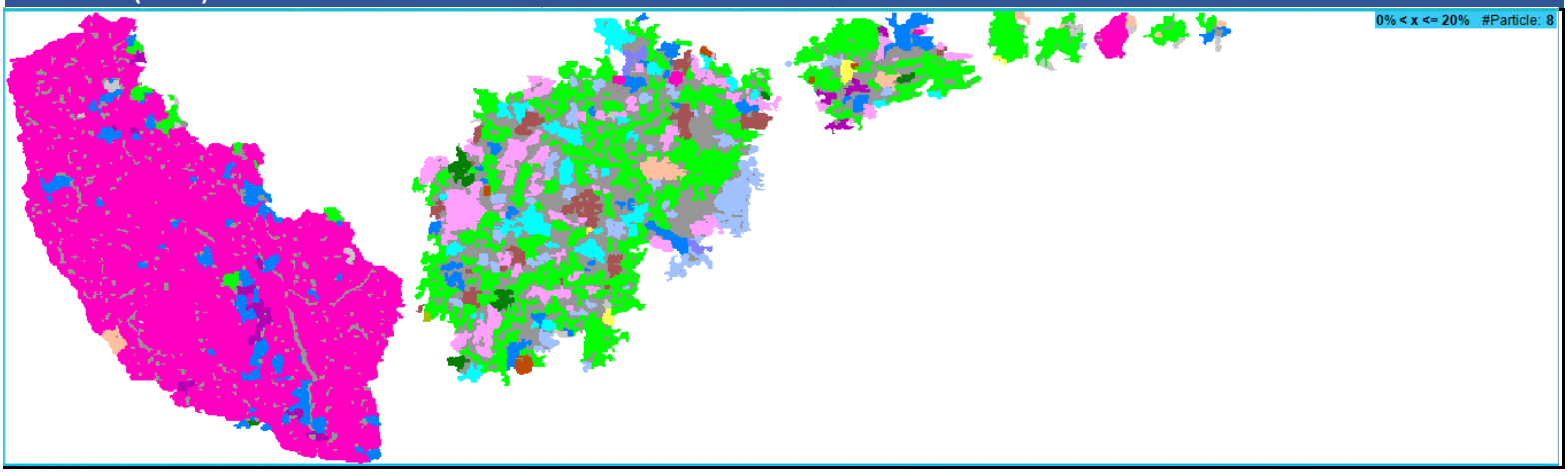
High Grade Middlings (60-80%)

Well-liberated (80-100%)



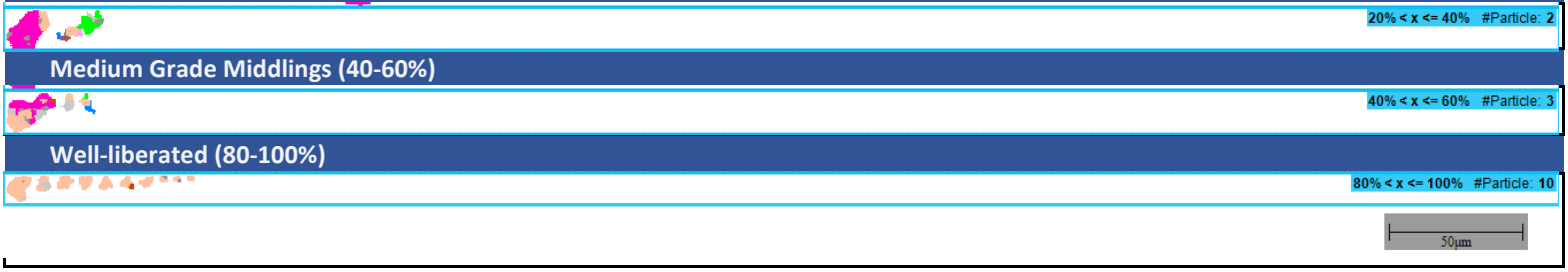
Monazite ((Ce,La,Th,Nd) PO4)

Locked (<20%)



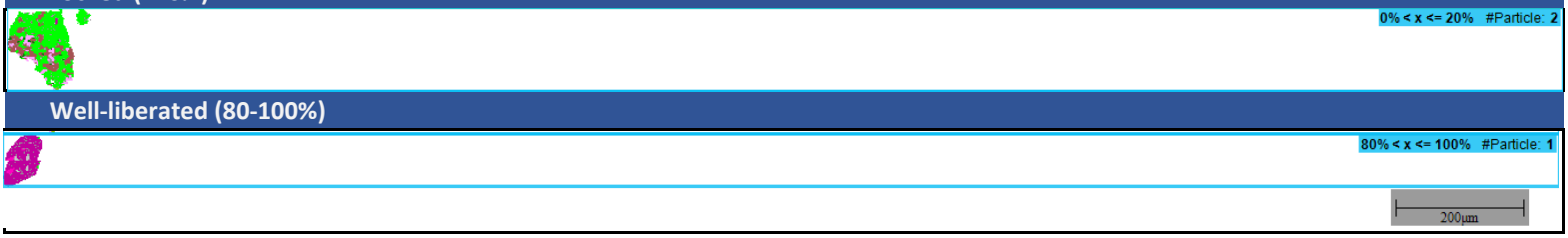
Liberation Class Particle Image

Low Grade Middlings (20-40%)



Zircon ($(Zr,Hf)SiO_4$)

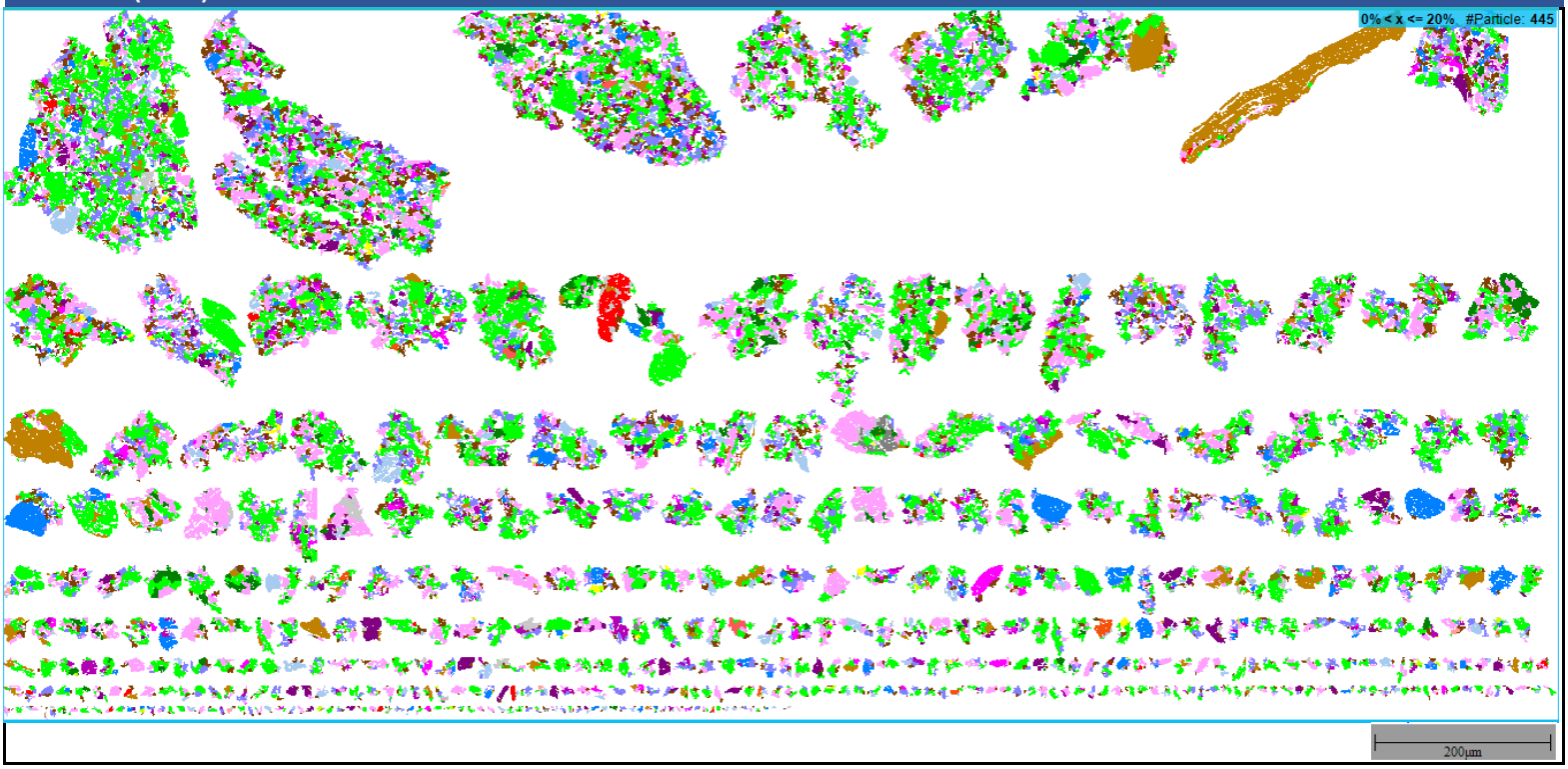
Locked (<20%)



TSF "Allan"_HG

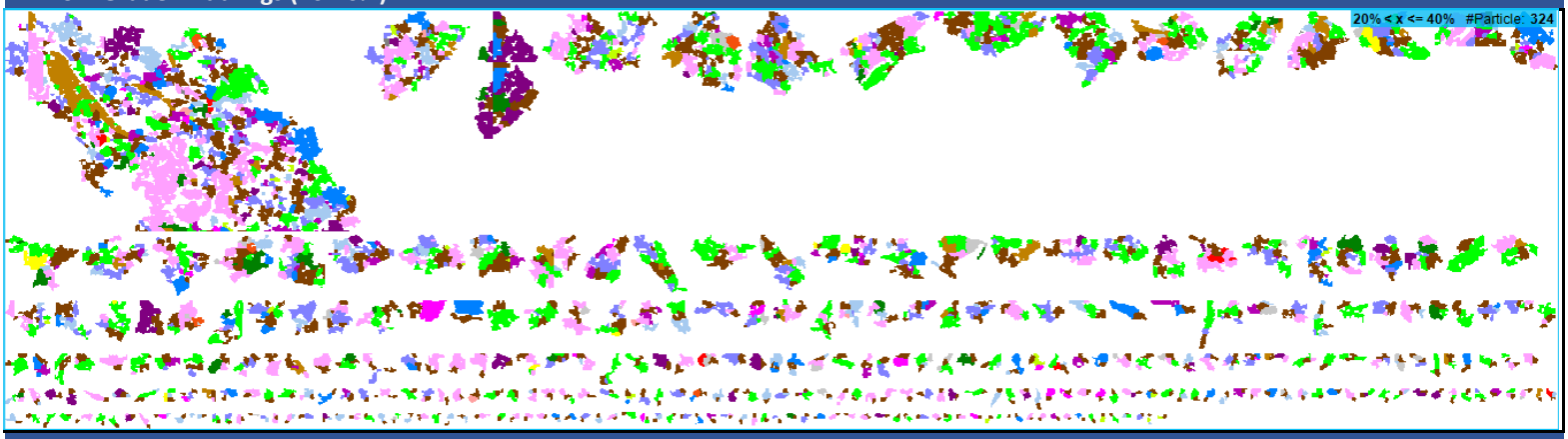
Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Locked (<20%)

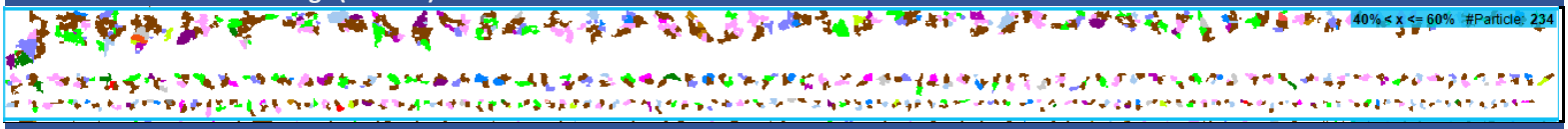


Liberation Class Particle Image

Low Grade Middlings (20-40%)

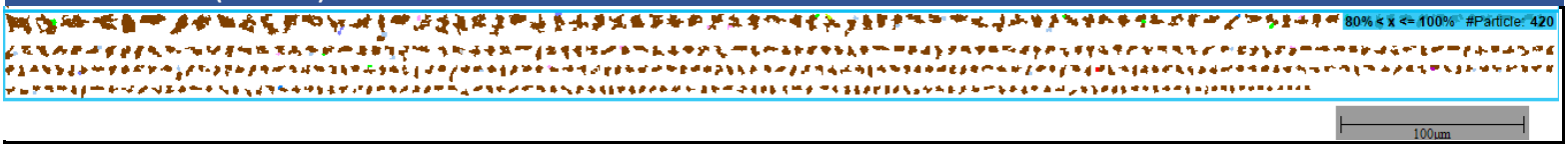


Medium Grade Middlings (40-60%)



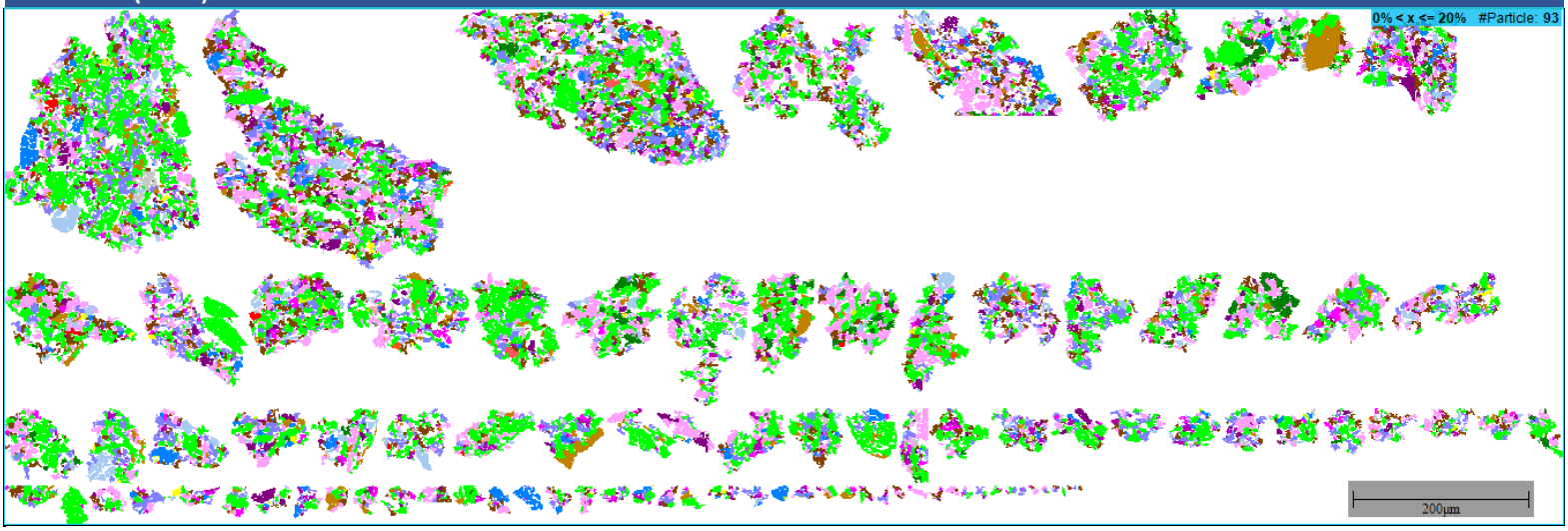
High Grade Middlings (60-80%)

Well-liberated (80-100%)



Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

Locked (<20%)



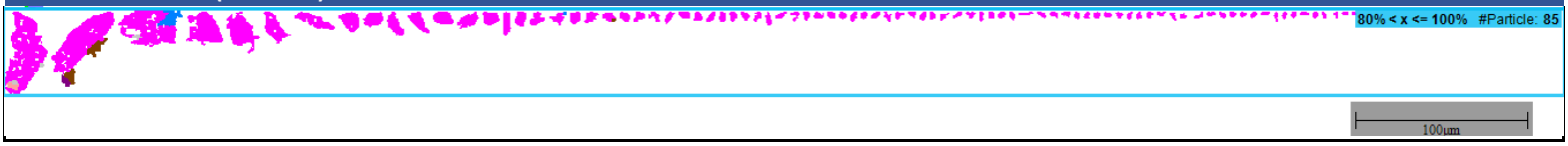
Liberation Class Particle Image

Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)

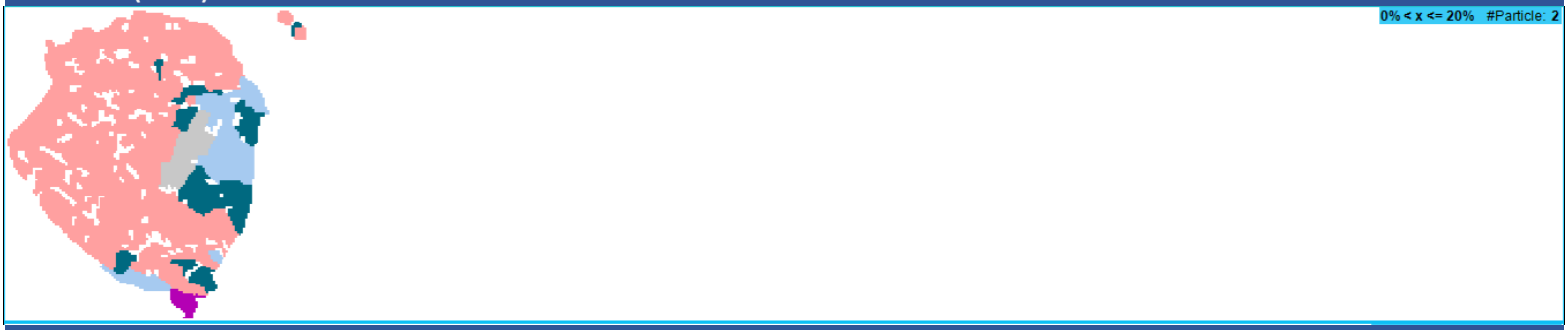
High Grade Middlings (60-80%)

Well-liberated (80-100%)



Carbocernaite ((Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O)

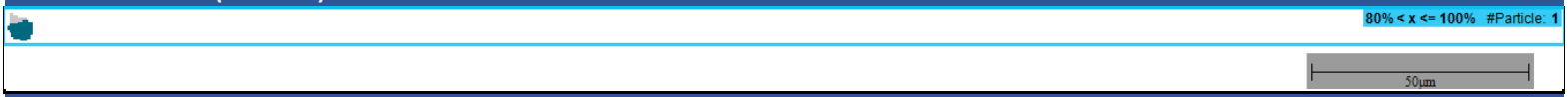
Locked (<20%)



Low Grade Middlings (20-40%)

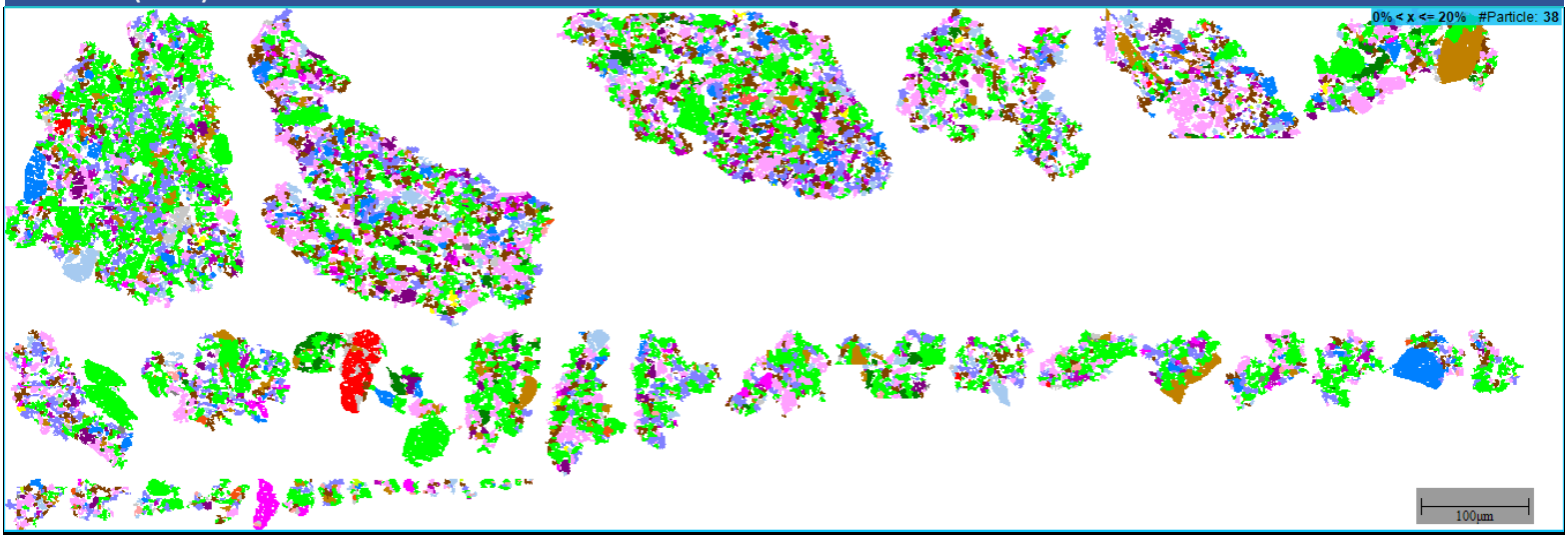
Medium Grade Middlings (40-60%)

Well-liberated (80-100%)



Monazite ((Ce,La,Th,Nd) PO4)

Locked (<20%)

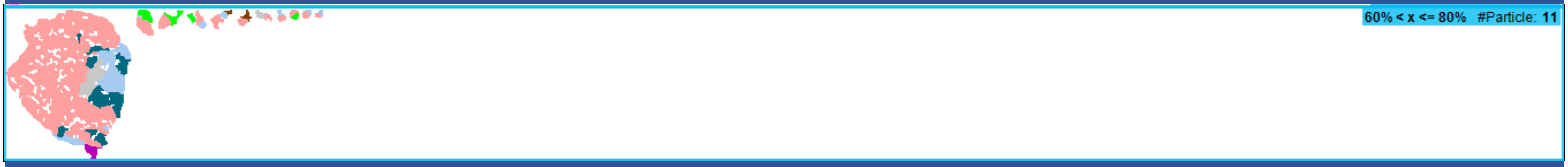


Liberation Class Particle Image

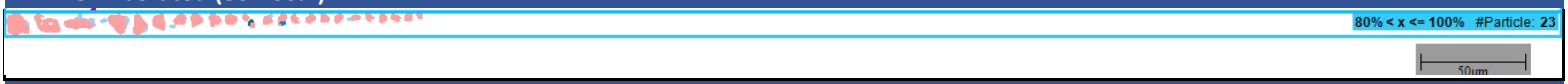
Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)

High Grade Middlings (60-80%)

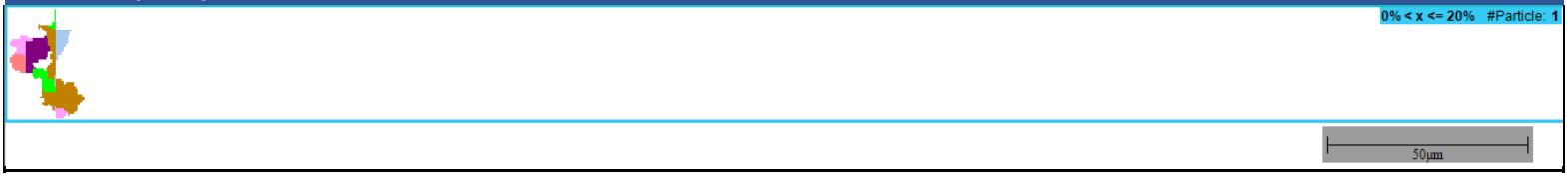


Well-liberated (80-100%)



Zircon ($(Zr,Hf)SiO_4$)

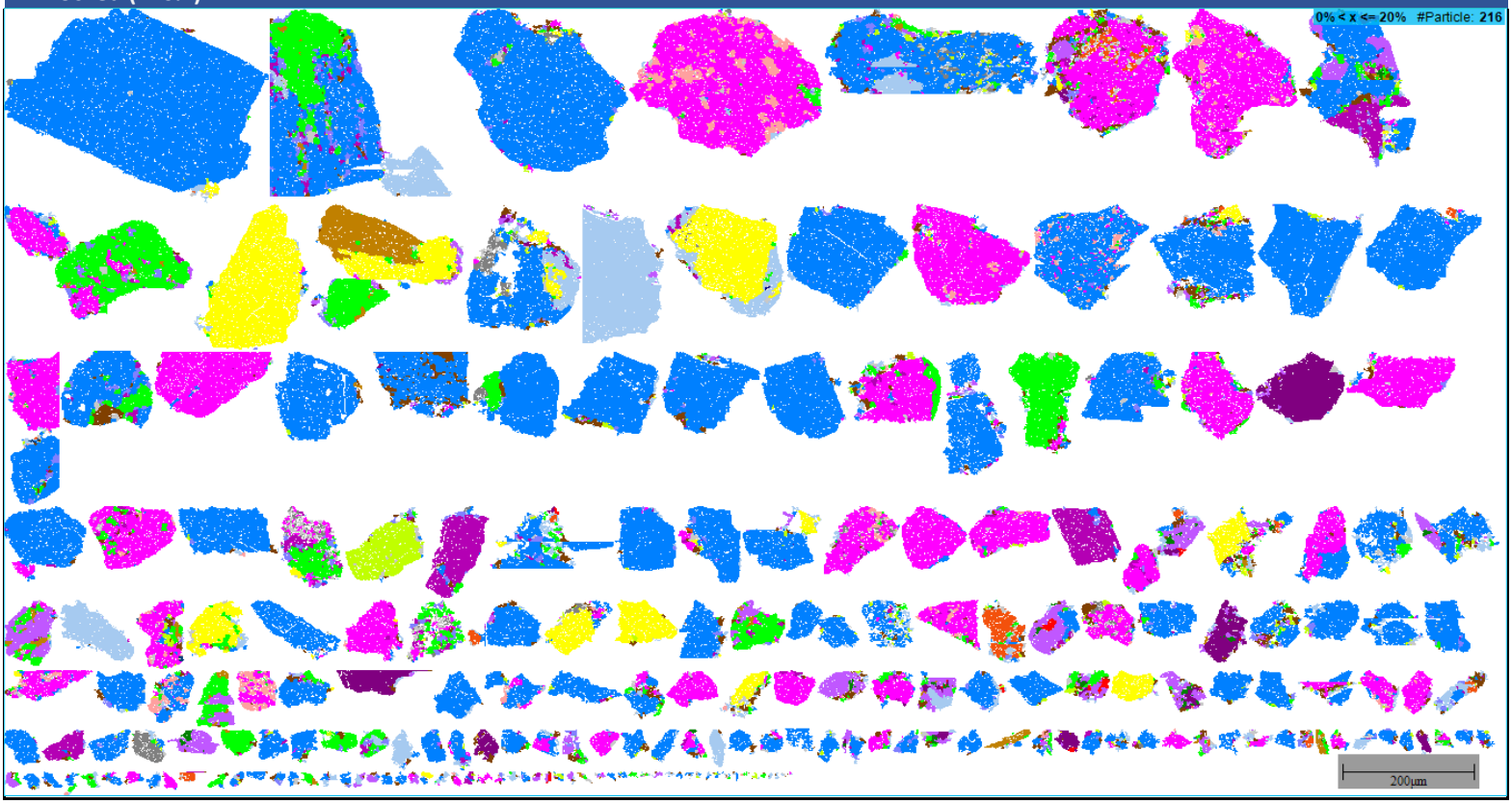
Locked (<20%)



LNCS Composite_HG

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Locked (<20%)

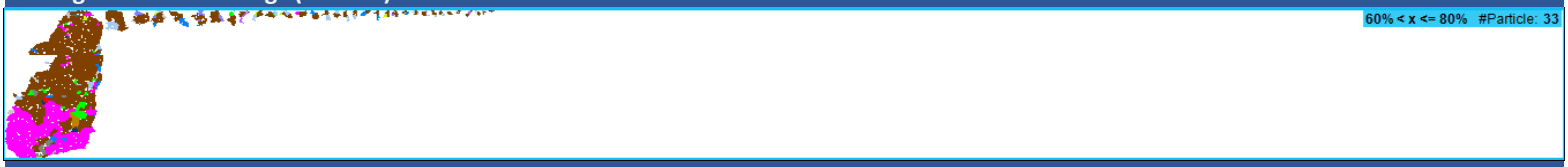


Liberation Class Particle Image

Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)

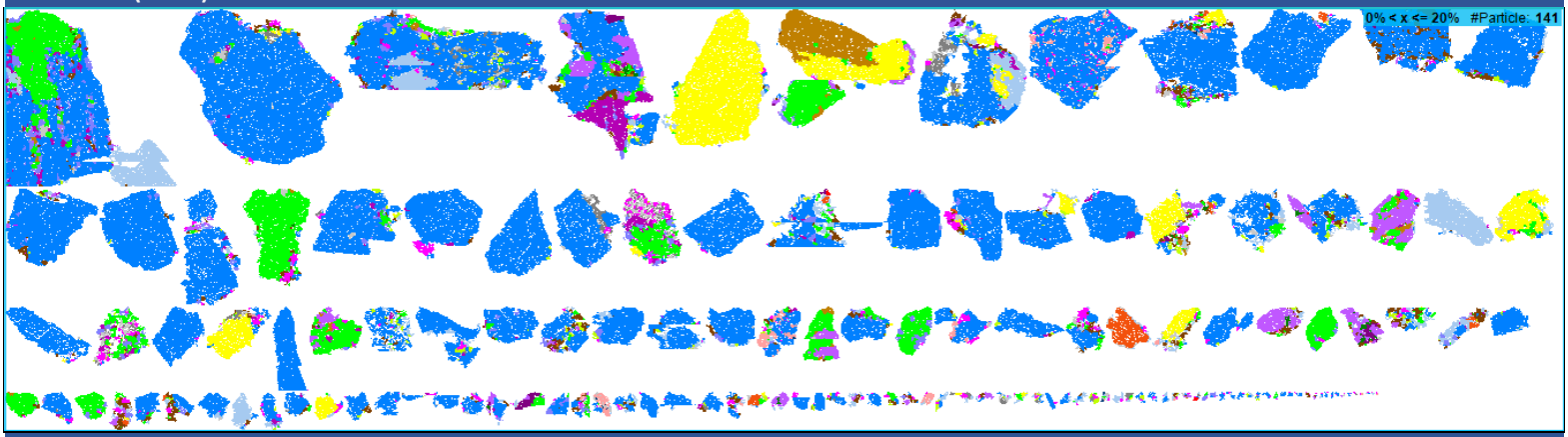
High Grade Middlings (60-80%)



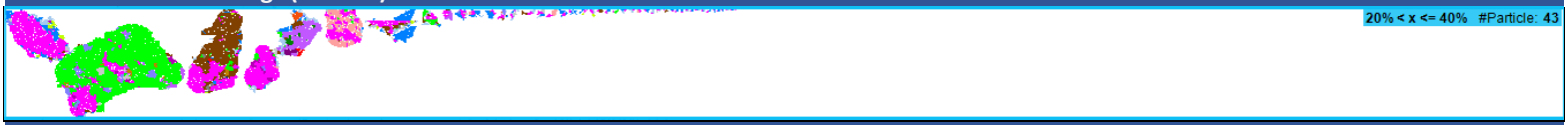
Well-liberated (80-100%)

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

Locked (<20%)



Low Grade Middlings (20-40%)

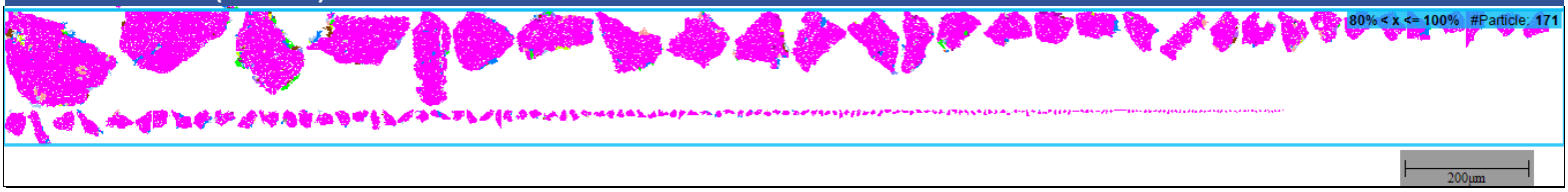


Medium Grade Middlings (40-60%)

High Grade Middlings (60-80%)

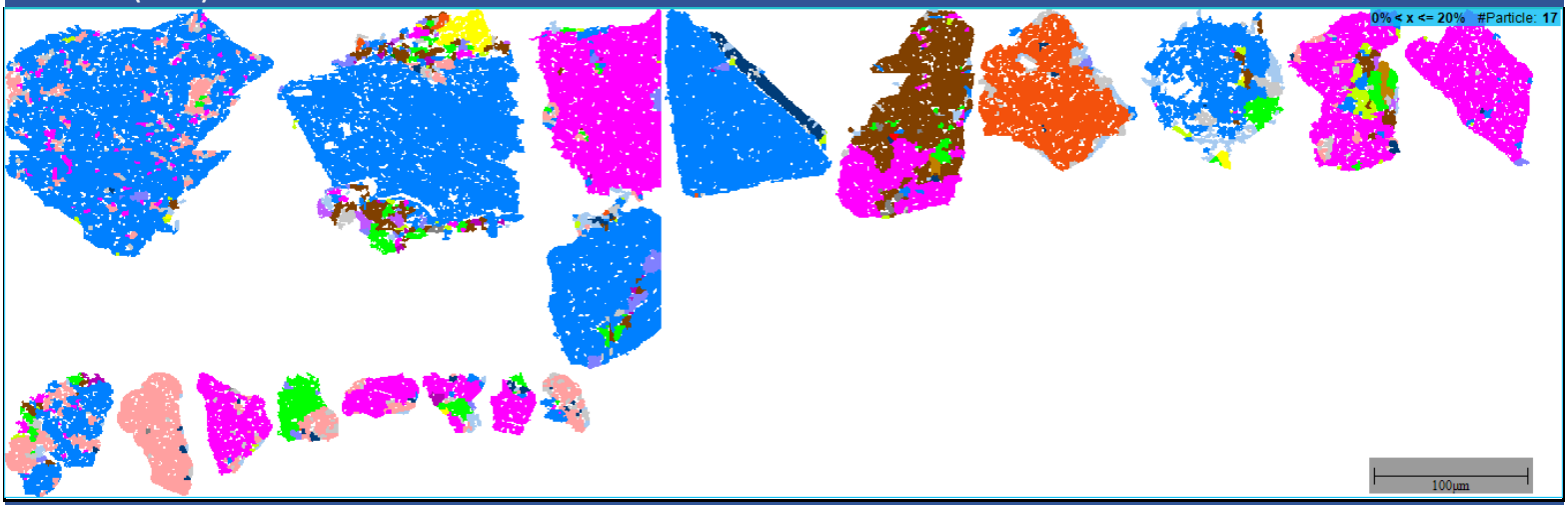
Liberation Class Particle Image

Well-liberated (80-100%)



Carbocernaite ((Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O)

Locked (<20%)

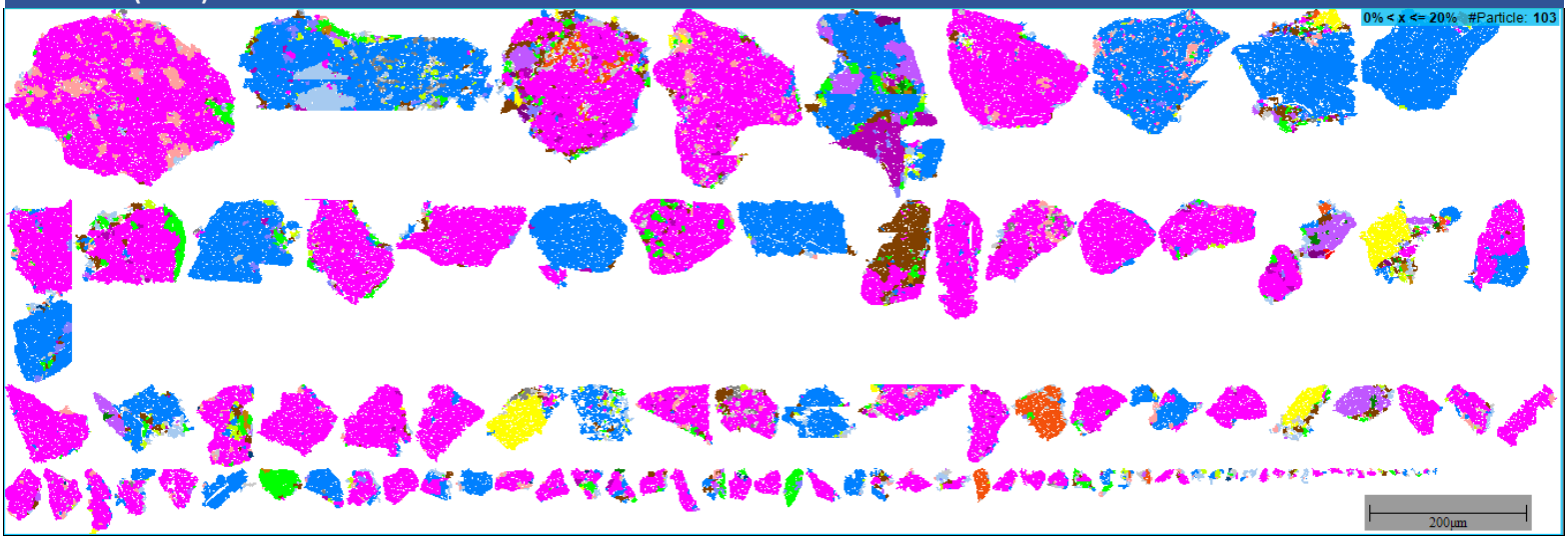


Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)

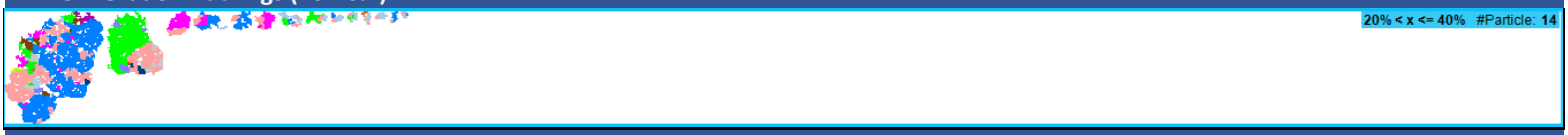
Monazite ((Ce,La,Th,Nd) PO4)

Locked (<20%)



Liberation Class Particle Image

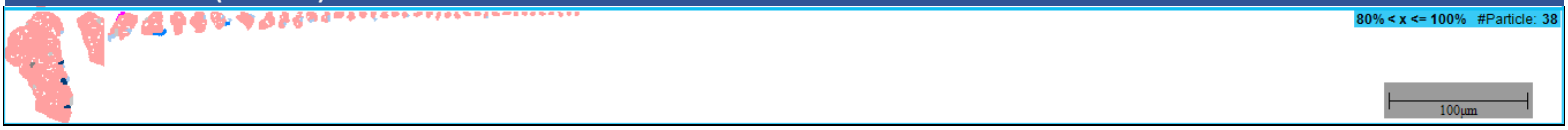
Low Grade Middlings (20-40%)



Medium Grade Middlings (40-60%)

High Grade Middlings (60-80%)

Well-liberated (80-100%)

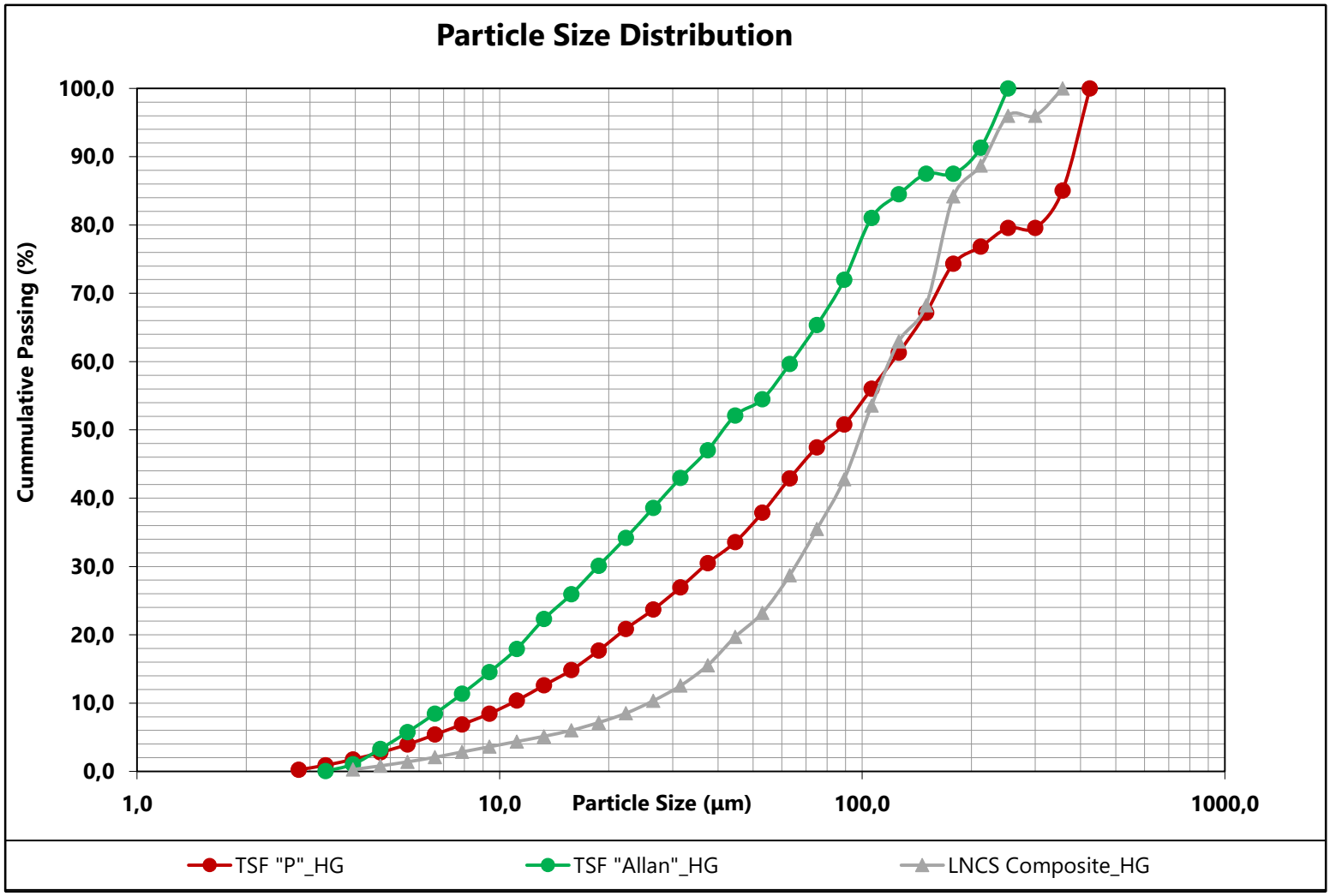


Mineralogical Report - Size Distribution

Size	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
424,3	100,0		
356,8	85,1		100,0
300,0	79,6		96,0
252,3	79,6	100,0	96,0
212,1	76,8	91,3	88,7
178,4	74,3	87,5	84,2
150,0	67,2	87,5	68,3
126,1	61,3	84,5	63,0
106,1	56,0	81,0	53,6
89,2	50,8	72,0	42,8
75,0	47,5	65,4	35,5
63,1	42,9	59,6	28,7
53,0	37,9	54,5	23,2
44,6	33,6	52,1	19,7
37,5	30,5	47,0	15,5
31,5	26,9	43,0	12,6
26,5	23,7	38,6	10,3
22,3	20,9	34,2	8,5
18,8	17,7	30,1	7,2
15,8	14,8	25,9	6,0
13,3	12,6	22,3	5,1
11,2	10,4	17,9	4,4
9,4	8,5	14,6	3,6
7,9	6,9	11,4	2,9
6,6	5,4	8,5	2,1
5,6	3,9	5,8	1,4
4,7	2,8	3,3	0,8
3,9	1,8	1,0	0,3
3,3	0,9	0,1	
2,8	0,2		

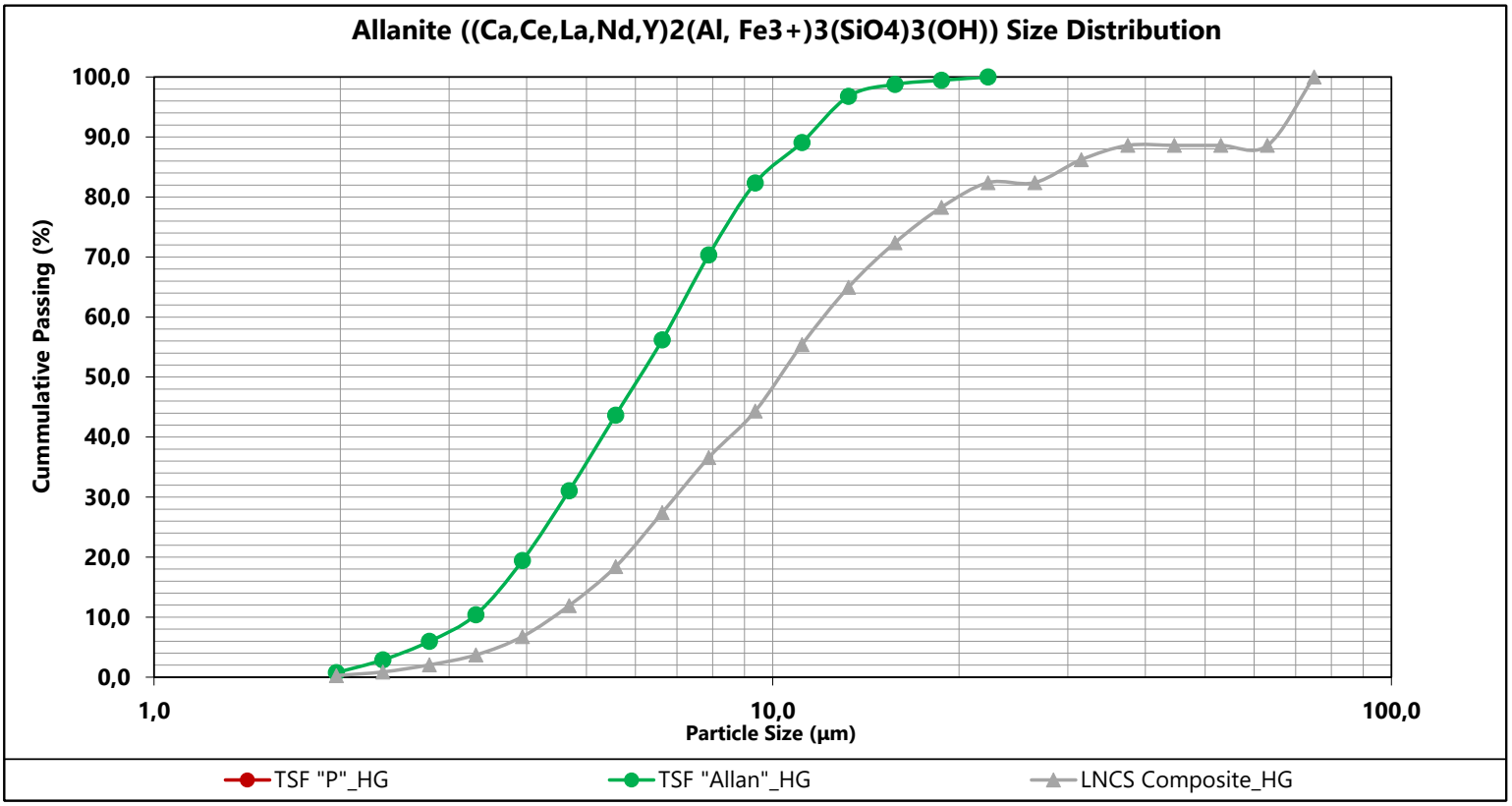
Mineralogical Report - Size Distribution

P-Value	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
P-80	304,5	104,2	170,9
P-50	85,8	41,7	100,5
P-20	21,3	12,1	45,4



Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Size	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
75,0			100,0
63,1			88,6
53,0			88,6
44,6			88,6
37,5			88,6
31,5			86,2
26,5			82,4
22,3		100,0	82,4
18,8		99,5	78,3
15,8		98,8	72,4
13,3		96,8	65,0
11,1		89,1	55,4
9,4		82,4	44,4
7,9		70,3	36,6
6,6		56,2	27,4
5,6		43,7	18,4
4,7		31,1	11,9
3,9		19,5	6,8
3,3		10,4	3,7
2,8		6,0	2,1
2,3		2,9	0,9
2,0		0,8	0,3
P-Value	**TSF "P"_HG**	**TSF "Allan"_HG**	**LNCS Composite_HG**
P-80		9,1	20,2
P-50		6,1	10,3
P-20		4,0	5,8

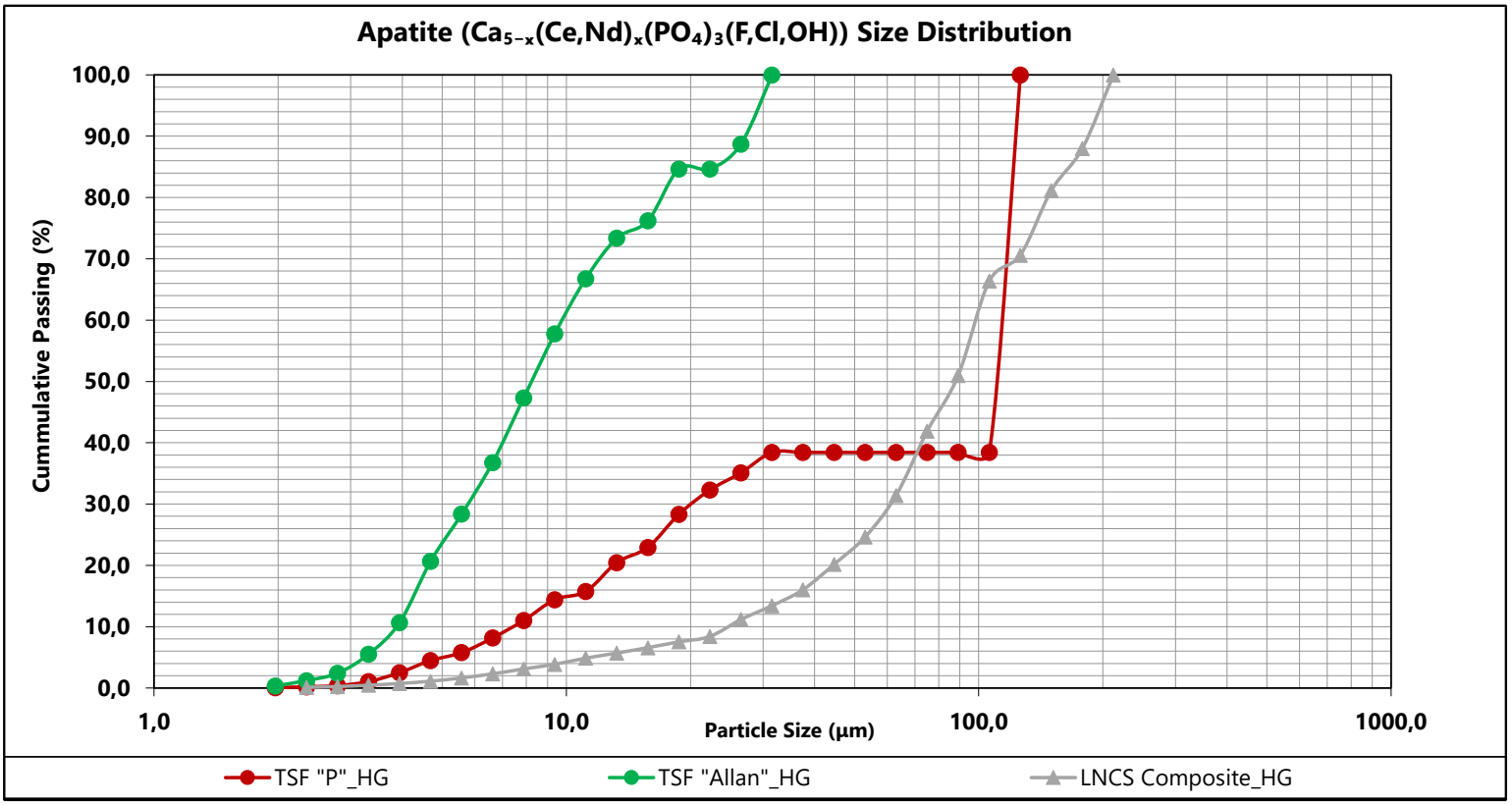


Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

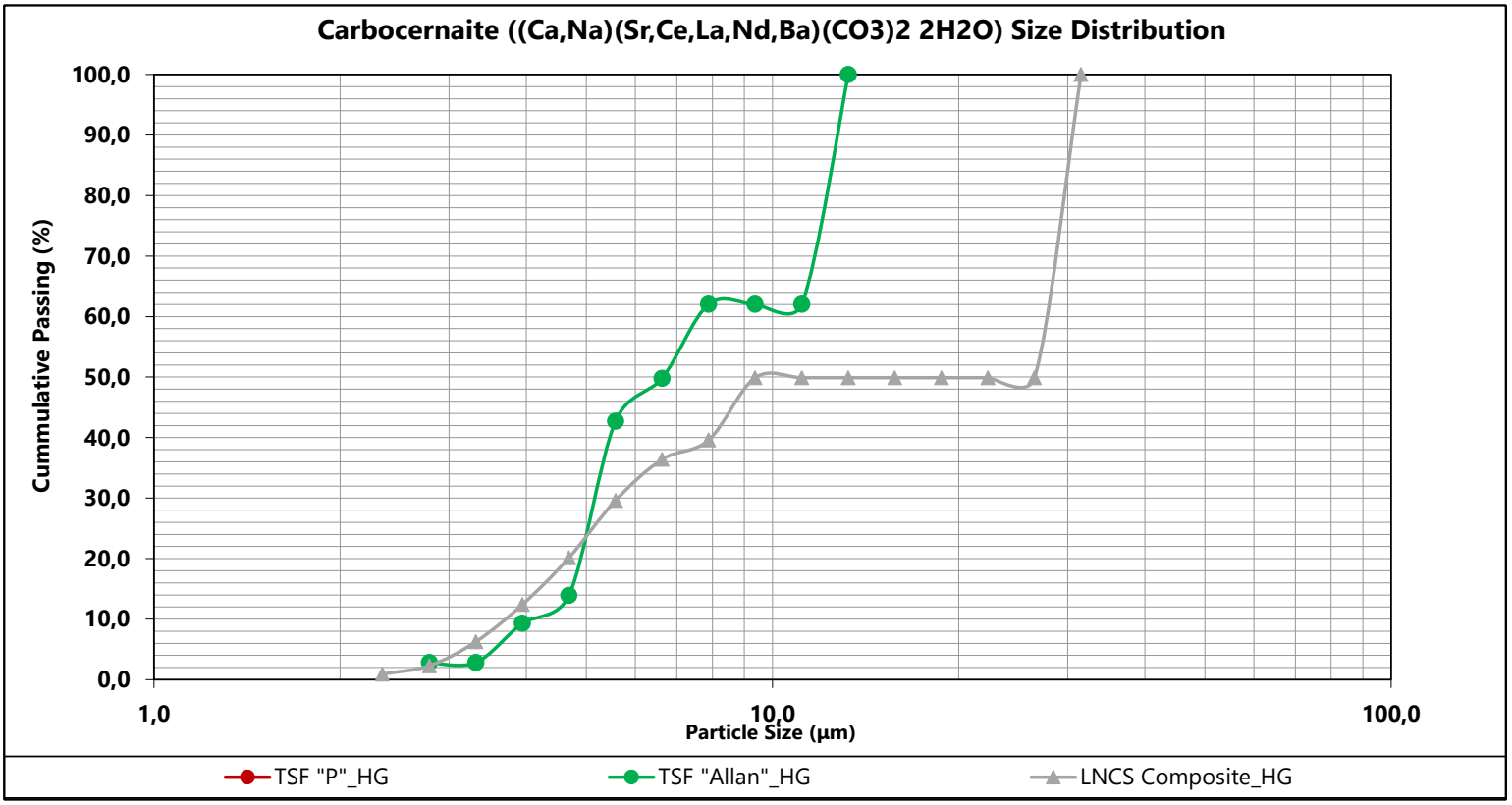
Size	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
212,1			100,0
178,4			88,0
150,0			81,2
126,1	100,0		70,6
106,1	38,4		66,4
89,2	38,4		51,0
75,0	38,4		41,9
63,1	38,4		31,4
53,0	38,4		24,6
44,6	38,4		20,2
37,5	38,4		16,0
31,5	38,4	100,0	13,4
26,5	35,1	88,7	11,2
22,3	32,3	84,7	8,4
18,8	28,3	84,7	7,5
15,8	22,9	76,2	6,6
13,3	20,5	73,4	5,7
11,1	15,8	66,8	4,9
9,4	14,4	57,8	3,9
7,9	11,0	47,3	3,1
6,6	8,2	36,8	2,3
5,6	5,8	28,4	1,7
4,7	4,5	20,7	1,1
3,9	2,5	10,7	0,7
3,3	1,0	5,5	0,5
2,8	0,4	2,4	0,2
2,3	0,2	1,2	0,1
2,0	0,1	0,4	

Mineralogical Report - Mineral of Interest Grain Size

P-Value	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
P-80	119,6	17,1	147,4
P-50	109,8	8,3	87,6
P-20	13,0	4,6	44,3

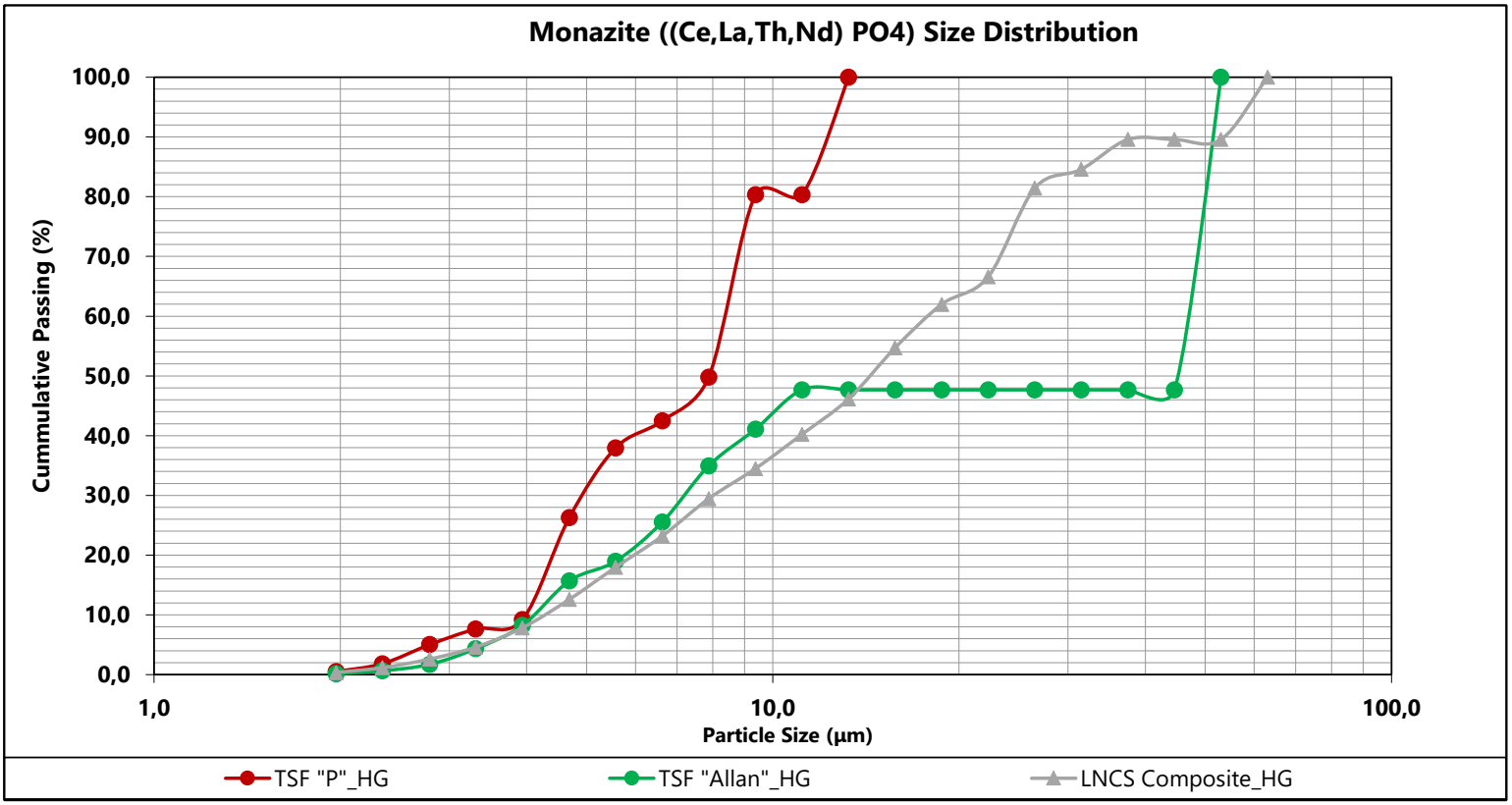


Carbocernaite ((Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O)			
Size	**TSF "P"_HG**	**TSF "Allan"_HG**	**LNCS Composite_HG**
31,5			100,0
26,5			49,9
22,3			49,9
18,8			49,9
15,8			49,9
13,3		100,0	49,9
11,1		62,0	49,9
9,4		62,0	49,9
7,9		62,0	39,6
6,6		49,8	36,4
5,6		42,7	29,6
4,7		13,9	20,2
3,9		9,3	12,4
3,3		2,8	6,3
2,8		2,8	2,3
2,3			0,9
P-Value	**TSF "P"_HG**	**TSF "Allan"_HG**	**LNCS Composite_HG**
P-80		12,2	29,5
P-50		6,7	26,5
P-20		4,9	4,7



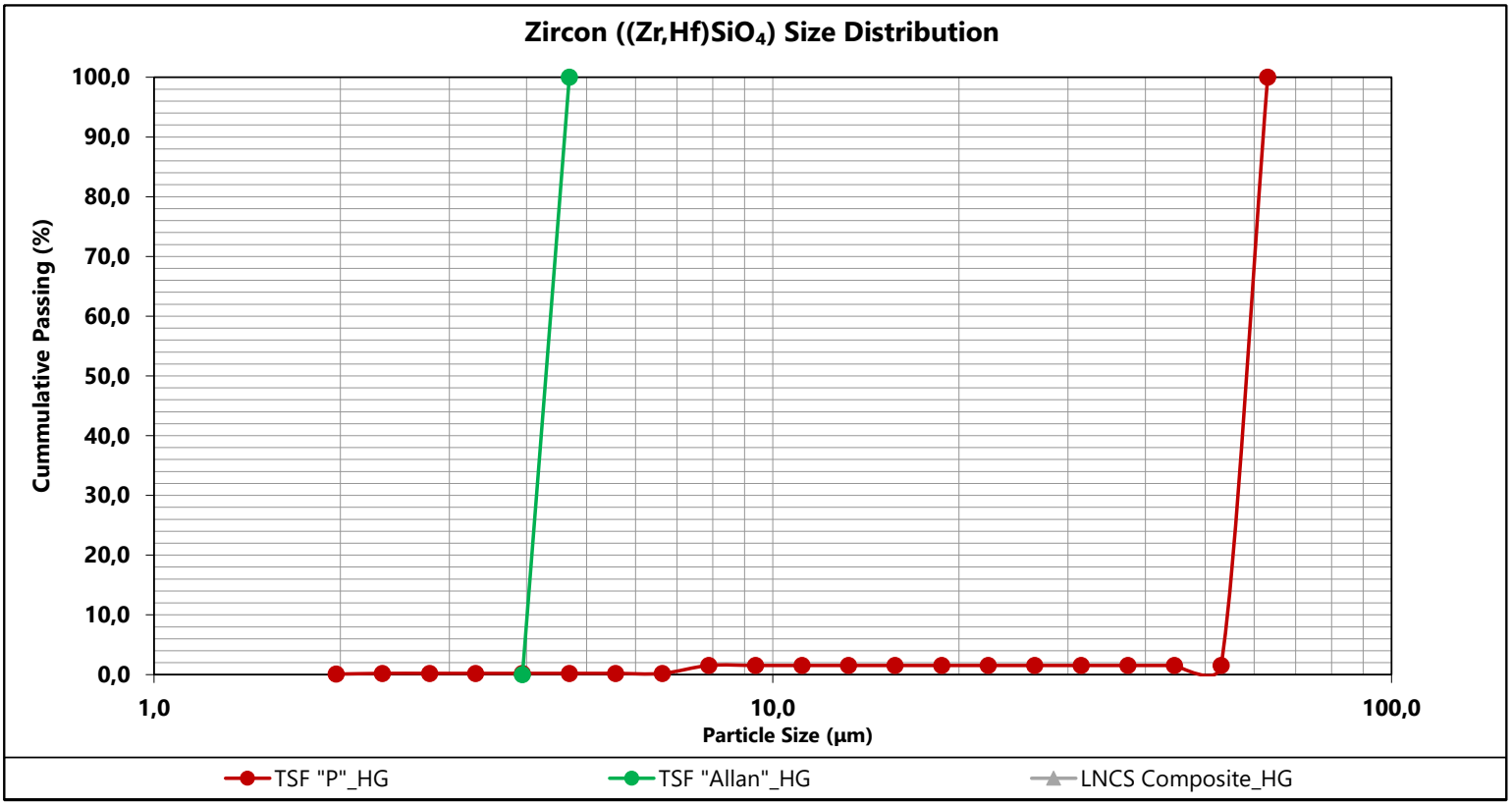
Monazite ((Ce,La,Th,Nd) PO4)

Size	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
63,1			100,0
53,0		100,0	89,6
44,6		47,7	89,6
37,5		47,7	89,6
31,5		47,7	84,6
26,5		47,7	81,4
22,3		47,7	66,6
18,8		47,7	62,0
15,8		47,7	54,7
13,3	100,0	47,7	46,2
11,2	80,3	47,7	40,2
9,4	80,3	41,1	34,5
7,9	49,8	35,0	29,5
6,6	42,5	25,6	23,2
5,6	37,9	19,0	18,0
4,7	26,3	15,7	12,6
3,9	9,2	8,2	7,8
3,3	7,6	4,3	4,6
2,8	5,0	1,7	2,6
2,3	1,8	0,6	1,2
2,0	0,5	0,2	0,4
P-Value	**TSF "P"_HG**	**TSF "Allan"_HG**	**LNCS Composite_HG**
P-80	9,4	49,8	26,1
P-50	7,9	45,0	14,4
P-20	4,4	5,7	6,0



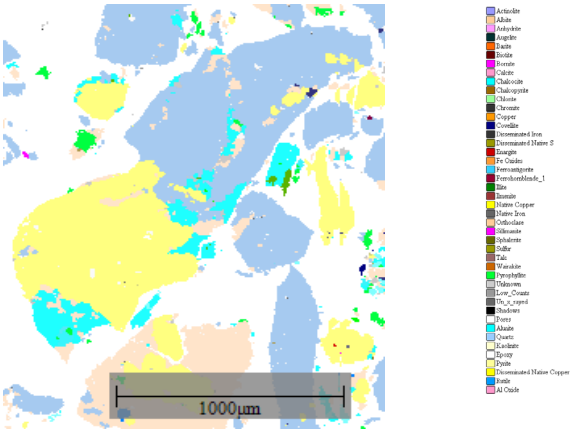
Zircon ($(Zr,Hf)SiO_4$)

Size	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
63,1	100,0		
53,0	1,5		
44,6	1,5		
37,5	1,5		
31,5	1,5		
26,5	1,5		
22,3	1,5		
18,8	1,5		
15,8	1,5		
13,3	1,5		
11,2	1,5		
9,4	1,5		
7,9	1,5		
6,6	0,2		
5,6	0,2		
4,7	0,2	100,0	
3,9	0,2		
3,3	0,2		
2,8	0,2		
2,3	0,2		
2,0	0,1		
P-Value	**TSF "P"_HG**	**TSF "Allan"_HG**	**LNCS Composite_HG**
P-80	61,0	4,5	
P-50	58,0	4,3	
P-20	54,9	4,1	



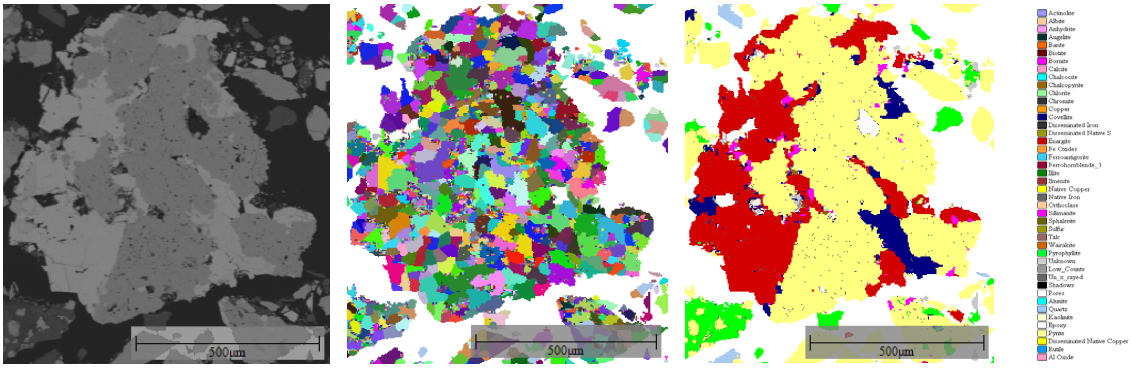
Mineralogical Report - Glossary

Scanning Electron Microscope (SEM)	An electron based mineralogical measurement technique. This method is also supported by Energy Dispersive Spectrometry (EDS), which emits x-ray to define pointed mineral based on the chemical composition.
Mineral Liberation Analysis (MLA)	The Mineral Liberation Analyzer (MLA) is an automated mineral analysis system that can identify minerals in polished sections of drill core, particulate or lump materials, and quantify a wide range of mineral characteristics, such as mineral abundance, grain size and liberation. Mineral texture and liberation potential are fundamental properties of ore and drive its economic treatment; the data gathered by the MLA is therefore invaluable to geologists, mineralogists. At PT. Geoservices, the MLA software is Advance Mineralogical Identification Characterization System (AMICS) by Bruker.
Backscattered Electron (BSE)	BSE come from the deeper regions of the sample. BSE images show high sensitivity to differences in atomic number, The higher the atomic number, the brighter the image appears in the image.
Particle Mineral Analysis (PMA)	This analysis provides mineral composition (including non-sulfide gangue), element mineral deportment, and mineral fragmentation characteristics (liberation and association). The analysis normally performed on each fraction of sized samples, typically four fractions per sample.
Bulk Mineral Analysis	Rapid line scan analysis in one direction only to provide good statistics on bulk mineralogy. This measurement type not measure full sample area, only intersection lines. BMA is very fast mode. It provides modal mineralogy, calculated assay, estimated particle, grain size, and mineral association data.
Trace Mineral Search	Detailed particle mineralogical information on trace mineral (e.g. precious metals, penalty minerals, and other mineral of interest). This analysis provides mineral liberation, association, and grain size of target minerals.
Specific Mineral Search	Detailed particle mineralogical information on only specific Minerals of Interest (MoI).
Field Scan	Detailed mapping of larger saples (e.g. thin sections).
Modal Mineralogy	The bulk mineralogical composes the sample. Each analysed mineral provides the weight % (wt%) which is calculated from measurement area and uses average mineral densities. The presented mineralogy is in semi-quantitative manner and each minerals are classified by their spectra.
Assay Reconciliation	A comparison between chemical assay and AMICS assay as data validation.
Elemental Map	Distribution of selected element on several grain at certain area. Each elements will be distinguished based on software-based color. This mode is available on Esprit 2.1 software by Bruker.
Elemental Deportment	Quantify the average distribution of specific elements among the targeted minerals with several common gangue minerals on the sample. The elemental deportment is also compared to chemical assay as data validation.
Mineral Association	A spatial relationship measurement in terms of shared grain boundaries and mineral association refers to adjacency. Two minerals are "associated" if a pixel of one of the minerals occurs adjacent to a pixel of the other mineral. In this report association takes into account both vertically- and horizontally-adjacent pixels.
Particle	An aggregate of mineral grains. One particle may contain more than one mineral. On the other hand, grain is an individual mineral. A particle usually refers to a fragment of a rock or ore, the size of which is dependent on crushing and milling conditions .



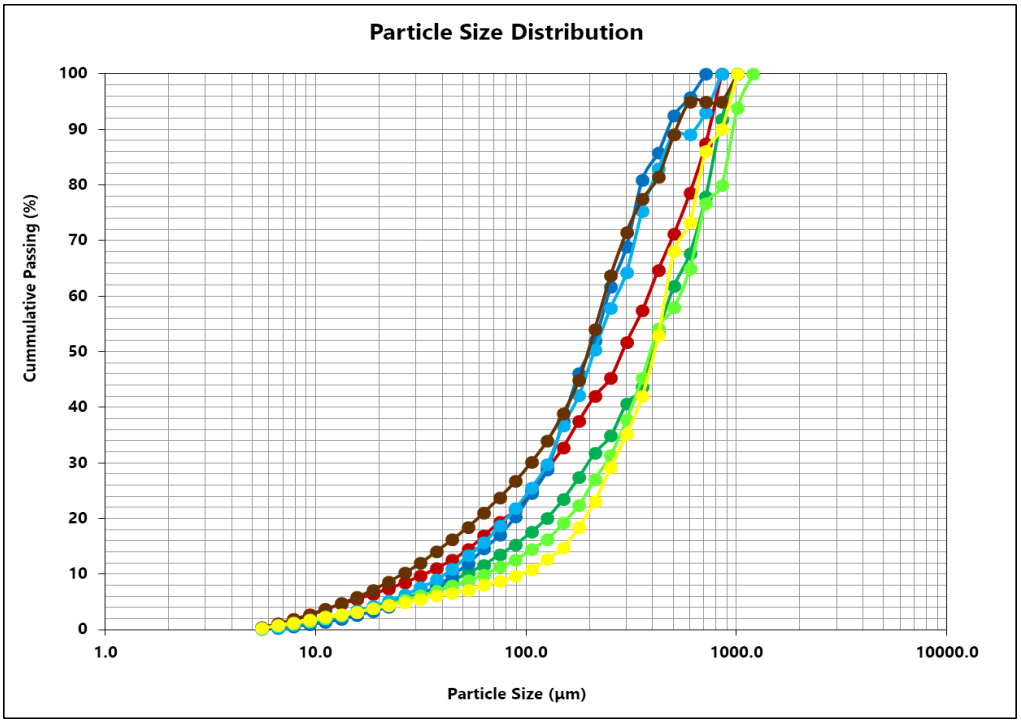
Segmented

Segmented data is an individual data based BSE color similarities. One mineral grain contains several segmented area.



Grain Size

The calculated grain size distribution is presented as cumulative curves. The cumulative weight percentage of grains less than a given grain size for each size fraction is plotted against the logarithm of the particle size



Mineral Image

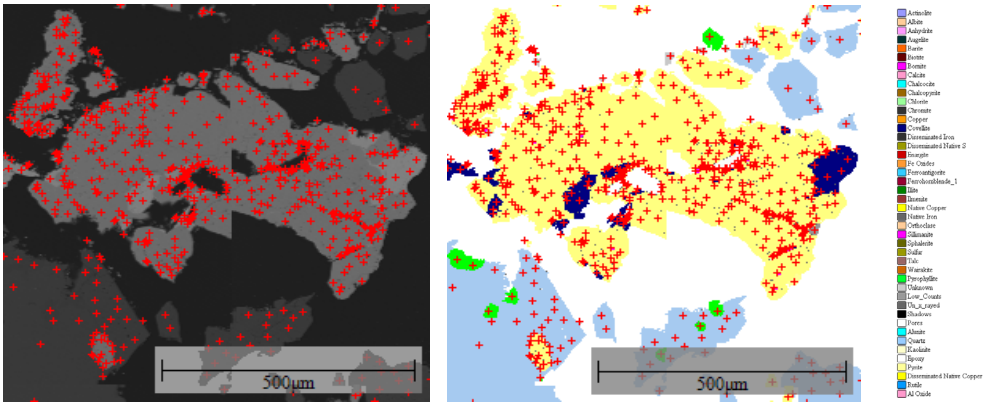
False color images of certain mineral distribution. The images are determined by the user.

Mineral Grouping

Several minerals which have the main mineral with one or more attached elements/ minerals. The main mineral has the most intense spectra than the attached element. The group name is based on the most intense mineral presences according to spectra peaks.

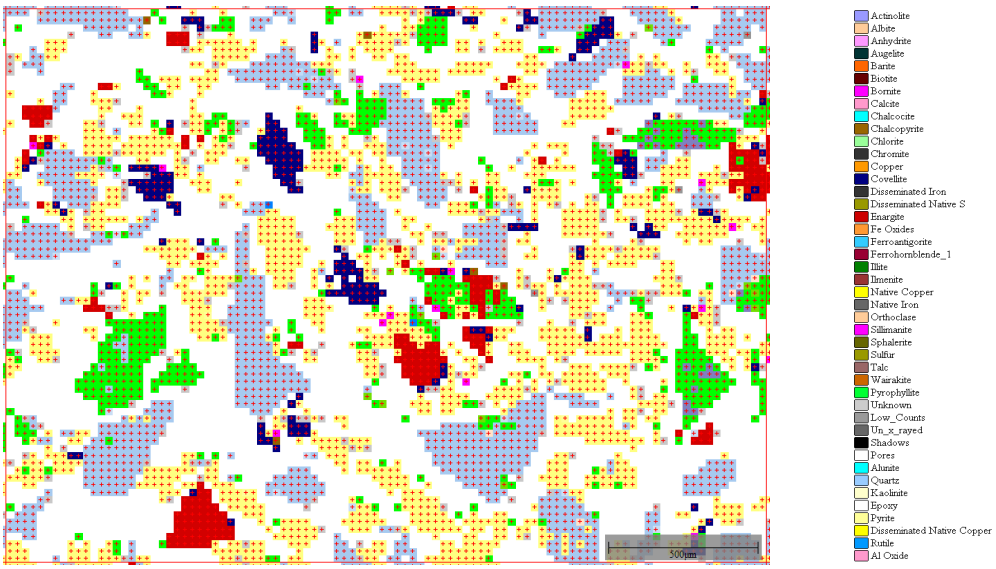
Particle Mode

AMICS measurement mode distinguished by certain mineral BSE level. Different BSE level will be subjected by the x-ray. One x-ray will classify one boundary which has similar BSE level and determine it as a certain mineral. This measurement mode provides a faster scanning mode.



Mapping Mode

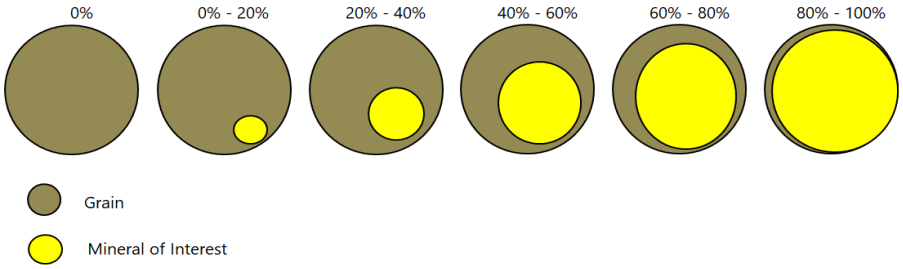
A grid-based measurement mode in AMICS. The x-ray will be subjected to each minerals and scanned based on certain x-ray spacing. The x-ray is also subjected to certain mineral based on their boundaries, therefore epoxy will not be scanned. The result is a pixel-like image. This scanning mode consumes longer measurement time, however it provides more detailed result.



Mineral Liberation

The Mineral liberation examines mineral compositon on a particle by particle basis. It focuses on the mineral of interest liberation degree. It is calculated according to one of two methods, using area % or surface area% that the target mineral occupies within the particle.

Mineral Locking	It describes the association of minerals (not necessarily adjacent minerals). Mineral locking is also related to the number of particle locked to Mineral of Interest (MoI), including "binary" (more than 2 minerals attached to MoI) and "ternary" (more than 3 minerals attached to MoI). On the other hand, "liberated" implies for non-locking condition of MoI to other minerals.
Locked	In the context of this report, a mineral of interest is considered locked when the surface area % of the mineral over the total particle is ≤ 20%.
Exposed	A mineral/grain/particle is considered to be an exposed particle when the surface area% of the mineral of interest in that particle falls between 20 and 80% area%/surface area%.
Liberated	In the context of this report a particle containing > 80 surface area % of the mineral of interest is considered " liberated". The set limit might vary depending on the mineral or process used to treat it. Gold only has to be in contact with the leach medium and thus only needs to be exposed.
Liberation Classes	The classification of targeted mineral (mineral of interest) based on the degree of liberation. It divided into five classes. "Well Liberated" refers to targeted mineral comprises between 80 and 100 % by surface area of the particle. "High Grade Middling" refers to targeted mineral comprises between 60 and 80 by surface area of the particle. "Medium Grade Middling" refers to targeted mineral comprises between 40 and 60 % by surface area of the particle. "Low Grade Middling" refers to targeted mineral comprises between 20 and 40 % by surface area of the particle. "Locked" refers to targeted mineral below 20 % by surface area of the particle.
Size Distribution	Describes list of the particles/grains size and its cummulative percentage. Graph are plotted in logarithmic scale.



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APPENDICES

SCHEME	ANALYTE CODE	DESCRIPTION	UNIT	D.L	TSF "P"_HG	TSF "Allan"_HG	LNCS Composite_HG
MET_GAM04_MS_REE	Ce	Cerium	ppm	0,1	2021,0	3853,5	8458,5
MET_GAM04_MS_REE	Dy	Dysprosium	ppm	0,05	34,20	65,60	143,95
MET_GAM04_MS_REE	Er	Erbium	ppm	0,03	10,60	18,35	45,05
MET_GAM04_MS_REE	Eu	Europium	ppm	0,02	45,30	83,10	186,35
MET_GAM04_MS_REE	Gd	Gadolinium	ppm	0,05	98,55	199,45	429,25
MET_GAM04_MS_REE	Ho	Holmium	ppm	0,01	4,15	8,30	18,20
MET_GAM04_MS_REE	La	Lanthanum	ppm	0,1	891,0	1550,8	3577,6
MET_GAM04_MS_REE	Lu	Lutetium	ppm	0,01	0,80	1,15	2,25
MET_GAM04_MS_REE	Nb	Niobium	ppm	0,05	48,05	40,30	35,90
MET_GAM04_MS_REE	Nd	Neodymium	ppm	0,1	1226,2	2420,8	5379,4
MET_GAM04_MS_REE	Pr	Praseodymium	ppm	0,02	299,65	588,65	1301,55
MET_GAM04_MS_REE	Sc	Scandium	ppm	0,5	15,0	8,8	7,0
MET_GAM04_MS_REE	Sm	Samarium	ppm	0,03	181,50	376,80	837,85
MET_GAM04_MS_REE	Tb	Terbium	ppm	0,01	9,25	16,40	36,85
MET_GAM04_MS_REE	Th	Thorium	ppm	0,05	89,45	178,90	354,15
MET_GAM04_MS_REE	Tm	Thulium	ppm	0,01	1,95	3,25	5,80
MET_GAM04_MS_REE	U	Uranium	ppm	0,05	53,25	147,05	235,90
MET_GAM04_MS_REE	Y	Yttrium	ppm	0,1	126,8	219,4	476,5
MET_GAM04_MS_REE	Yb	Ytterbium	ppm	0,03	5,35	9,90	18,90
GOI04_ICP	Ba	Barium	%	0,01	1,52	1,08	2,97
MET_GAM04_MS	Ba	Barium	ppm	10	16033	10861	29415
MET_GAM04_MS	Cu	Copper	ppm	0,2	50,0	52,0	118,1
MET_GAM04_MS	Pb	Lead	ppm	0,5	3268,2	6504,5	9260,8
MET_GAM04_MS	Zn	Zinc	ppm	2	269	250	1134
MET_LECO_01	S_TOT	Total Sulfur	%	0,01	0,88	0,68	3,57
MET_LECO_01	C_TOT	Total Carbon	%	0,01	1,71	1,28	7,06
MET_XRFFWR	Al2O3	Aluminium Oxide	%	0,01	10,93	12,84	3,13
MET_XRFFWR	BaO	Barium Oxide	%	0,01	1,64	1,18	2,98
MET_XRFFWR	CaO	Calcium Oxide	%	0,01	9,40	7,11	33,82
MET_XRFFWR	Cr2O3	Chromium Dioxide	%	0,01	0,09	0,09	0,09
MET_XRFFWR	Fe2O3	Iron (III) Oxide	%	0,01	4,86	6,41	4,68
MET_XRFFWR	K2O	Potassium Oxide	%	0,01	4,04	3,82	0,86
MET_XRFFWR	MgO	Magnesium Oxide	%	0,01	4,98	7,60	1,75
MET_XRFFWR	MnO	Manganese Oxide	%	0,01	0,13	0,14	0,18
MET_XRFFWR	Na2O	Sodium Oxide	%	0,01	1,69	1,62	0,39
MET_XRFFWR	P2O5	Phosphorus Pentoxide	%	0,01	1,23	1,44	6,72
MET_XRFFWR	SiO2	Silicon Dioxide	%	0,01	49,70	45,87	13,60
MET_XRFFWR	SO3	Sulphur Trioxide	%	0,01	1,42	0,68	7,79
MET_XRFFWR	SrO	Strontium Oxide	%	0,01	0,49	0,35	0,83
MET_XRFFWR	TiO2	Titanium Dioxide	%	0,01	0,34	0,30	0,28
MET_XRFFWR	LOI	Loss on Ignition	%	0,01	7,53	8,30	17,18
MET_XRFFWR	Sum	Sum of Oxides + LOI	%	0,01	98,43	97,72	94,24

PT. GEOSERVICES - MINERALOGY LABORATORY

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MINERALOGY REPORT

SEM MINERALOGICAL TESTING

CIK.MET.02242E

Prepared for:

Bambra Oy

25 April 2025

Table of Contents

Disclaimer

This report has been prepared for the Client by PT. Geoservices – Mineralogy Laboratory. Other parties, at the discretion of the Client may be given access to the report or receive copies of the report, but only in full including this page, the title page and appendices.

PT. Geoservices Ltd has performed the Mineralogy Services reported herein based on the information provided by the Client to PT. Geoservices Ltd and PT. Geoservices Ltd understanding of the Client's requirements.

PT. Geoservices Ltd is not responsible for any loss or damage arising out of any inaccurate, incomplete or misleading information that the Client gives to PT. Geoservices Ltd or any misunderstanding of the Client's requirements by PT. Geoservices Ltd.

PT. Geoservices Ltd is not responsible for any loss or damage arising out of the performance or non-performance in connection with the Mineralogy Services by any third party that PT. Geoservices Ltd engages to assist it in performing the Mineralogy Services.

PT. Geoservices Ltd has performed the Mineralogy Services and prepared this Report based only upon the sample material that the Client provided to PT. Geoservices Ltd.

PT. Geoservices was not involved in:

1…….the drilling, collection or transportation of the sampels: and

2…….the handling of the samples prior to their delivery to Geoservices

The results presented in this report pertain only to the samples as received.

Samples

Two received samples from Bambra Oy. The samples contain various compositions of silicates, phosphates, sulfates, carbonates/nitrates, sulfides, and oxides/hydroxides. The Minerals of Interest (MoI) in the analysis are the REE-bearing minerals such as allanite, apatite, carbocernaite, monazite, and zircon. The element of interests are Ca, Ce, La, Nd, P and Si.

Drill Core "P"_SEM

The sample is composed mainly of two minerals: Calcite (36.3%) and Quartz (17.8%), as determined by the SEM automated mineralogy method. The sample also contains actinolite, orthoclase, albite, chlorite, and several other minor minerals. The observed Minerals of Interest (MoI) include allanite, apatite, carbocernaite, monazite, and zircon. The concentration of rare earth elements (REEs) in the sample is below 0.1%, with cerium (Ce) at 122 ppm, lanthanum (La) at 125 ppm, and neodymium (Nd) at 43 ppm. Calcium (17.0 wt%) is the dominant element in the assay and is primarily sourced from the calcite. Allanite is predominantly found in locked to low grade middlings. Carbocernaite also occurs mainly in low grade middlings. Monazite and zircon are entirely locked, while apatite is the only mineral in this sample found in a well-liberated condition, based on the liberation data.

Drill Core "Allan"_SEM

The sample is predominantly composed of calcite (47.4%), orthoclase (9.5%), quartz (9.0%), diopside (7.4%), barite (6.9%), and albite (5.6%). Minerals such as chlorite, actinolite, apatite, biotite, carbocernaite, galena, and others are present in amounts below 5%. The observed Minerals of Interest (MoI) include allanite, apatite, carbocernaite, and monazite. The concentration of rare earth elements (REEs) in this sample is higher than in Drill Core "P"_SEM, with cerium (Ce) at 4918 ppm, lanthanum (La) at 990 ppm, and neodymium (Nd) at 995 ppm. Calcium content is relatively high at 22.1 wt%, due to the presence of abundant calcite in the area captured by the AMICS. In contrast, the silicate content is lower (11.8 wt%), indicating low amount of quartz identified. Apatite is predominantly found in medium to high grade middlings. Zircon ranges from locked to low grade middlings, while allanite and monazite are entirely locked, based on the liberation data.

Modal Mineralogy Summary

SEM/ AMICS Modal Mineralogy

No.	Mineralogy			Samples	
	Mineral Chemical Formula	Phase	Classification	Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	Ca2(Mg,Fe)5Si8O22(OH)2	Actinolite	Silicates	8,0	1,1
2	NaAlSi3O8	Albite	Silicates	8,7	5,6
3	(Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)	Allanite	Silicates		0,7
4	$Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$	Apatite	Phosphates	0,8	3,0
5	BaSO4	Barite	Sulfates	0,4	6,9
6	K Fe Mg2(AlSi3O10)(OH)2	Biotite	Slicates	4,1	1,6
7	CaCO3	Calcite	Carbonates/Nitrates	36,3	47,4
8	(Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O3)2 2H2O	Carbocernaite	Carbonates/Nitrates		0,7
9	(Mg,Fe)5 (Al,Si)5 O10 (OH)8	Chlorite	Silicates	5,4	3,7
10	CaMg0.46Fe0.52Al0.60Si1.42O6	Diopside	Silicates	2,4	7,4
11	PbS	Galena	Sulfides	0,8	0,2
12	KAl2Si3AlO10(OH)2	Illite	Silicates	0,8	0,3
13	Fe3O4	Magnetite	Oxides/Hydroxides	0,8	0,8
14	(Ce,La,Nd) PO4	Monazite	Phosphates		0,2
15	KAlSi3O8	Orthoclase	Silicates	8,6	9,5
16	FeS2	Pyrite	Sulfides	1,7	0,8
17	SiO2	Quartz	Silicates	17,8	9,0
18	ZnS	Sphalerite	Sulfides	1,7	
19	$(Zr,Hf)SiO_4$	Zircon	Silicates	0,2	
20	Other Minerals			1,3	1,0
			Total:	**100,0**	**100,0**

XRD Modal Mineralogy

No.	Mineralogy			Samples	
	Mineral Chemical Formula	Phase	Classification	Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	NaAlSi3O8	Albite	Silicates	11,9	16,9
2	(CeLa)(AlAlFe2+)O[Si2O7][SiO4](OH)	Allanite	Silicates	0,5	4,1
3	Ca5(PO4)3(Cl/F/OH)	Apatite	Phosphates	2,0	0,5
4	BaSO4	Barite	Sulfates	5,5	1,0
5	K Fe Mg2(AlSi3O10)(OH)2	Biotite	Silicates	1,9	1,3
6	CaCO3	Calcite	Carbonates	35,5	3,4
7	(Ca,Na)(Sr,Ce,Ba)(CO3)2	Carbocernaite	Carbonates	1,0	1,2
8	(Mg,Fe)5 (Al,Si)5 O10 (OH)8	Chlorite	Silicates	3,9	6,8
9	CaMg (SiO3)2	Diopside	Silicates	5,1	31,8
10	H2NaCa2(Mg,Fe)4Al3Si6O24	Hornblende	Silicates	0,7	6,2
11	(K,H3 O) (Al,Mg,Fe)2 (Si,Al)4 O10 [(OH)2,(H2O)]	Illite	Silicates		5,9
12	Fe3O4	Magnetite	Oxides/Hydroxides	1,8	0,7
13	(Ce,La,Th,Nd) PO4	Monazite	Phosphates		0,6
14	KAlSi3O8	Orthoclase	Silicates	18,5	14,7
15	FeS2	Pyrite	Sulfides	1,0	2,0
16	SiO2	Quartz	Silicates	10,7	3,0
			Total:	**100,0**	**100,0**

MINERALOGY TESTING SUMMARY

Chemical Assay - AMICS

No.	Sample	Element					
		Ca	Ce	La	Nd	P	Si
1	Drill Core "P"_SEM	17,0				0,2	18,0
2	Drill Core "Allan"_SEM	22,1	0,5	0,1	0,1	0,6	11,8

Element Deportment

No.	Element	Mineral		Samples	
		Abbreviation	Mineral Phase	Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	Ca	Act	Actinolite	1,4	0,1
2		Aln	Allanite		0,2
3		Ap	Apatite	0,3	1,2
4		Cal	Calcite	14,6	19,0
5		Cbc	Carbocernaite		0,1
6		Di_Fe	Diopside	0,4	1,3
7		Om	Other minerals	0,3	0,1
8	Ce	Aln	Allanite		0,2
9		Cbc	Carbocernaite		0,2
10		Mnz	Monazite		0,1
11		Om	Other minerals		
12	La	Om	Other minerals		0,1
13	Nd	Cbc	Carbocernaite		0,1
14		Om	Other minerals		
15	P	Ap	Apatite	0,2	0,6
16		Om	Other minerals		
17	Si	Act	Actinolite	2,0	0,3
18		Ab	Albite	2,6	1,7
19		Aln	Allanite		0,1
20		Bt	Biotite	0,8	0,3
21		Chl	Chlorite	0,7	0,5
22		Di_Fe	Diopside	0,6	1,9
23		Ill	Illite	0,2	0,1
24		Or	Orthoclase	2,6	2,6
25		Qz	Quartz	8,3	4,2
26		Om	Other minerals	0,2	0,2

Mineral Locking

No.	Sample Code	Condition	Mineral of Interest				
			Allanite	Apatite	Carbocernaite	Monazite	Zircon
1	Drill Core "P"_SEM	Liberated		1,0			
		Binary	32,4	3,4		13,7	
		Ternary	67,6	95,5	100,0	86,3	100,0
2	Drill Core "Allan"_SEM	Liberated	5,7	1,0	0,1		
		Binary	6,0	3,3		1,0	
		Ternary	88,3	95,7	99,9	99,0	

Mineral of Interest Liberation

Allanite

No.	Liberation Classes	Surface Area	Sample	
			Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	Locked	< 20%	59,2	71,9
2	Low grade middlings	20 - 40 %	40,8	6,4
3	Medium grade middlings	40 - 60 %		4,3
4	High grade middlings	60 - 80 %		4,9
5	Well liberated	80 - 100%		12,5
		Total:	**100,0**	**100,0**

MINERALOGY TESTING SUMMARY

Apatite

No.	Liberation Classes	Surface Area	Sample	
			Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	Locked	< 20%	0,7	0,6
2	Low grade middlings	20 - 40 %	0,3	1,5
3	Medium grade middlings	40 - 60 %	0,4	54,1
4	High grade middlings	60 - 80 %	16,1	24,9
5	Well liberated	80 - 100%	82,4	18,9
		Total:	**100,0**	**100,0**

Carbocernaite

No.	Liberation Classes	Surface Area	Sample	
			Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	Locked	< 20%	16,7	47,4
2	Low grade middlings	20 - 40 %	83,3	45,4
3	Medium grade middlings	40 - 60 %		7,1
4	High grade middlings	60 - 80 %		
5	Well liberated	80 - 100%		0,1
		Total:	**100,0**	**100,0**

Monazite

No.	Liberation Classes	Surface Area	Sample	
			Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	Locked	< 20%	58,8	69,3
2	Low grade middlings	20 - 40 %	1,2	0,6
3	Medium grade middlings	40 - 60 %	2,2	0,2
4	High grade middlings	60 - 80 %	33,0	0,2
5	Well liberated	80 - 100%	4,8	29,7
		Total:	**100,0**	**100,0**

Zircon

No.	Liberation Classes	Surface Area	Sample	
			Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	Locked	< 20%	100,0	
2	Low grade middlings	20 - 40 %		
3	Medium grade middlings	40 - 60 %		
4	High grade middlings	60 - 80 %		
5	Well liberated	80 - 100%		
		Total:	**100,0**	

Size Distribution - P80 in µm

No.	P - Value	Sample	
		Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	P-80	718,3	464,7
2	P-50	396,6	242,5
3	P-20	122,2	96,2

Mineral of Interest Grain Size

Allanite

No.	P - Value	Sample	
		Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	P-80	3,7	7,9
2	P-50	3,1	5,5
3	P-20	2,4	3,7

Apatite

No.	P - Value	Sample	
		Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	P-80	81,5	117,6
2	P-50	68,1	102,7
3	P-20	40,3	49,8

MINERALOGY TESTING SUMMARY

Carbocernaite

No.	P - Value	Sample	
		Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	P-80	6,4	48,0
2	P-50	6,0	21,5
3	P-20	5,6	8,9

Monazite

No.	P - Value	Sample	
		Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	P-80	10,1	28,1
2	P-50	5,5	14,0
3	P-20	4,2	5,0

Zircon

No.	P - Value	Sample	
		Drill Core "P"_SEM	Drill Core "Allan"_SEM
1	P-80	61,1	
2	P-50	58,0	
3	P-20	55,0	

Introduction

Project Information

Company:	Bambra Oy
Company Representative:	John Levings
Project:	Metallurgy
Client Reference No :	FS5 - Drill Core Prep, HG, GE, HLS
Laboratory Job Number:	CIK.MET.02242E
Mineralogist:	Nurarifah Amalian Sari, Erma Kumala Dewi
Quality Checked:	Ivan Ibrahim
Receipt Date:	26/03/2025
Report Issue Date:	25/04/2025

Project objective is to provide mineralogy characterization of client submitted samples. Report is including sample preparation, chemical result, and SEM mineralogy identification and characterization.

Ivan Ibrahim
Mineralogy Operations

Wayne Turner
Minerals Division

Sample Received

Two samples were received from Bambra Oy on 26th March 2025 through Geoservices Metallurgy Laboratory. Test was commenced on 19 April 2025 for mineralogy characterization analysis.

Sample Information and Scanning Summary

No.	Sample Code	Measurement		Sample Weight (gr)	Analysis Time
		Mode	Scanning		
1	Drill Core "P"_SEM	BMA	Particle	123,5	4 hrs/ sample
2	Drill Core "Allan"_SEM			122,5	

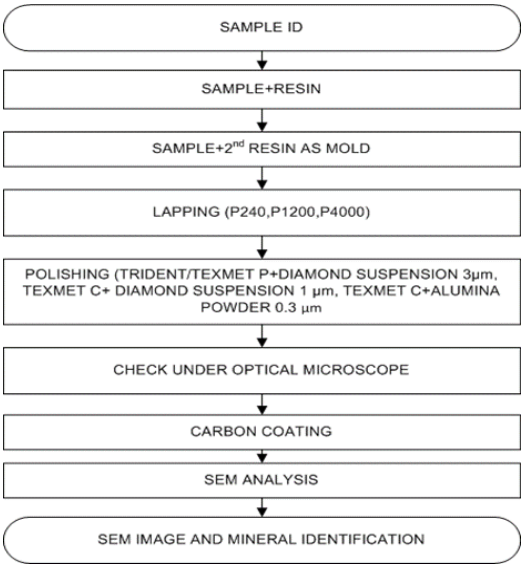
Received Sample

Introduction

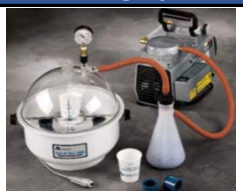
Sample Preparation

Each of the polished mounts were viewed under microscope to confirm that the lapping and polishing were of good quality. A photo of each polished mount was taken and basic mineralogy provided. Photos of the mounted samples provided in PRM Micrographs

Mineralogy Testing Preparation Flowchart



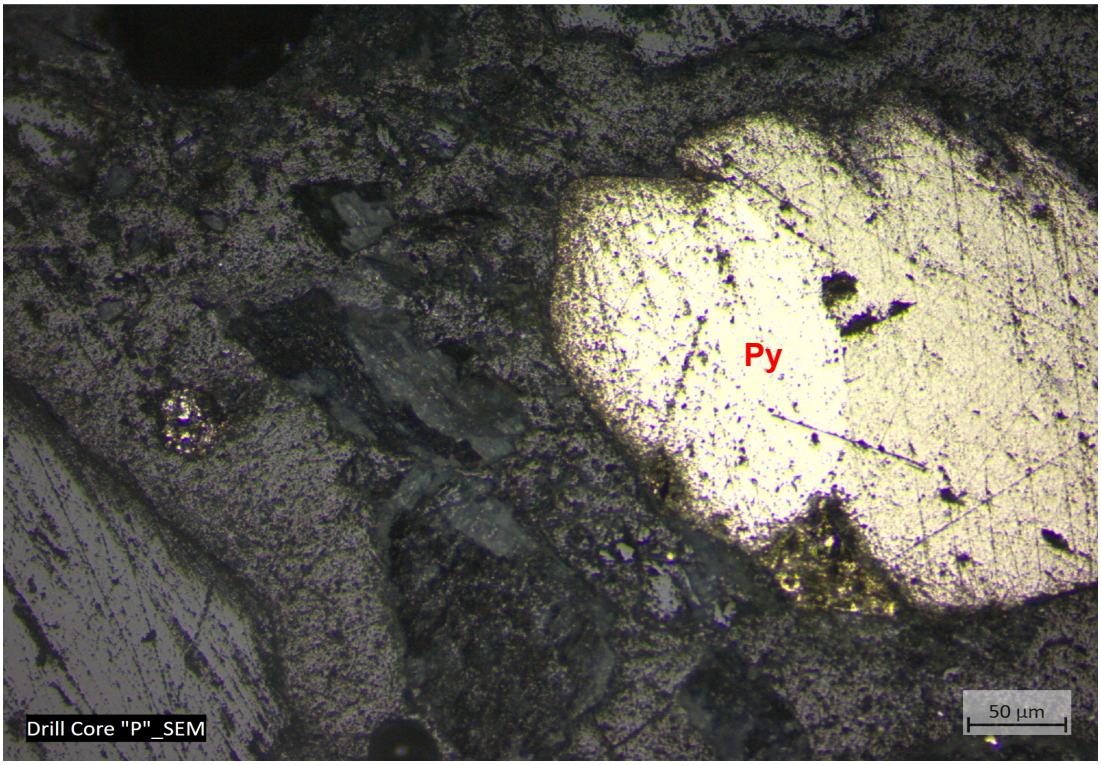
Preparation Equipment

No.	Equipment		Equipment Description
	Unit	Photograph	
1	Buehler Cast n' Vac		Supplied by Buehler the Cast N' Vac, vaccum Impregnation is used to remove entrapped air when encapsulating samples in epoxy. The vacuum pulls air from the mount, displacing it with empoxy to provide complete bonding and support. This maintains sample integrity during abrasive prepartion, reducing chances of cracking or delamination
2	LECOMET Pressure Vessel		Supplied by LECO is used to hardened the impregnated sample. This step used on first and second epoxy mounts. Sample stored inside pressure vessel for 2 days for both mounting phases.
3	Buehler Ecomet 250		Supplied by Buehler the Ecomet 250 is used on the resin blocks prepared to cut back and expose a fresh surface. This surface is progressively fine polished. The final polished mount is viewed under microscope to confirm the quality of preparation and identification of major minerals.
4	SPI Carbon Coater		The carbon coater machine is supplied by SPI. Carbon coating equipment is used to provide a thin layer of carbon to the prepared resin mount. The choice of carbon is popular choice for EDX analysis as the carbon X-ray peak does not interfere other elemental signals.

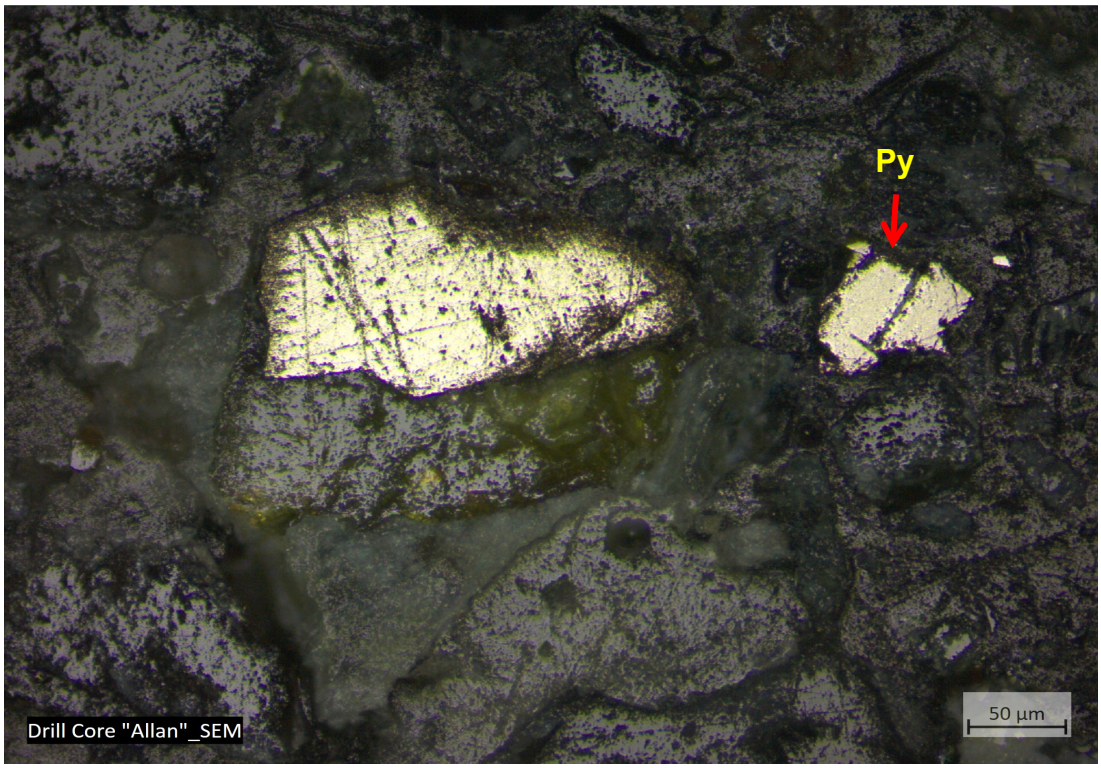
Methods of Analysis

No.	Method	Description
1	SEM Automated Mineralogy	Provide liberation, locking, and size of MoI
2	X-Ray Diffraction (XRD)	Advance mineral identification
3	LECO	Total sulfur by combustion
4	X-Ray Flourscence (XRF)	Major element identification based on element flourscence

Drill Core "P"_SEM

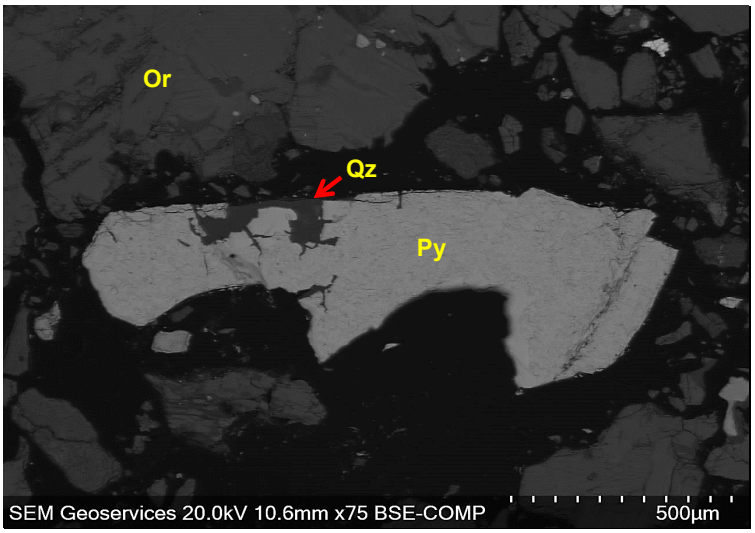


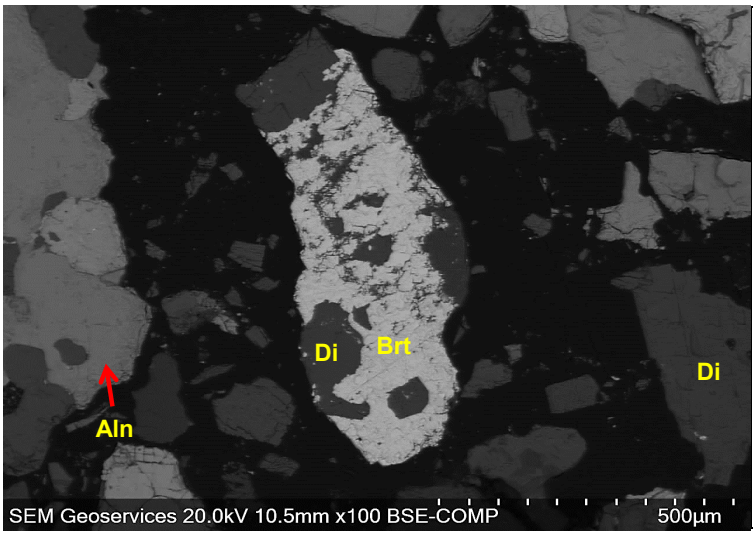
Drill Core "Allan"_SEM

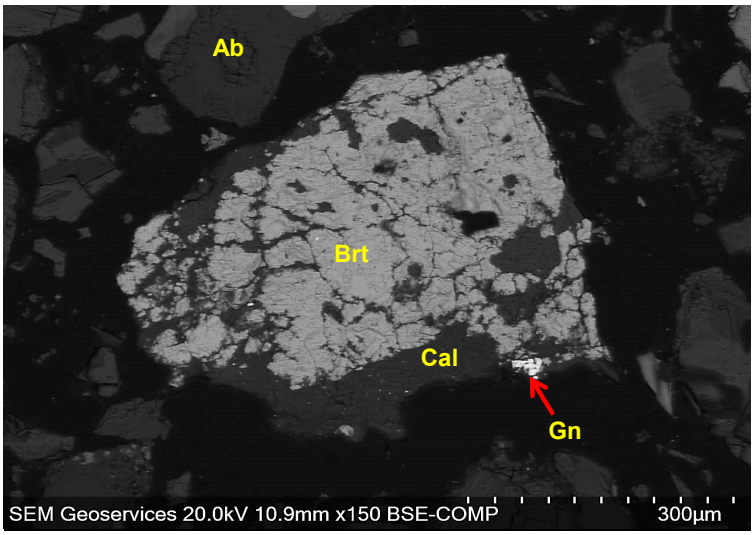


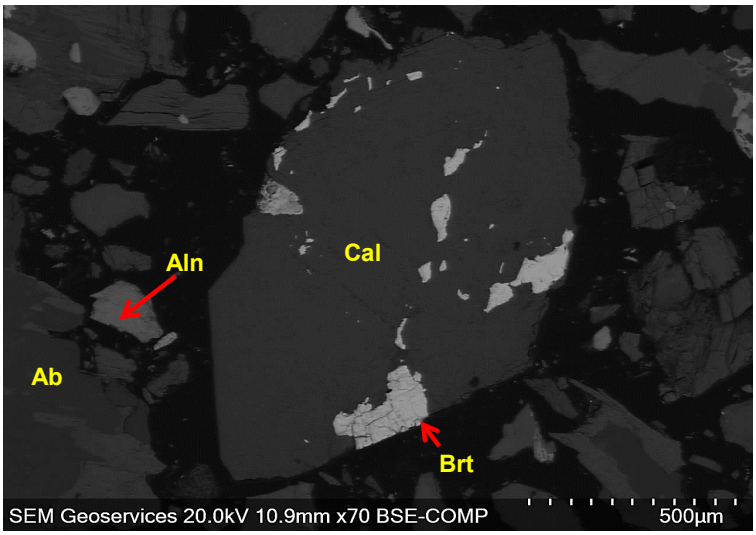
Minerals: Py-Pyrite.

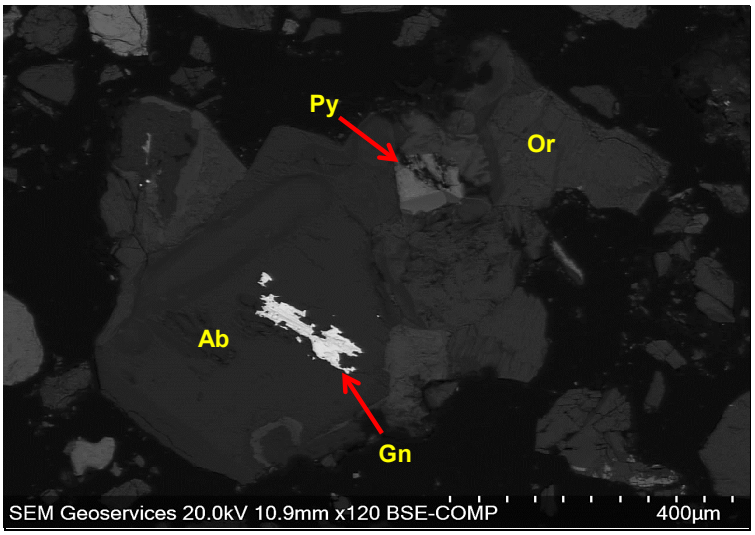
SAMPLE ID **Drill Core "P"_SEM**

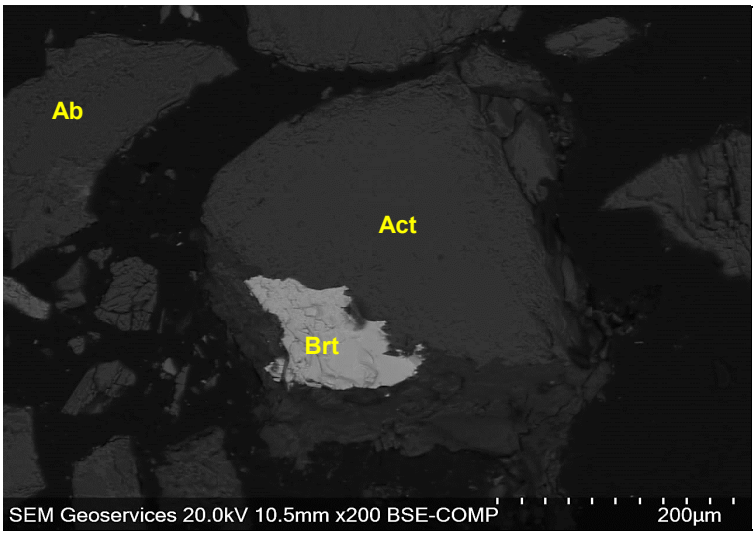






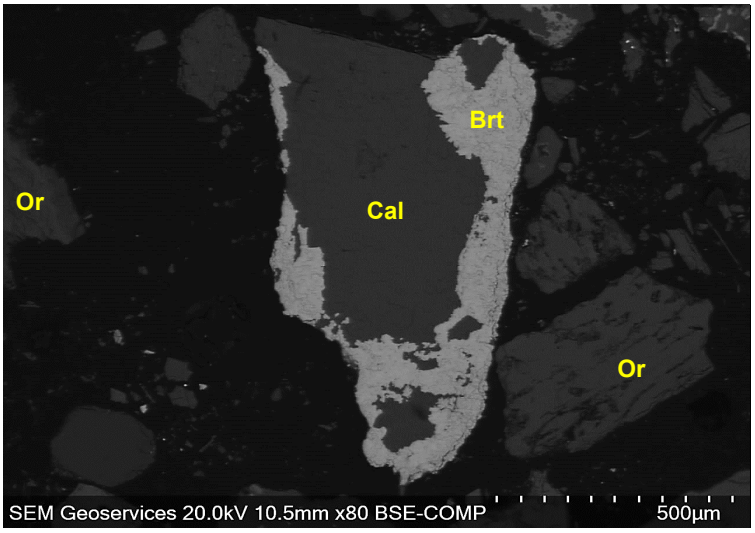


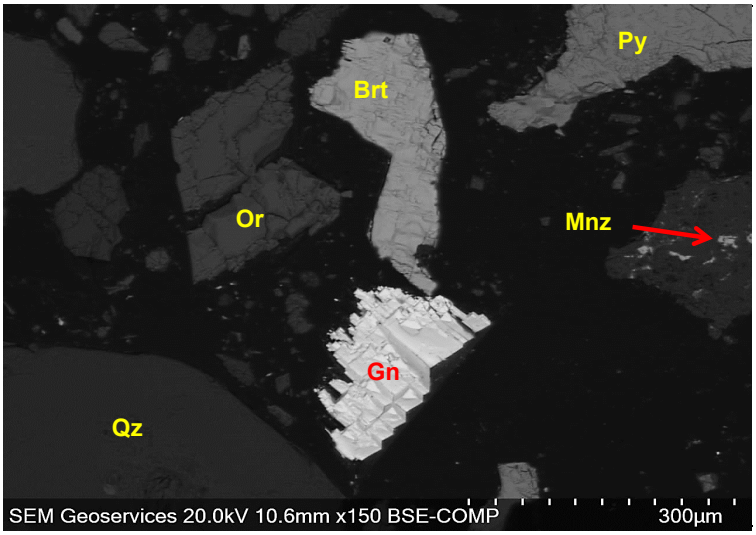


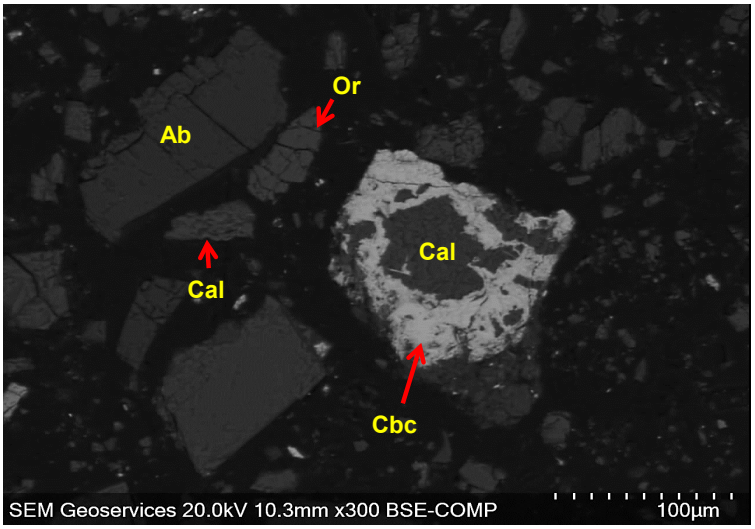


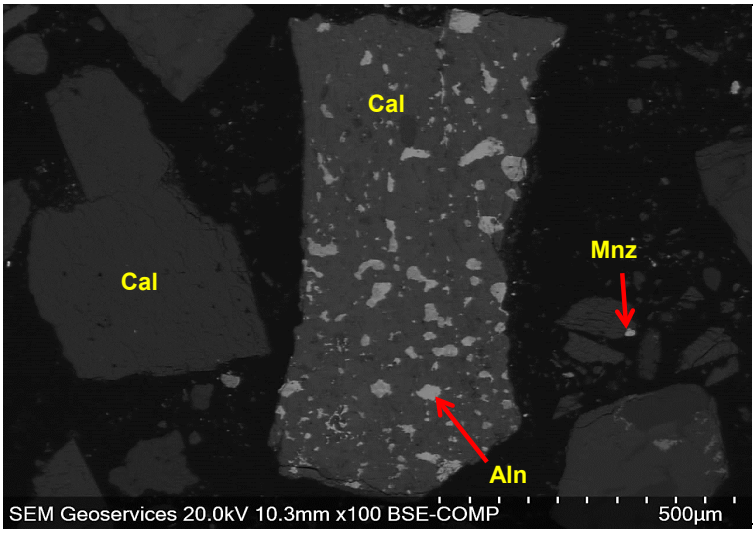
Minerals: Ab-Albite, **Act**-Actinolite, **Aln-**Allanite, **Brt**-Barite, **Cal**-Calcite, **Di**-Diopside, **Gn**-Galena, **Or**-Orthoclase, **Py**-Pyrite, **Qz**-Quartz.

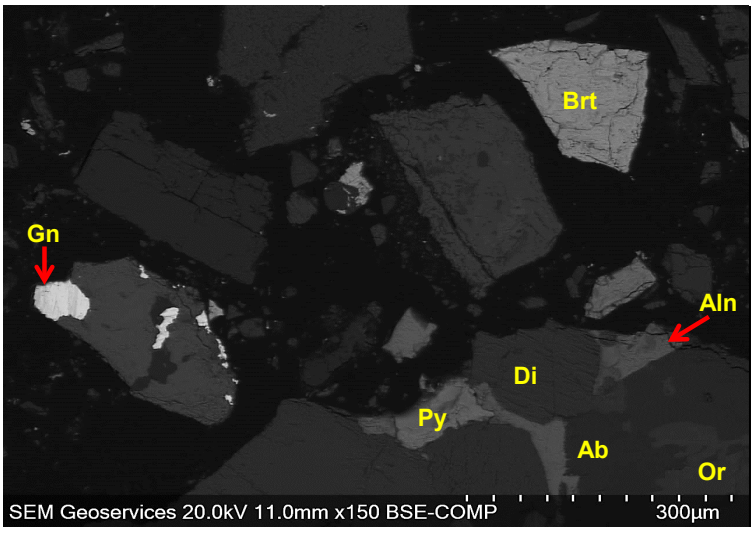
SAMPLE ID **Drill Core "Allan"_SEM**

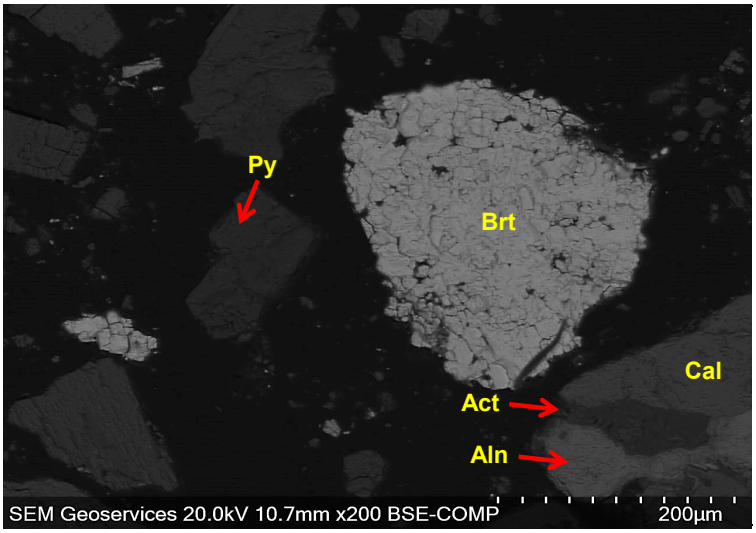








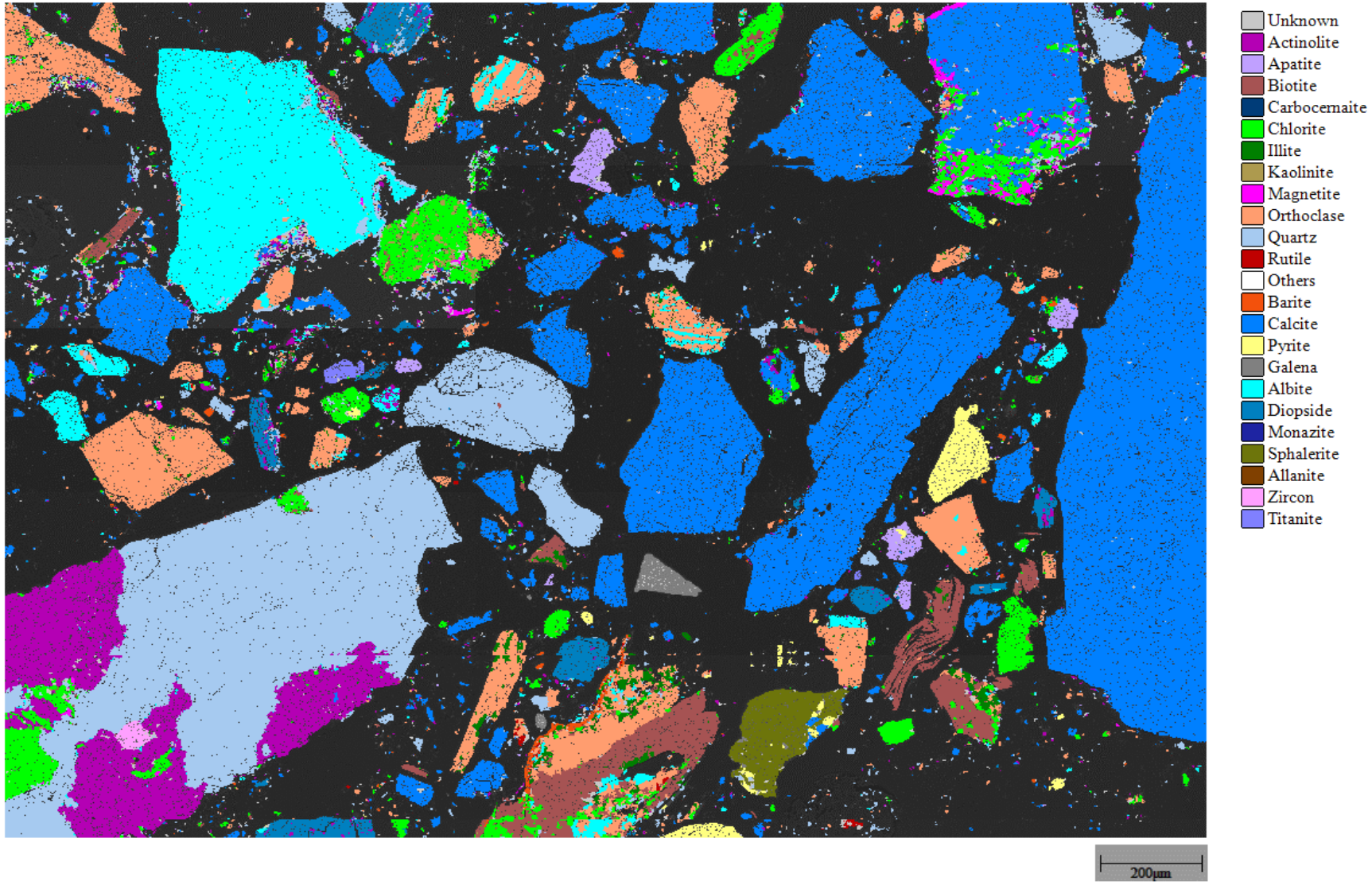




Minerals: Ab-Albite, **Act**-Actinolite, **Aln-**Allanite, **Brt**-Barite, **Cal**-Calcite, **Cbc-**Carbocernaite, **Di**-Diopside, **Gn**-Galena, **Mnz**-Monazite, **Or**-Orthoclase, **Py**-Pyrite, **Qz**-Quartz.

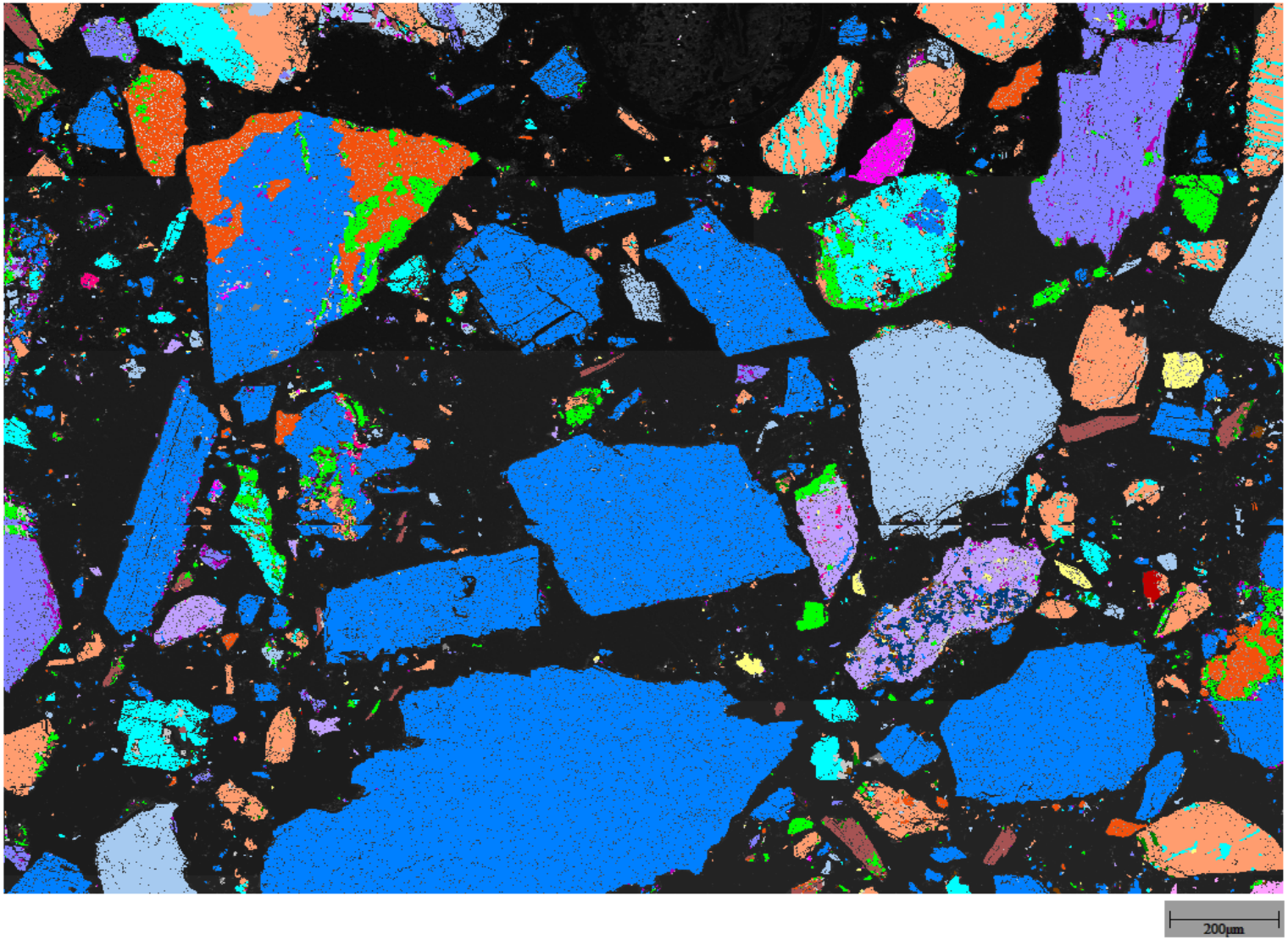
SEM/AMICS Mineral Image of the Polished Resin Mount

Sample ID **Drill Core "P"_SEM**



SEM/AMICS Mineral Image of the Polished Resin Mount

Sample ID **Drill Core "Allan"_SEM**



XRD Result - Phase, Classification, and Grouping

MINERAL PHASE IDENTIFICATION- RIETVELD %

					1	2
					RIETVELD REFINEMENT WT%	
Abbreviation	Mineral Phase Identification	Mineral Chemical Formula	Mineral Classification	Mineral Group	Drill Core "P"_HG	Drill Core "Allan"_HG
Ab	Albite	NaAlSi3O8	Silicates	Plagioclase	11,9	16,9
Aln_La	Allanite	(CeLa)(AlAlFe2+)O[Si2O7][SiO4](OH)	Silicates	Epidote	0,5	4,1
Ap	Apatite	Ca5(PO4)3(Cl/F/OH)	Phosphates	Apatite	2,0	0,5
Brt	Barite	BaSO4	Sulfates	Barite	5,5	1,0
Bt	Biotite	K Fe Mg2(AlSi3O10)(OH)2	Silicates	Mica	1,9	1,3
Cal	Calcite	CaCO3	Carbonates	Calcite	35,5	3,4
Cbc	Carbocernaite	(Ca,Na)(Sr,Ce,Ba)(CO3)2	Carbonates	No Group	1,0	1,2
Chl	Chlorite	(Mg,Fe)5 (Al,Si)5 O10 (OH)8	Silicates	Clay	3,9	6,8
Di	Diopside	CaMg (SiO3)2	Silicates	Pyroxene	5,1	31,8
Hbl	Hornblende	H2NaCa2(Mg,Fe)4Al3Si6O24	Silicates	Amphibole	0,7	6,2
Ill_AlMgFe	Illite	(K,H3 O) (Al,Mg,Fe)2 (Si,Al)4 O10 [(OH)2,(H2O)]	Silicates	Clay		5,9
Mag	Magnetite	Fe3O4	Oxides/Hydroxides	Spinel	1,8	0,7
Mnz_Cltn	Monazite	(Ce,La,Th,Nd) PO4	Phosphates	Monazite		0,6
Or	Orthoclase	KAlSi3O8	Silicates	K-Feldspar	18,5	14,7
Py	Pyrite	FeS2	Sulfides	Pyrite	1,0	2,0
Qz	Quartz	SiO2	Silicates	Quartz	10,7	3,0
				Total:	**100,0**	**100,0**

MINERAL CLASSIFICATION - SUM OF RIETVELD %

	Column Labels						
Sample ID	Silicates	Oxides/Hydroxides	Sulfates	Phosphates	Sulfides	Carbonates	Grand Total
Drill Core "P"_HG	53,2	1,8	5,5	2,0	1,0	36,5	**100,0**
Drill Core "Allan"_HG	90,6	0,7	1,0	1,0	2,0	4,6	**100,0**

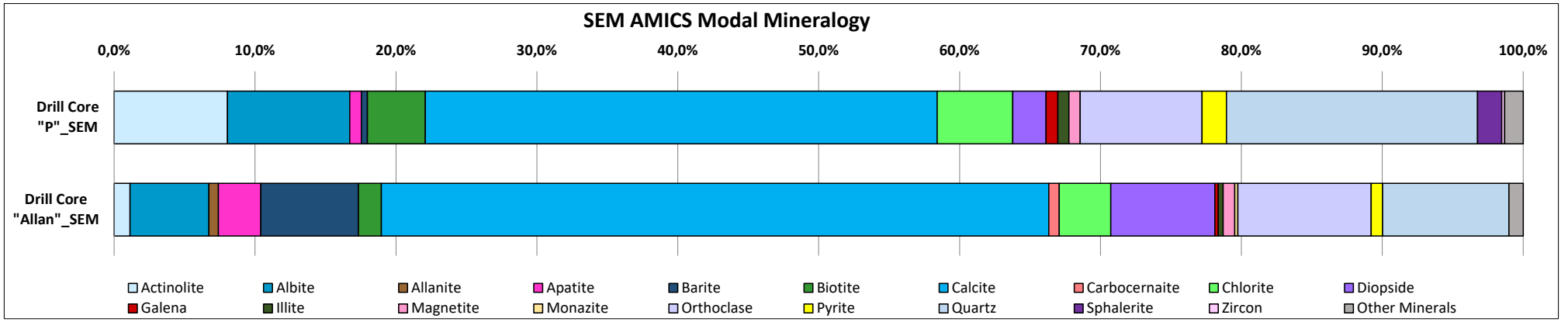
MINERAL GROUPING - SUM OF RIETVELD %

	Column Labels															
Sample ID	Quartz	No Group	Spinel	Plagioclase	Barite	Mica	Calcite	Clay	Pyroxene	Monazite	K-Feldspar	Pyrite	Apatite	Amphibole	Epidote	Grand Total
Drill Core "P"_HG	10,7	1,0	1,8	11,9	5,5	1,9	35,5	3,9	5,1		18,5	1,0	2,0	0,7	0,5	**100,0**
Drill Core "Allan"_HG	3,0	1,2	0,7	16,9	1,0	1,3	3,4	12,7	31,8	0,6	14,7	2,0	0,5	6,2	4,1	**100,0**

Mineralogical Report - SEM/AMICS Modal Mineralogy

Abbreviation	Mineral Identification	Mineral Chemical Formula	Mineral Classification	Mineral Group	SAMPLE IDENTIFICATION	
					Drill Core "P"_SEM	Drill Core "Allan"_SEM
					Detection Limit AMICS Identification - <0.1%	
Act	Actinolite	Ca2(Mg,Fe)5Si8O22(OH)2	Silicates	Amphibole	8,0	1,1
Ab	Albite	NaAlSi3O8	Silicates	Plagioclase	8,7	5,6
Aln	Allanite	(Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)	Silicates	Allanite		0,7
Ap	Apatite	$Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$	Phosphates	Apatite	0,8	3,0
Brt	Barite	BaSO4	Sulfates	Barite	0,4	6,9
Bt	Biotite	K Fe Mg2(AlSi3O10)(OH)2	Slicates	Mica	4,1	1,6
Cal	Calcite	CaCO3	Carbonates/Nitrates	Calcite	36,3	47,4
Cbc	Carbocernaite	(Ca,Na)(Sr,Ce,La,Nd,Ba)(CO3)2 2H2O	Carbonates/Nitrates	No Group		0,7
Chl	Chlorite	(Mg,Fe)5 (Al,Si)5 O10 (OH)8	Silicates	Clay	5,4	3,7
Di_Fe	Diopside	CaMg0.46Fe0.52Al0.60Si1.42O6	Silicates	Pyroxene	2,4	7,4
Gn	Galena	PbS	Sulfides	Galena	0,8	0,2
Ill	Illite	KAl2Si3AlO10(OH)2	Silicates	Clay	0,8	0,3
Mag	Magnetite	Fe3O4	Oxides/Hydroxides	Spinel	0,8	0,8
Mnz	Monazite	(Ce,La,Nd) PO4	Phosphates	Monazite		0,2
Or	Orthoclase	KAlSi3O8	Silicates	K-Feldspar	8,6	9,5
Py	Pyrite	FeS2	Sulfides	Pyrite	1,7	0,8
Qz	Quartz	SiO2	Silicates	Quartz	17,8	9,0
Sp	Sphalerite	ZnS	Sulfides	Sphalerite	1,7	
Zrn	Zircon	$(Zr,Hf)SiO_4$	Silicates	Zircon	0,2	
Om	Other Minerals				1,3	1,0
				Total	**100,0**	**100,0**

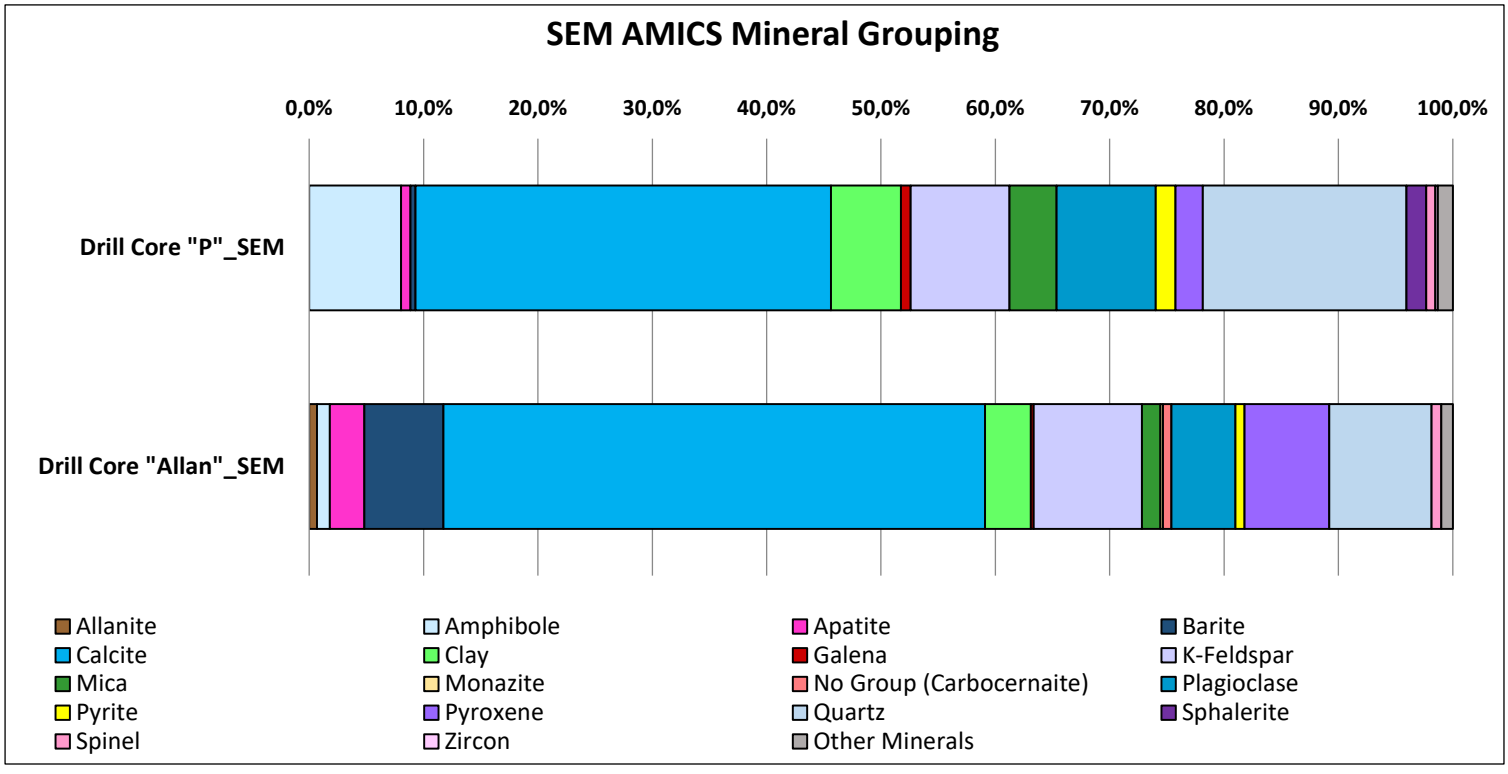
Graphical representation in the following bar chart of the modal mineralogy



Mineral Grouping

Mineral Grouping	SAMPLE IDENTIFICATION	
	Drill Core "P"_SEM	Drill Core "Allan"_SEM
Allanite		0,7
Amphibole	8,0	1,1
Apatite	0,8	3,0
Barite	0,4	6,9
Calcite	36,3	47,4
Clay	6,1	4,0
Galena	0,8	0,2
K-Feldspar	8,6	9,5
Mica	4,1	1,6
Monazite		0,2
No Group (Carbocernaite)		0,7
Plagioclase	8,7	5,6
Pyrite	1,7	0,8
Pyroxene	2,4	7,4
Quartz	17,8	9,0
Sphalerite	1,7	
Spinel	0,8	0,8
Zircon	0,2	
Other Minerals	1,3	1,0
Total	**100,0**	**100,0**

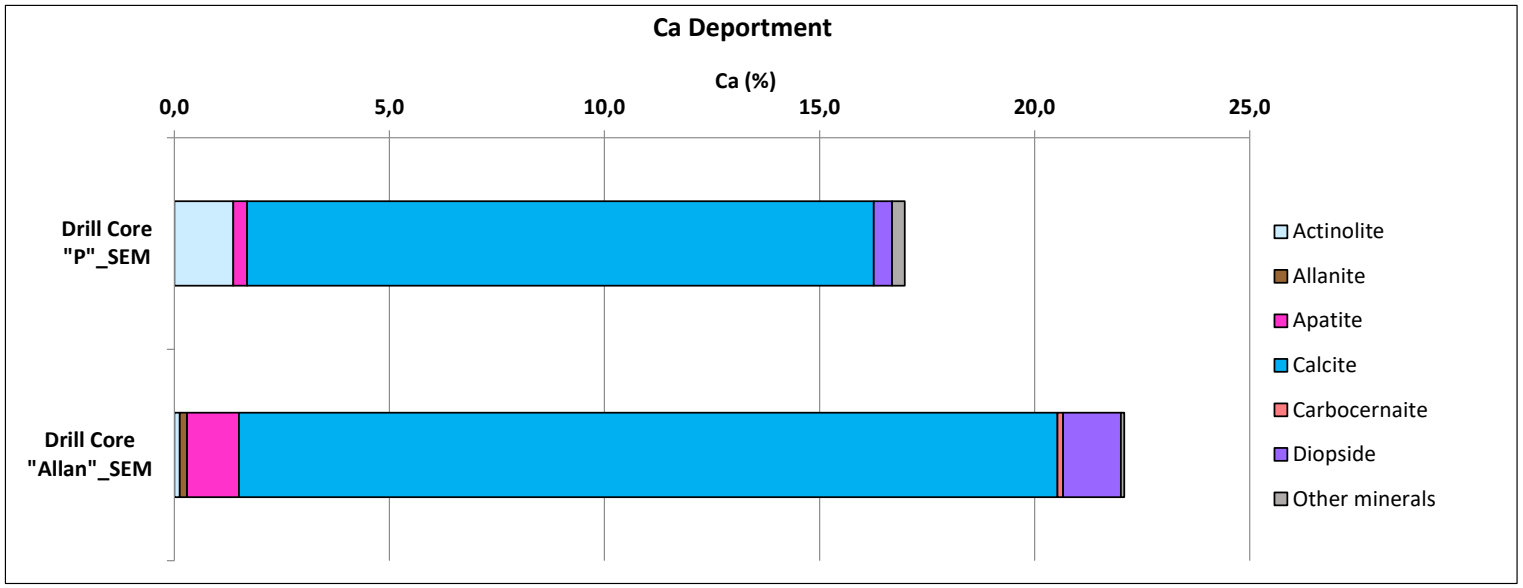
Graphical representation in the following bar chart of the mineral grouping

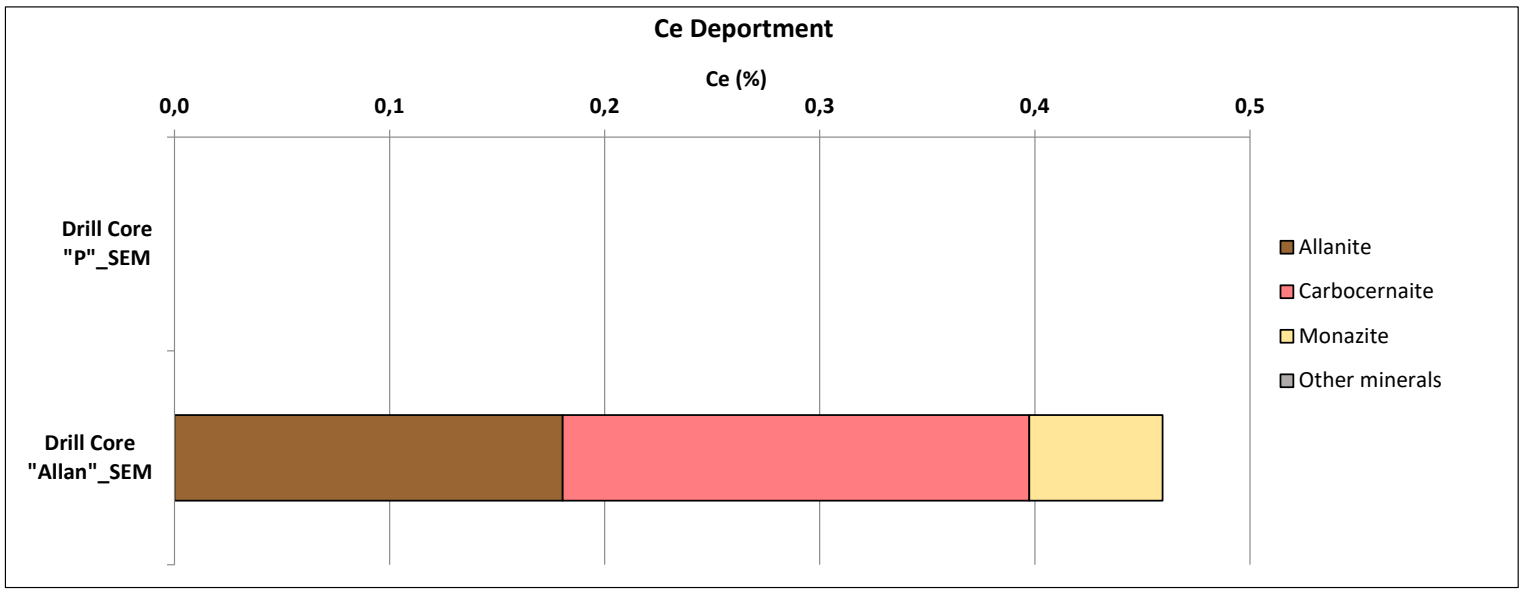


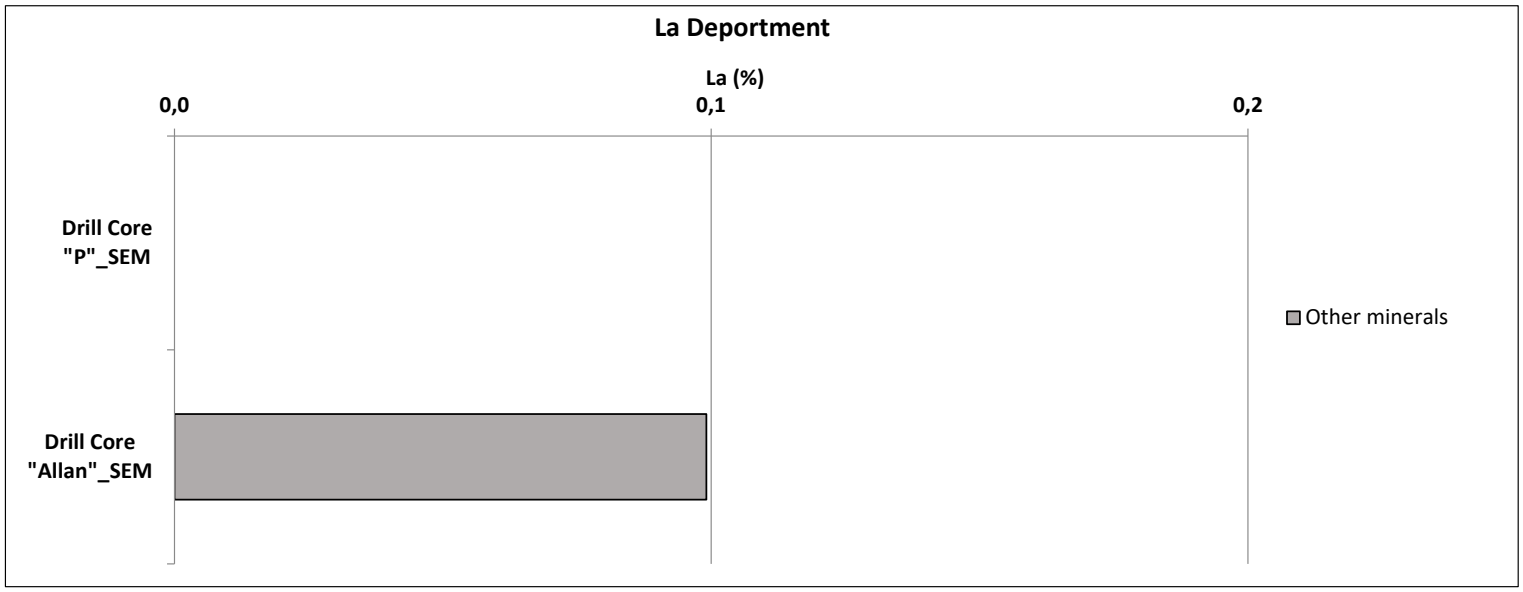
Mineralogical Report - Element Deportment & Reconciliation

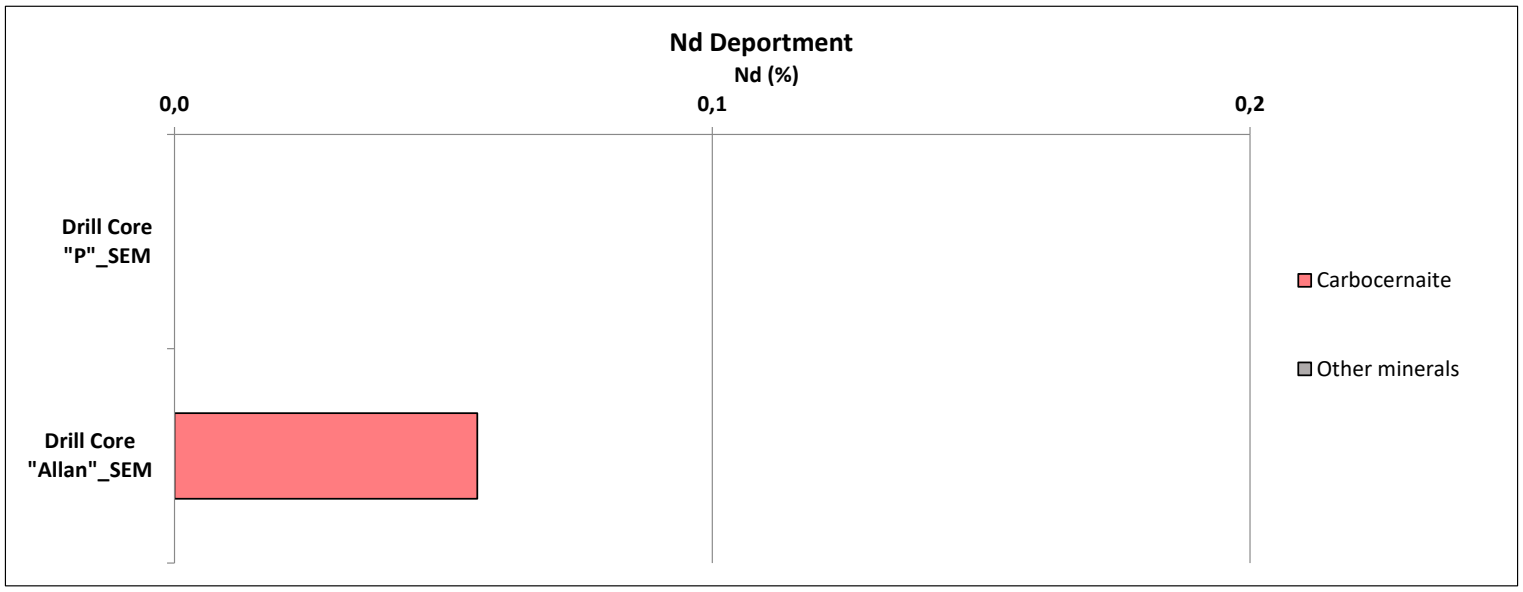
Major Element Deportment Mineral	Abbrevation	SAMPLE IDENTIFICATION	
		Drill Core "P"_SEM	Drill Core "Allan"_SEM
Ca deportment (%)			
Actinolite	Act	1,4	0,1
Allanite	Aln		0,2
Apatite	Ap	0,3	1,2
Calcite	Cal	14,6	19,0
Carbocernaite	Cbc		0,1
Diopside	Di_Fe	0,4	1,3
Other minerals	Om	0,3	0,1
	Ca (SEM/EDS/AMICS)	17,0	22,1
	Ca (chemical)	15,8	9,1
Ce deportment (%)			
Allanite	Aln		0,2
Carbocernaite	Cbc		0,2
Monazite	Mnz		0,1
Other minerals	Om		
	Ce (SEM/EDS/AMICS)		0,5
	Ce (chemical)	0,1	1,0
La deportment (%)			
Other minerals	Om		0,1
	La (SEM/EDS/AMICS)		0,1
	La (chemical)	0,1	0,7
Nd deportment (%)			
Carbocernaite	Cbc		0,1
Other minerals	Om		
	Nd (SEM/EDS/AMICS)		0,1
	Nd (chemical)	0,1	0,3
P deportment (%)			
Apatite	Ap	0,2	0,6
Other minerals	Om		
	P (SEM/EDS/AMICS)	0,2	0,6
	P (chemical)	0,5	
Si deportment (%)			
Actinolite	Act	2,0	0,3
Albite	Ab	2,6	1,7
Allanite	Aln		0,1
Biotite	Bt	0,8	0,3
Chlorite	Chl	0,7	0,5
Diopside	Di_Fe	0,6	1,9
Illite	Ill	0,2	0,1
Orthoclase	Or	2,6	2,6
Quartz	Qz	8,3	4,2
Other minerals	Om	0,2	0,2
	Si (SEM/EDS/AMICS)	18,0	11,8
	Si (chemical)	15,8	22,3

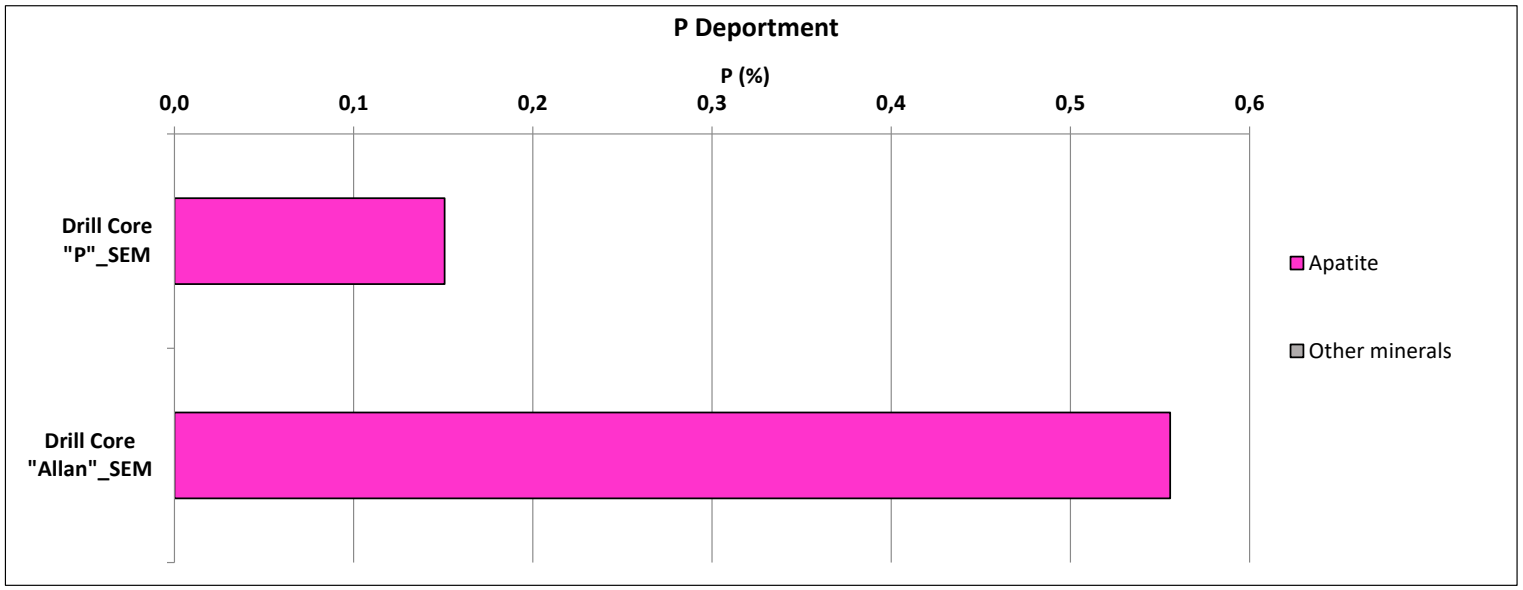
Deportment Chart

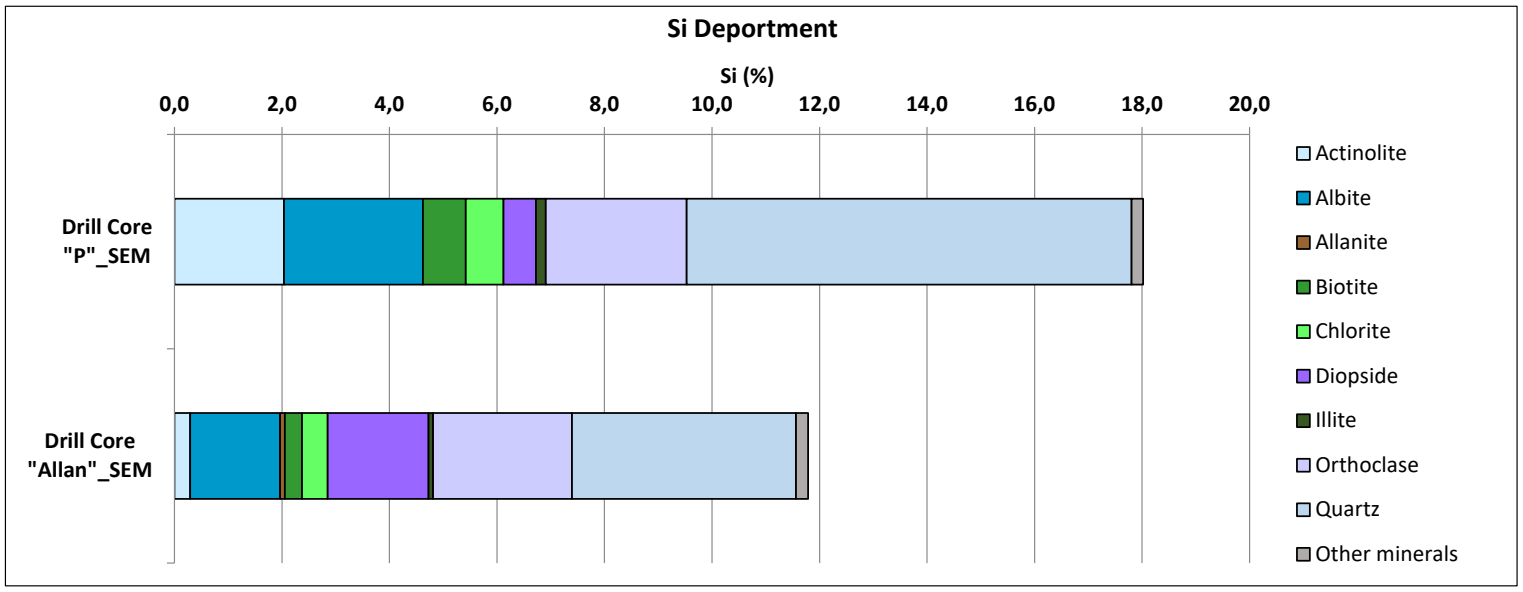




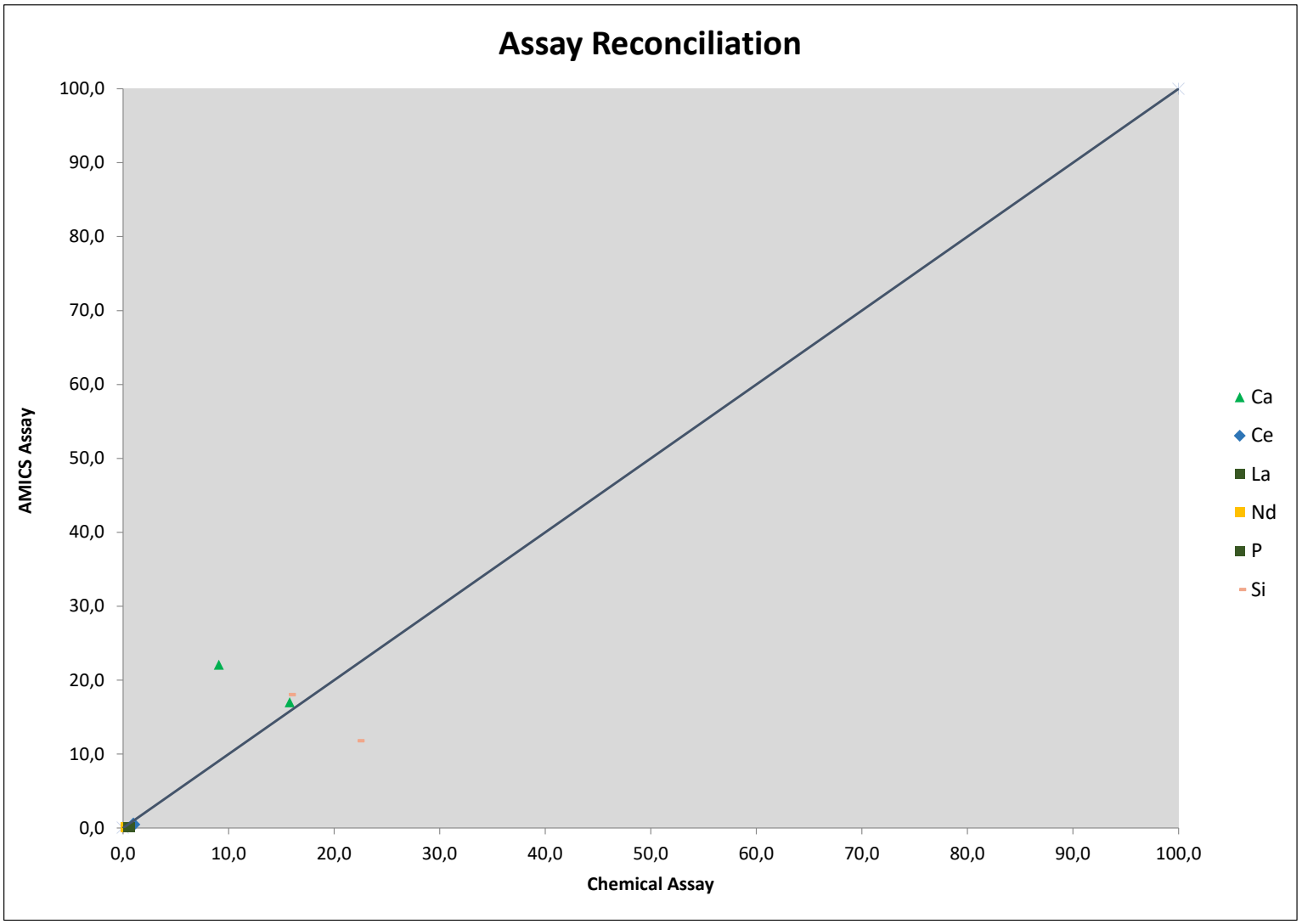

La Deportment
La (%)
0,0
0,1
0,2
Drill Core "P"_SEM
Drill Core "Allan"_SEM
Other minerals


Nd Deportment
Nd (%)
0,0
0,1
0,2
Drill Core "P"_SEM
Drill Core "Allan"_SEM
Carbocernaite
Other minerals


P Deportment
P (%)
0,0
0,1
0,2
0,3
0,4
0,5
0,6
Drill Core "P"_SEM
Drill Core "Allan"_SEM
Apatite
Other minerals


Si Deportment
Si (%)
0,0
2,0
4,0
6,0
8,0
10,0
12,0
14,0
16,0
18,0
20,0
Drill Core "P"_SEM
Drill Core "Allan"_SEM
Actinolite
Albite
Allanite
Biotite
Chlorite
Diopside
Illite
Orthoclase
Quartz
Other minerals

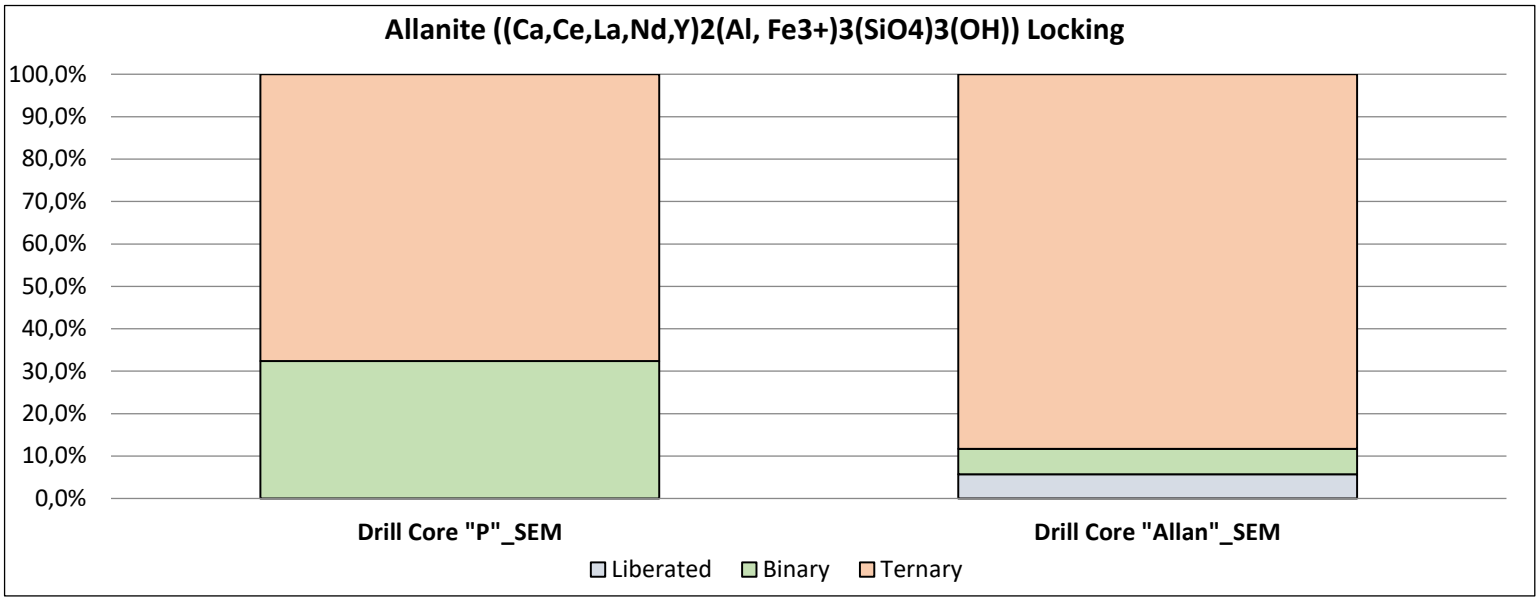
Reconciliation Chart



Mineralogical Report - Mineral Locking

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Summary	Drill Core "P"_SEM	Drill Core "Allan"_SEM
	Locking percentage (%)	
Liberated		5,7
Binary	32,4	6,0
Ternary	67,6	88,3
Total	**100,0**	**100,0**

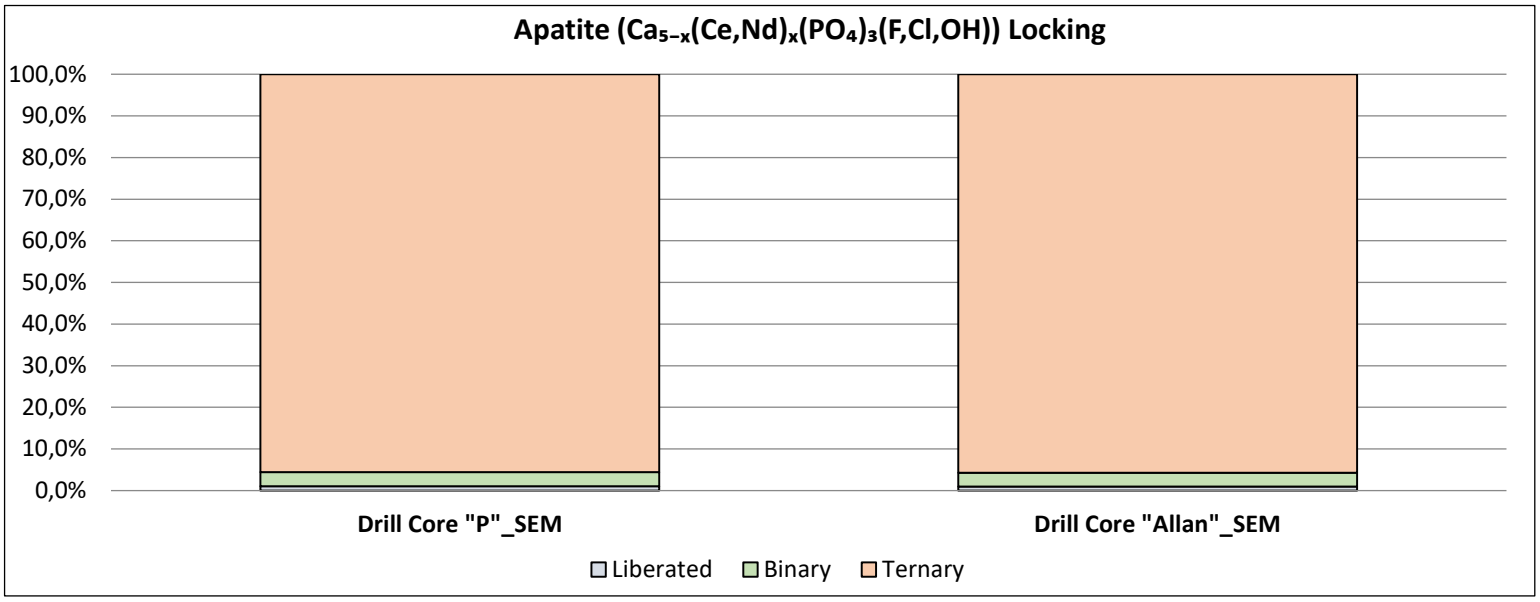


Locking in	Drill Core "P"_SEM		Drill Core "Allan"_SEM	
	Binary	Ternary	Binary	Ternary
Actinolite		0,1	0,4	4,6
Albite		10,3	0,7	10,7
Apatite				20,7
Barite			0,1	2,6
Biotite		0,3		1,9
Calcite		1,1	0,5	11,3
Carbocernaite				9,0
Chlorite		1,1	0,4	5,8
Diopside			0,2	1,7
Galena				1,1
Illite		0,1		0,5
Kaolinite		0,1	0,1	0,1
Magnetite				0,1
Monazite	32,4	20,1		0,5
Orthoclase		25,5	0,5	4,1
Others		2,5	2,5	6,6
Pyrite				0,6
Quartz		1,1	0,3	1,5
Titanite				0,3
Unknown		5,3	0,5	4,6

Mineralogical Report - Mineral Locking

Apatite (Ca $_x$(Ce,Nd)$_x$(PO) (F,Cl,OH))

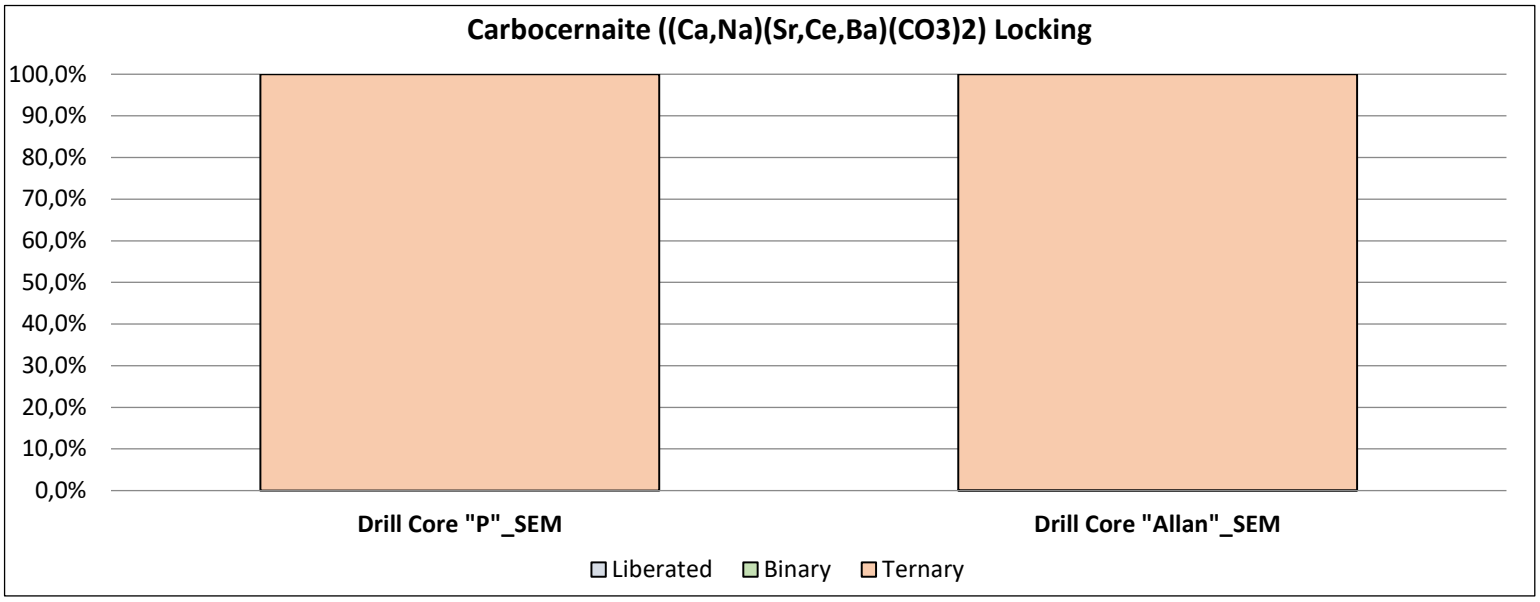
Summary	Drill Core "P"_SEM	Drill Core "Allan"_SEM
	Locking percentage (%)	
Liberated	1,0	1,0
Binary	3,4	3,3
Ternary	95,5	95,7
Total	**100,0**	**100,0**



Locking in	Drill Core "P"_SEM		Drill Core "Allan"_SEM	
	Binary	Ternary	Binary	Ternary
Actinolite		0,4		5,7
Albite		1,1		
Allanite				10,0
Barite		4,3		0,1
Biotite				0,2
Calcite	0,1	2,2		5,9
Carbocernaite		0,2		27,2
Chlorite		5,7		9,2
Diopside		5,1		
Galena		0,7		3,9
Magnetite				0,4
Monazite		1,9		4,0
Orthoclase		0,1		
Others	3,2	40,9	3,1	16,1
Pyrite		11,4		2,5
Quartz		1,4		2,3
Unknown	0,1	20,5	0,2	8,3

Carbocernaite ((Ca,Na)(Sr,Ce,Ba)(CO3)2)

Summary	Drill Core "P"_SEM	Drill Core "Allan"_SEM
	Locking percentage (%)	
Liberated		0,1
Binary		
Ternary	100,0	99,9
Total	**100,0**	**100,0**

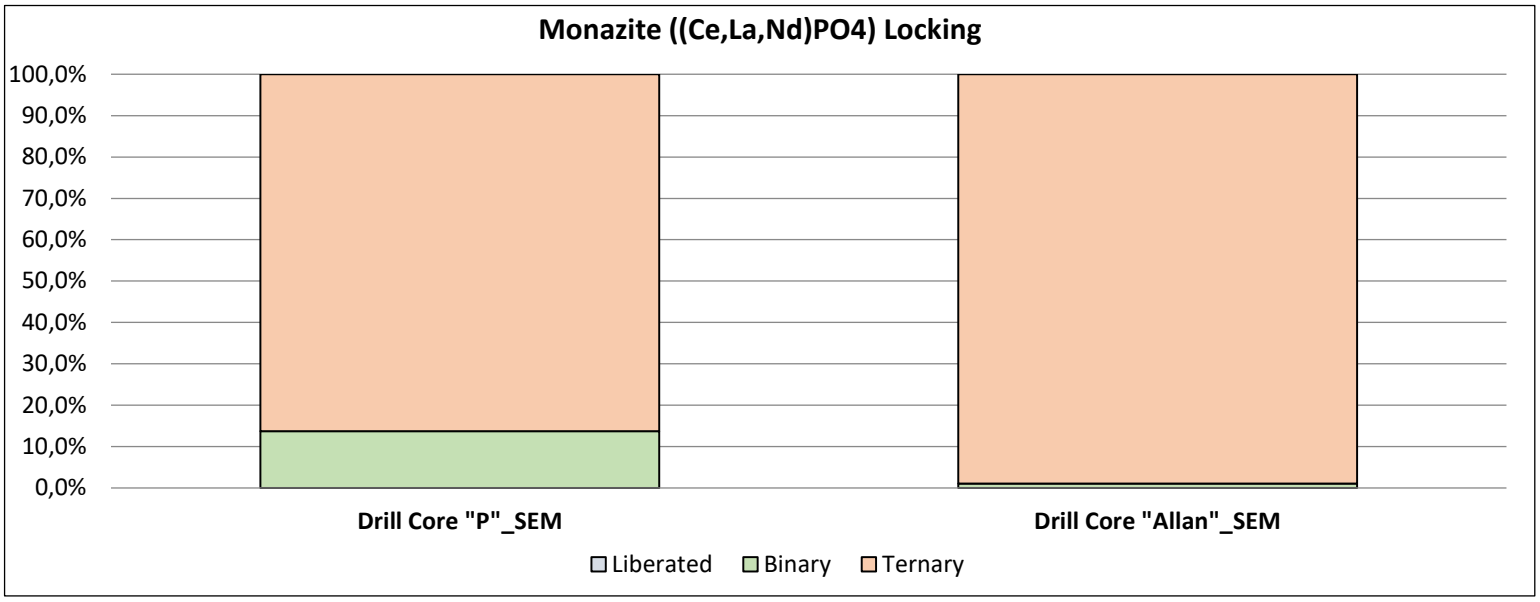


Locking in	Drill Core "P"_SEM		Drill Core "Allan"_SEM	
	Binary	Ternary	Binary	Ternary
Actinolite				2,1
Allanite				10,0
Apatite		13,9		66,2
Barite				0,3
Biotite				0,1
Calcite		0,1		2,3
Chlorite				0,6
Galena		0,1		3,7
Monazite		80,2		0,8
Others		4,0		6,2
Pyrite		1,4		2,1
Quartz				0,4
Unknown		0,3		5,0

Mineralogical Report - Mineral Locking

Monazite ((Ce,La,Nd)PO4)

Summary	Drill Core "P"_SEM	Drill Core "Allan"_SEM
	Locking percentage (%)	
Liberated		
Binary	13,7	1,0
Ternary	86,3	99,0
Total	**100,0**	**100,0**

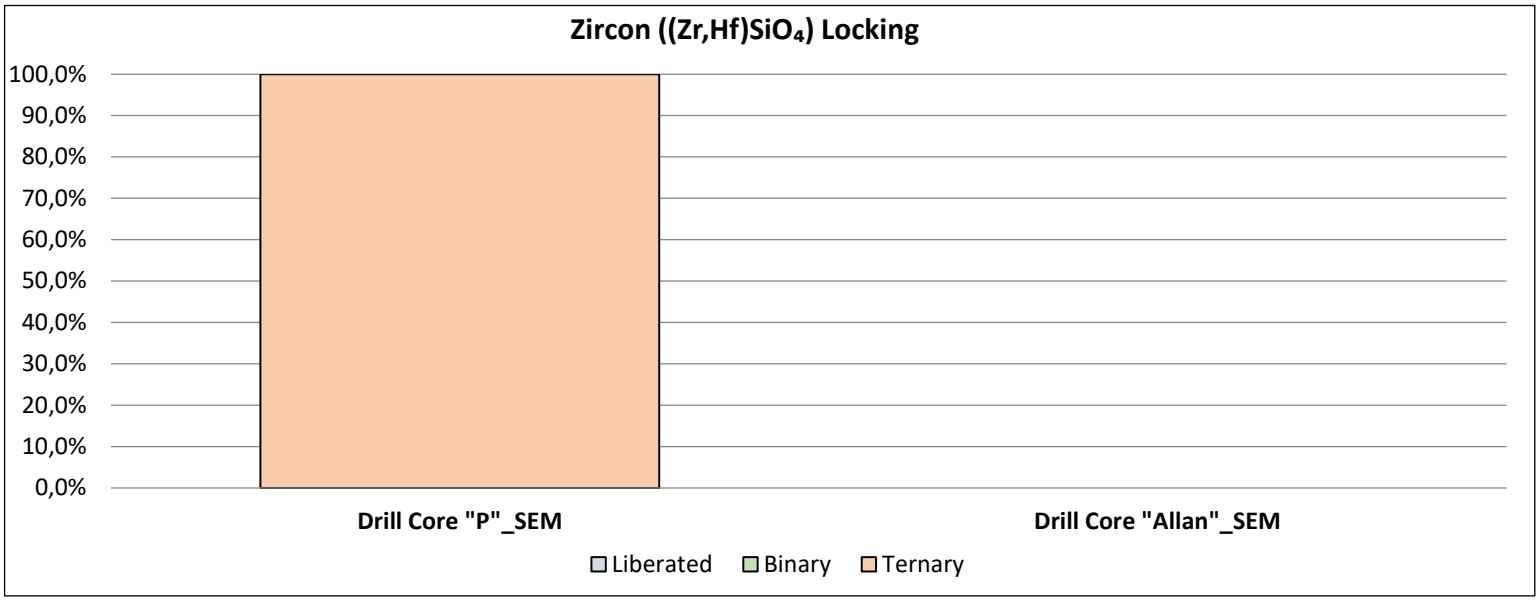


Locking in	Drill Core "P"_SEM		Drill Core "Allan"_SEM	
	Binary	Ternary	Binary	Ternary
Actinolite		1,1		1,3
Albite		0,1		
Allanite	13,7	5,5		1,6
Apatite		7,3		19,5
Barite		0,2		5,1
Biotite		0,3		0,1
Calcite		23,0		27,0
Carbocernaite		14,3		15,2
Chlorite		5,7		7,5
Diopside		0,4		
Galena				0,1
Illite		0,1		
Magnetite		3,6		
Orthoclase		10,8		3,0
Others		8,8		12,2
Pyrite		0,1		0,2
Quartz		2,8		0,7
Unknown		2,5	1,0	5,4

Mineralogical Report - Mineral Locking

Zircon ((Zr,Hf)SiO)

Summary	Drill Core "P"_SEM	Drill Core "Allan"_SEM
	Locking percentage (%)	
Liberated		
Binary		
Ternary	100,0	
Total	**100,0**	

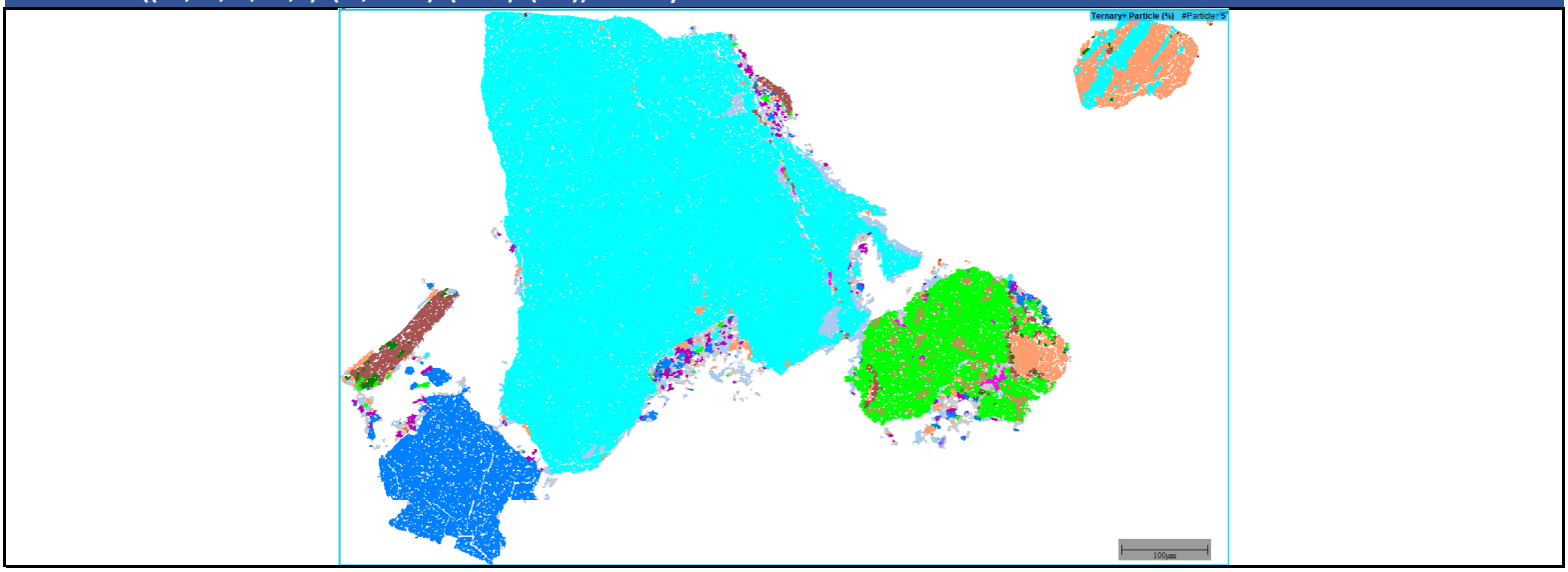


Locking in	Drill Core "P"_SEM		Drill Core "Allan"_SEM	
	Binary	Ternary	Binary	Ternary
Actinolite		32,4		
Albite		0,2		
Biotite		0,1		
Chlorite		4,4		
Magnetite		0,2		
Others		2,2		
Quartz		60,0		
Unknown		0,4		

Drill Core "P"_SEM

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Binary Particle

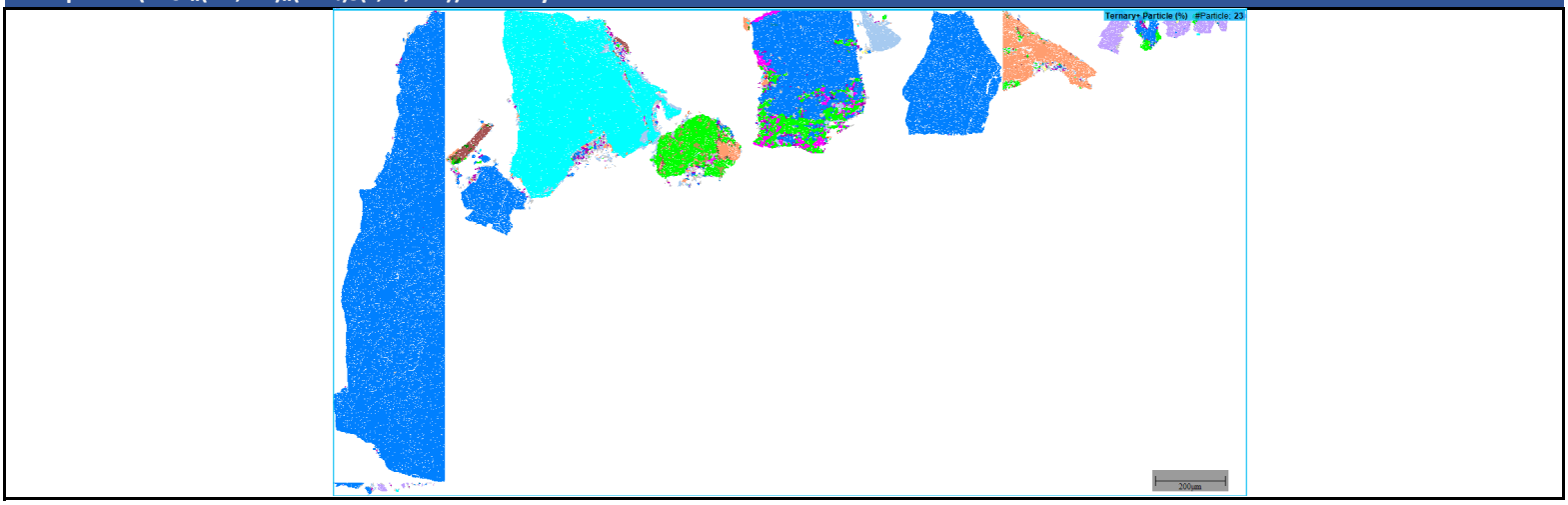
Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Ternary Particle



Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Liberated Particle

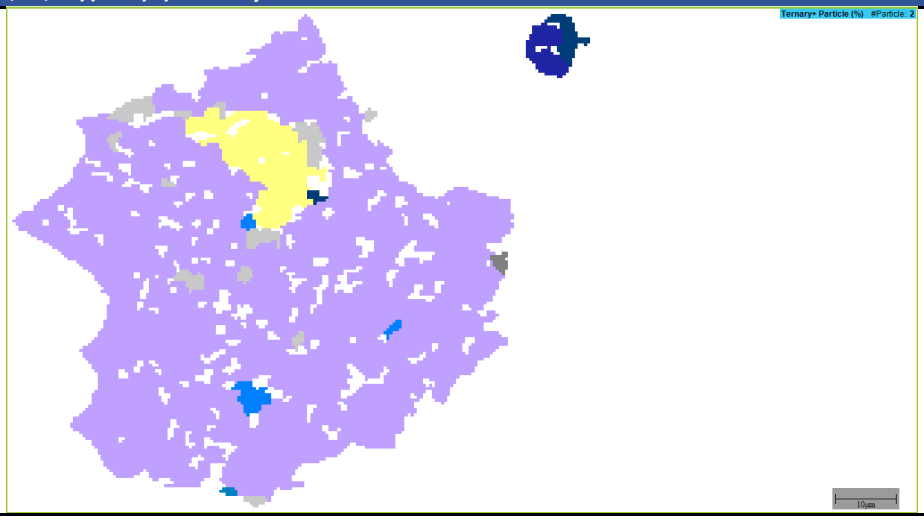
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Binary Particle

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Ternary Particle



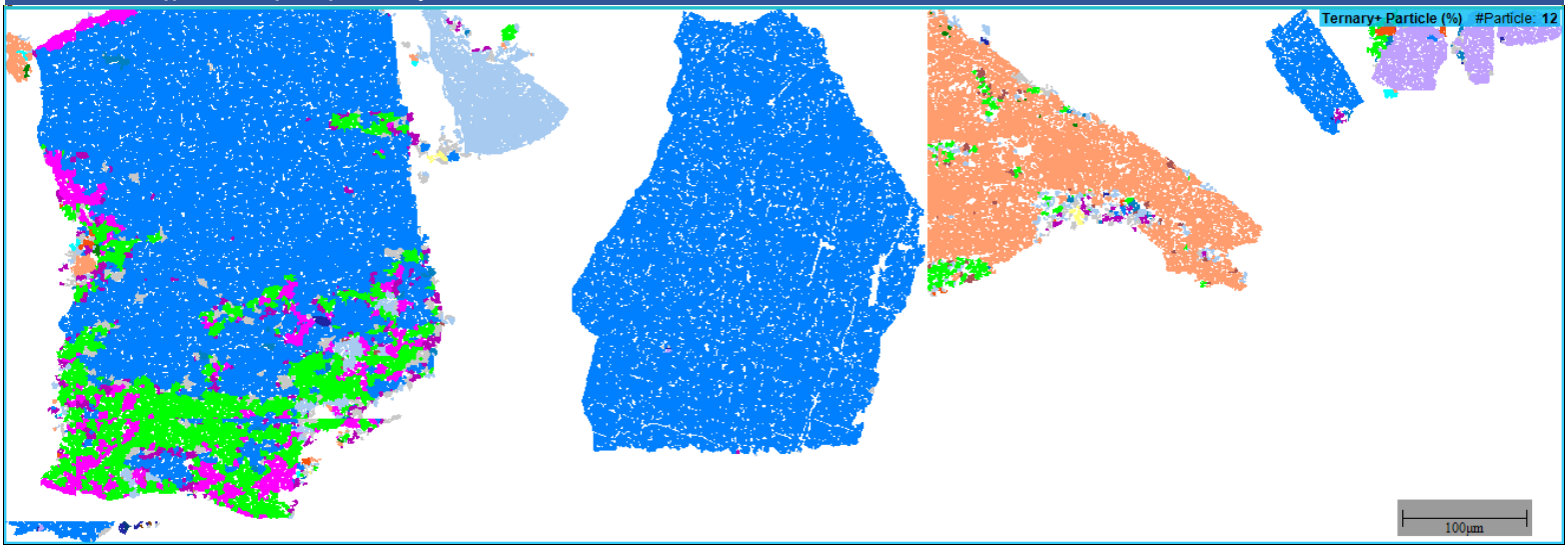
Mineral Locking Particle Image

Carbocernaite ((Ca,Na)(Sr,Ce,Ba)(CO3)2) Ternary Particle



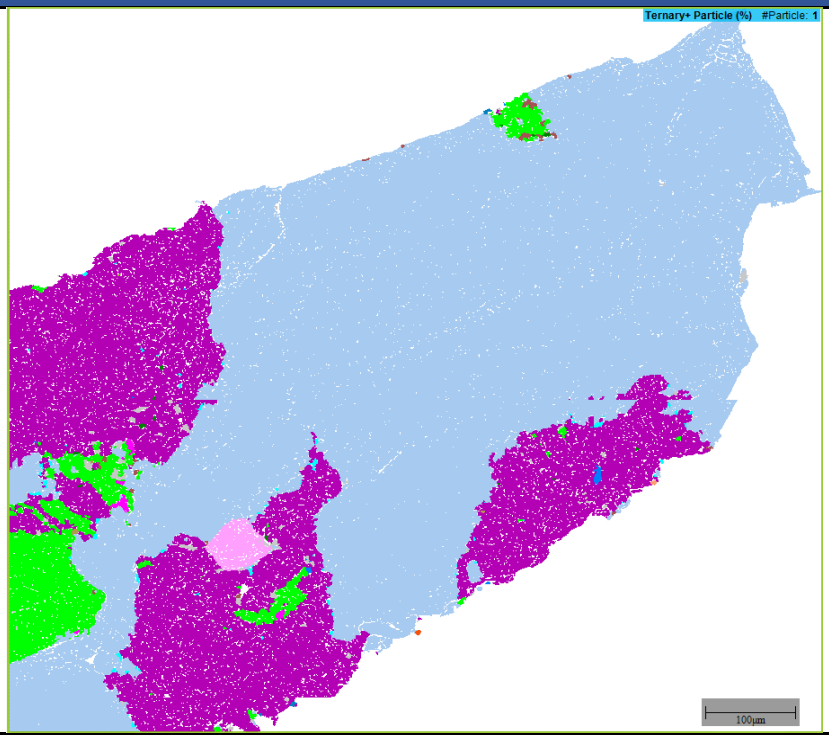
Monazite ((Ce,La,Nd)PO4) Binary Particle

Monazite ((Ce,La,Nd)PO4) Ternary Particle



Mineral Locking Particle Image

Zircon ($(Zr,Hf)SiO_4$) Ternary Particle

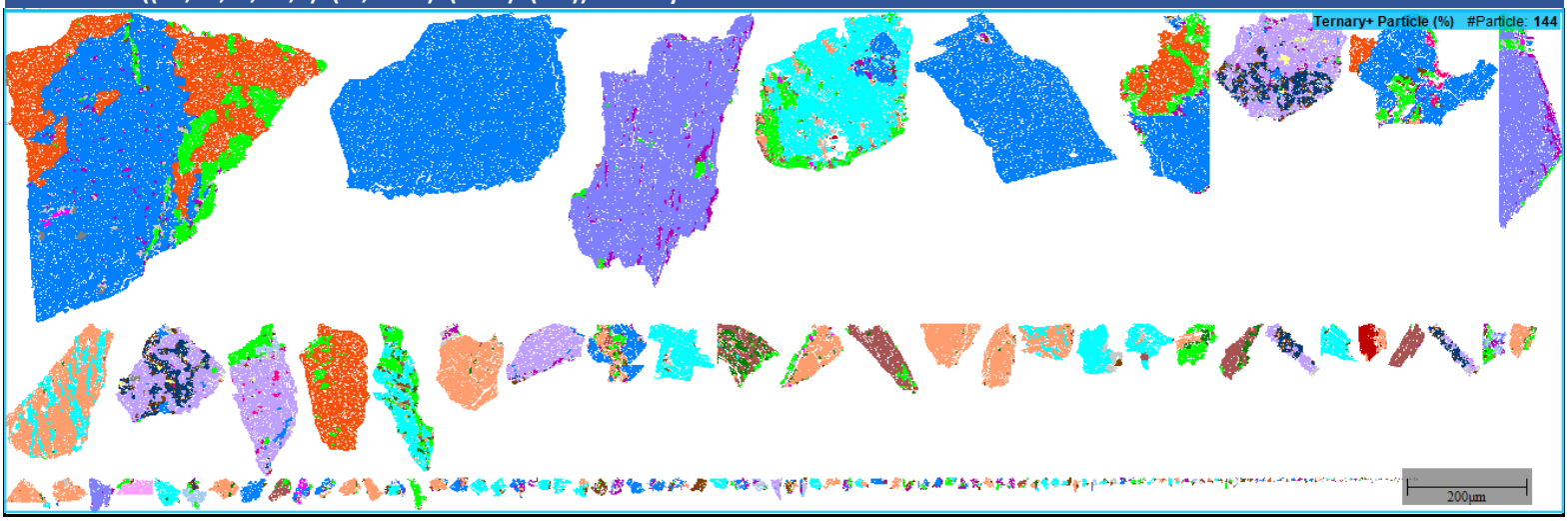


Drill Core "Allan"_SEM

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Liberated Particle

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Binary Particle

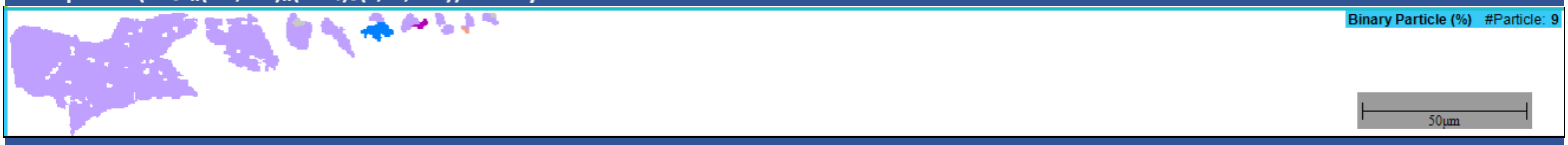
Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH)) Ternary Particle



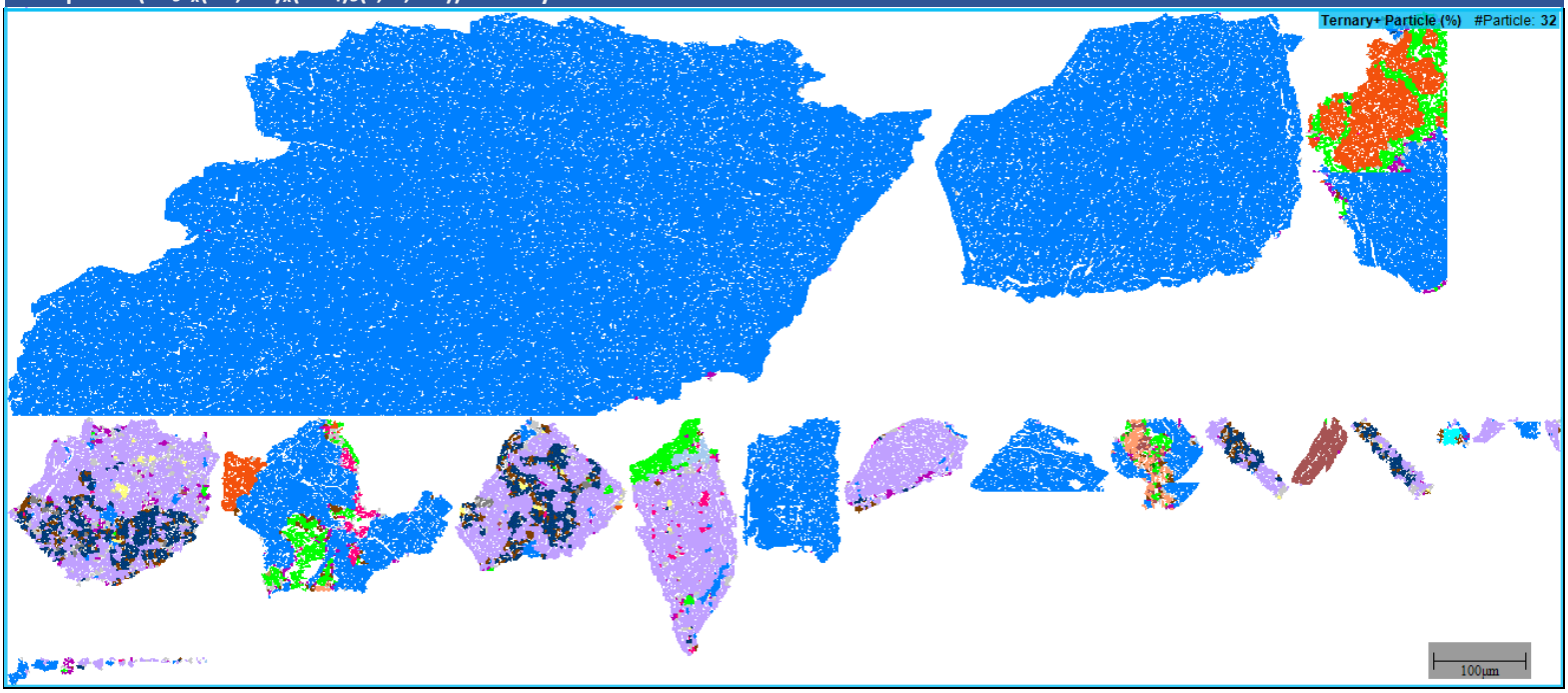
Mineral Locking Particle Image

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Liberated Particle

Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Binary Particle



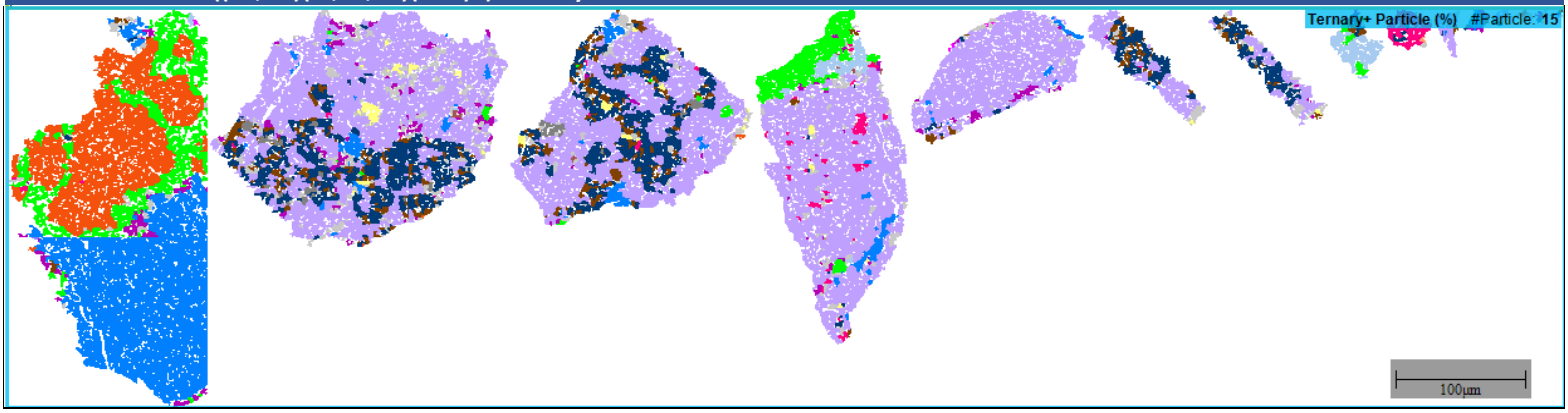
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$) Ternary Particle



Mineral Locking Particle Image

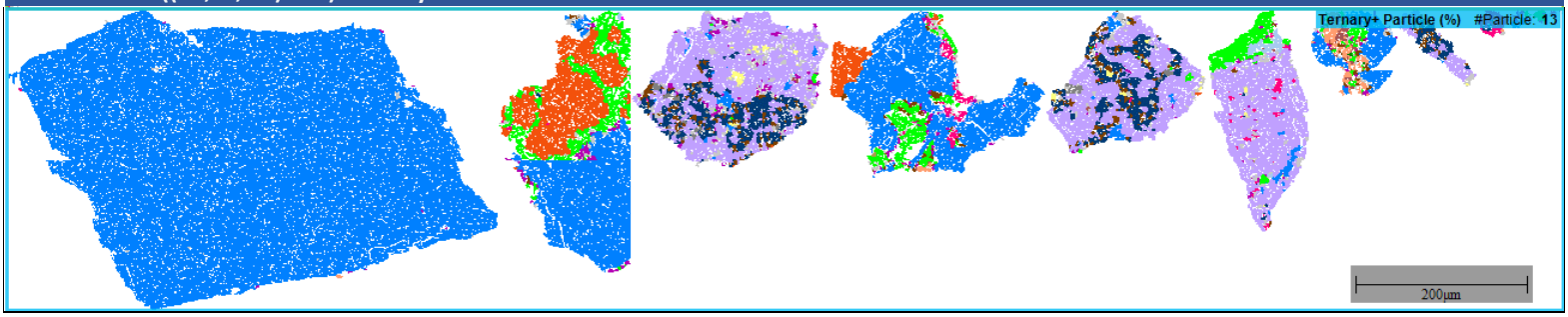
Carbocernaite ((Ca,Na)(Sr,Ce,Ba)(CO3)2) Liberated Particle

Carbocernaite ((Ca,Na)(Sr,Ce,Ba)(CO3)2) Ternary Particle



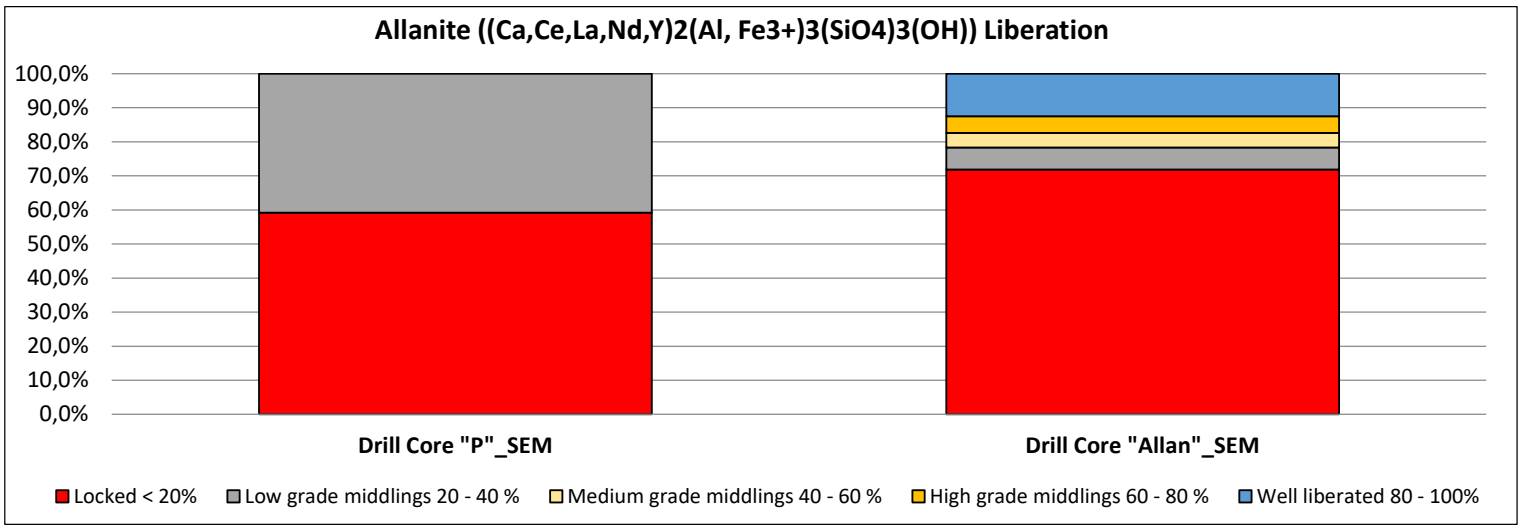
Monazite ((Ce,La,Nd)PO4) Binary Particle

Monazite ((Ce,La,Nd)PO4) Ternary Particle



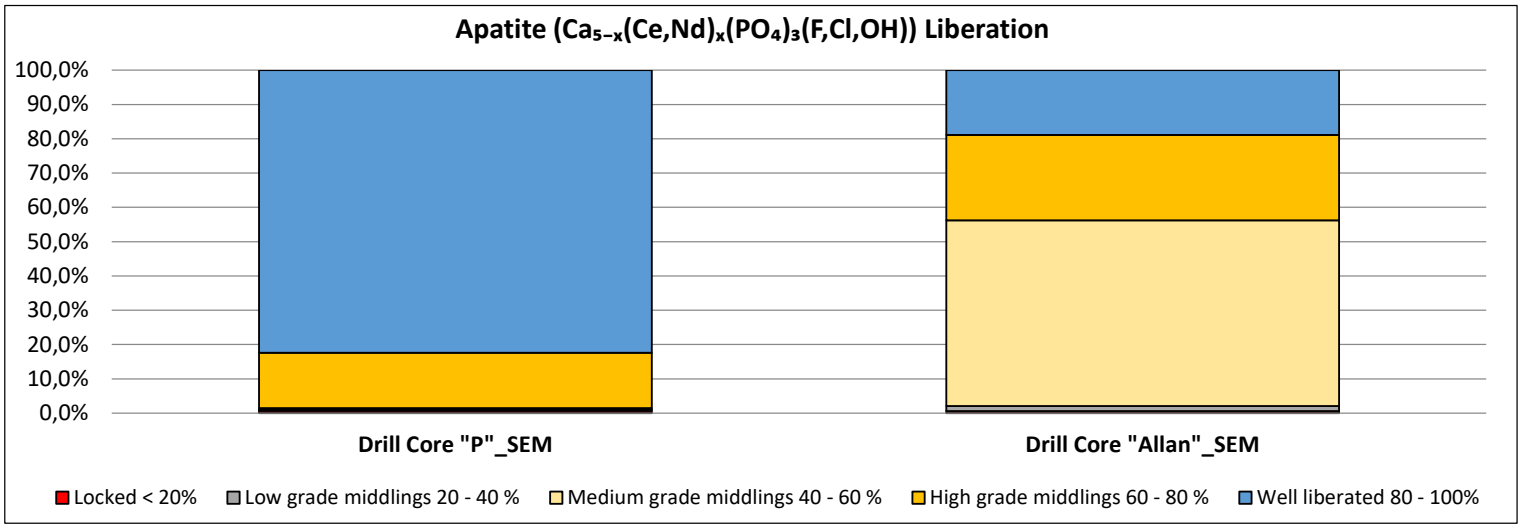
Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Liberation Classes	Surface Area	Drill Core "P"_SEM	Drill Core "Allan"_SEM
Locked	< 20%	59,2	71,9
Low grade middlings	20 - 40 %	40,8	6,4
Medium grade middlings	40 - 60 %		4,3
High grade middlings	60 - 80 %		4,9
Well liberated	80 - 100%		12,5
	Total	**100,0**	**100,0**



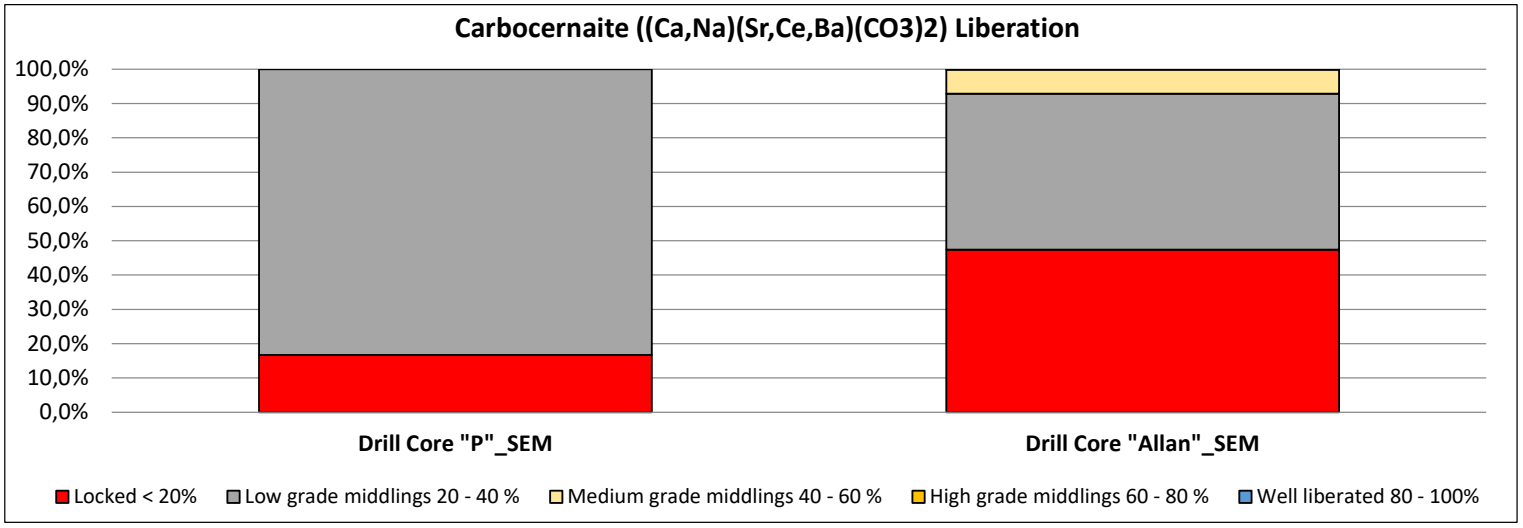
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

Liberation Classes	Surface Area	Drill Core "P"_SEM	Drill Core "Allan"_SEM
Locked	< 20%	0,7	0,6
Low grade middlings	20 - 40 %	0,3	1,5
Medium grade middlings	40 - 60 %	0,4	54,1
High grade middlings	60 - 80 %	16,1	24,9
Well liberated	80 - 100%	82,4	18,9
	Total	**100,0**	**100,0**



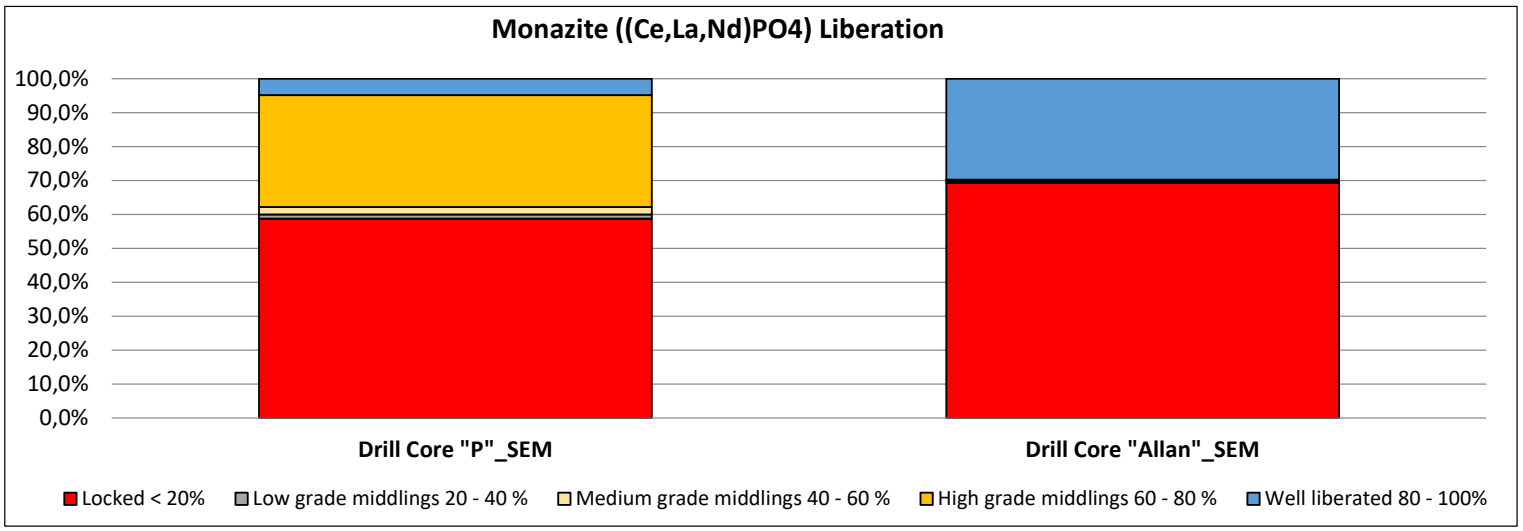
Carbocernaite ((Ca,Na)(Sr,Ce,Ba)(CO3)2)

Liberation Classes	Surface Area	Drill Core "P"_SEM	Drill Core "Allan"_SEM
Locked	< 20%	16,7	47,4
Low grade middlings	20 - 40 %	83,3	45,4
Medium grade middlings	40 - 60 %		7,1
High grade middlings	60 - 80 %		
Well liberated	80 - 100%		0,1
	Total	**100,0**	**100,0**



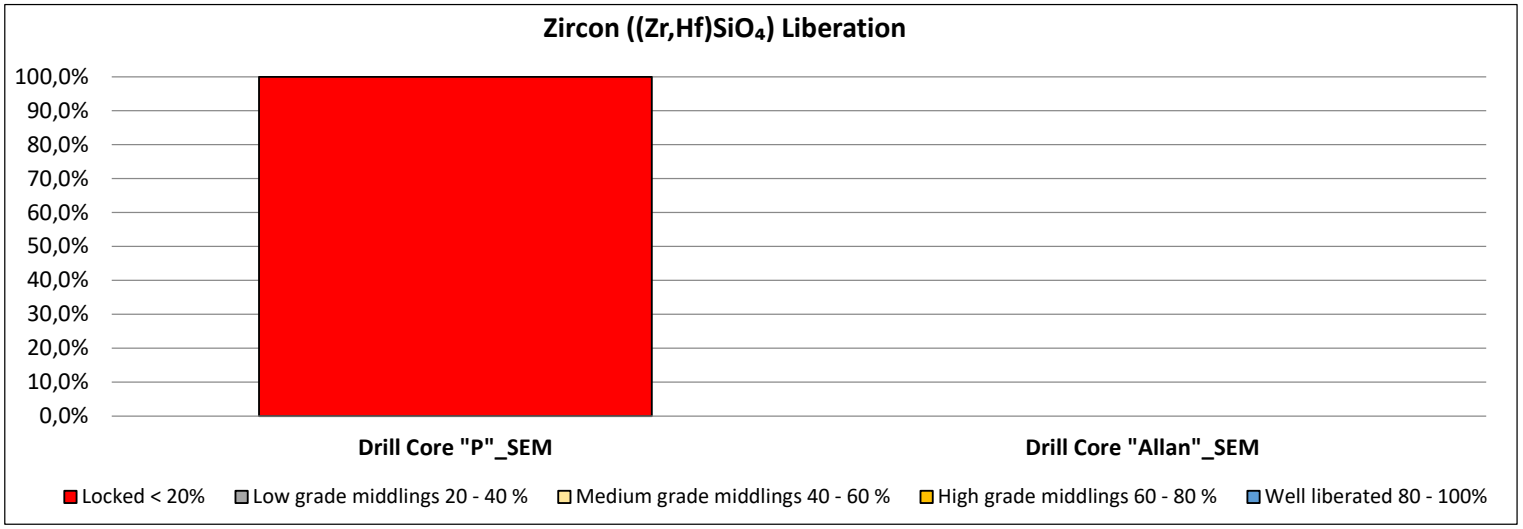
Monazite ((Ce,La,Nd)PO4)

Liberation Classes	Surface Area	Drill Core "P"_SEM	Drill Core "Allan"_SEM
Locked	< 20%	58,8	69,3
Low grade middlings	20 - 40 %	1,2	0,6
Medium grade middlings	40 - 60 %	2,2	0,2
High grade middlings	60 - 80 %	33,0	0,2
Well liberated	80 - 100%	4,8	29,7
	Total	**100,0**	**100,0**



Zircon ($(Zr,Hf)SiO_4$)

Liberation Classes	Surface Area	Drill Core "P"_SEM	Drill Core "Allan"_SEM
Locked	< 20%	100,0	
Low grade middlings	20 - 40 %		
Medium grade middlings	40 - 60 %		
High grade middlings	60 - 80 %		
Well liberated	80 - 100%		
	Total	**100,0**	

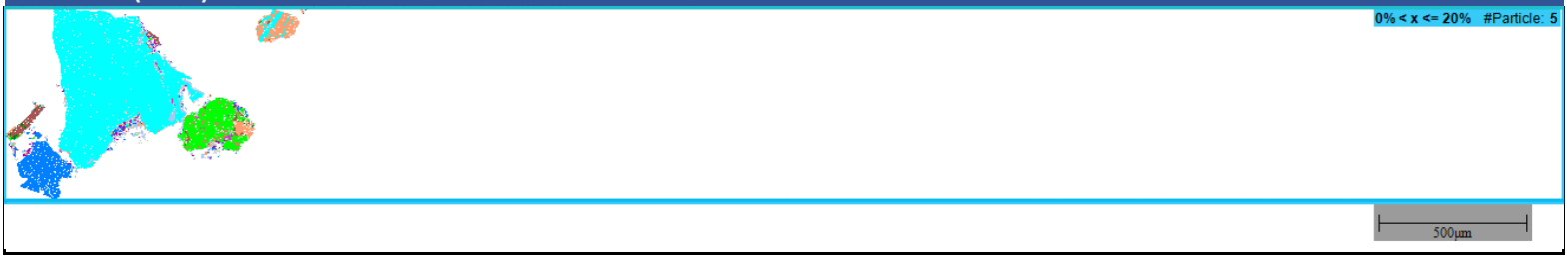


Liberation Class Particle Image

Drill Core "P"_SEM

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Locked (<20%)



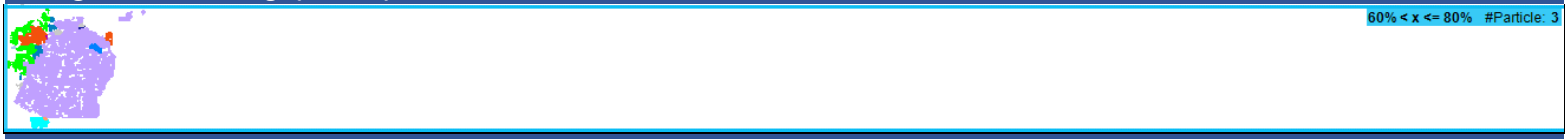
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

Locked (<20%)

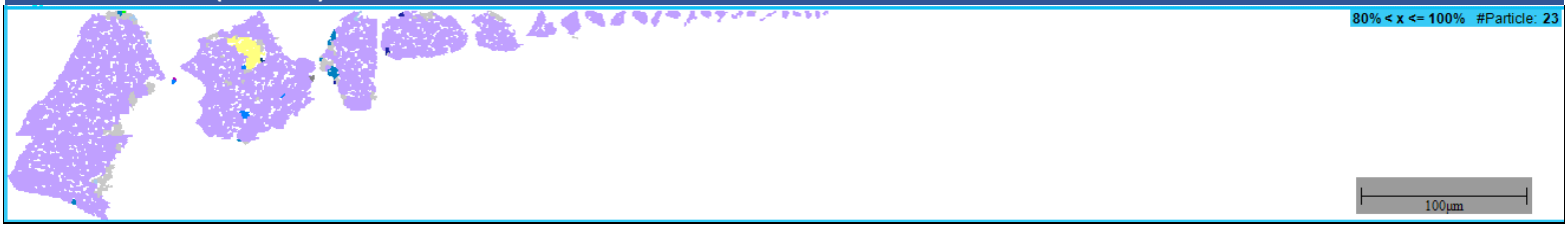
Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)

High Grade Middlings (60-80%)



Well-liberated (80-100%)



Liberation Class Particle Image

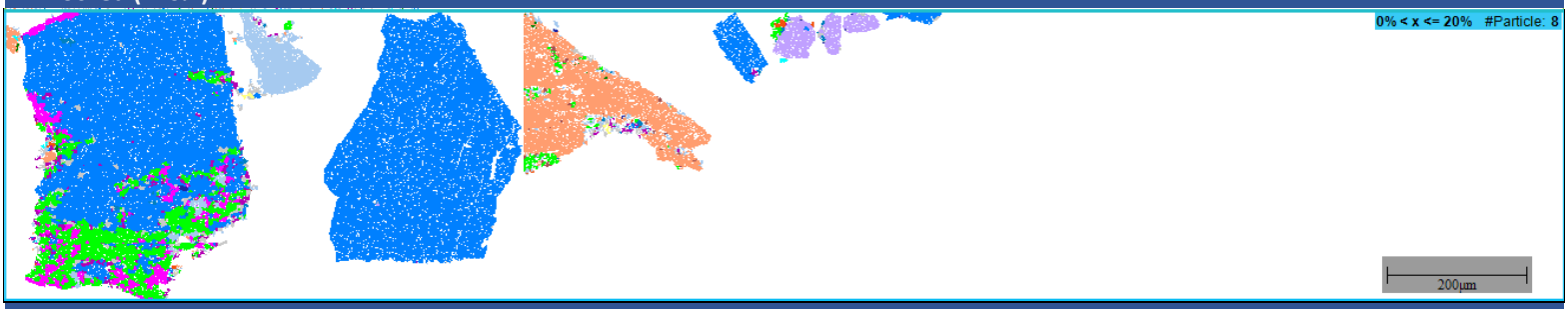
Carbocernaite ((Ca,Na)(Sr,Ce,Ba)(CO3)2)

Locked (<20%)

Low Grade Middlings (20-40%)

Monazite ((Ce,La,Nd)PO4)

Locked (<20%)

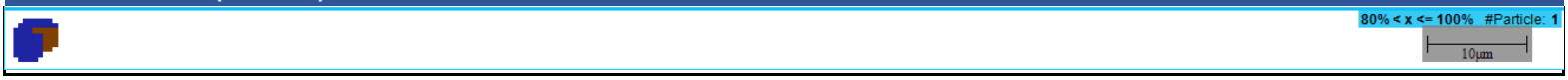


Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)

High Grade Middlings (60-80%)

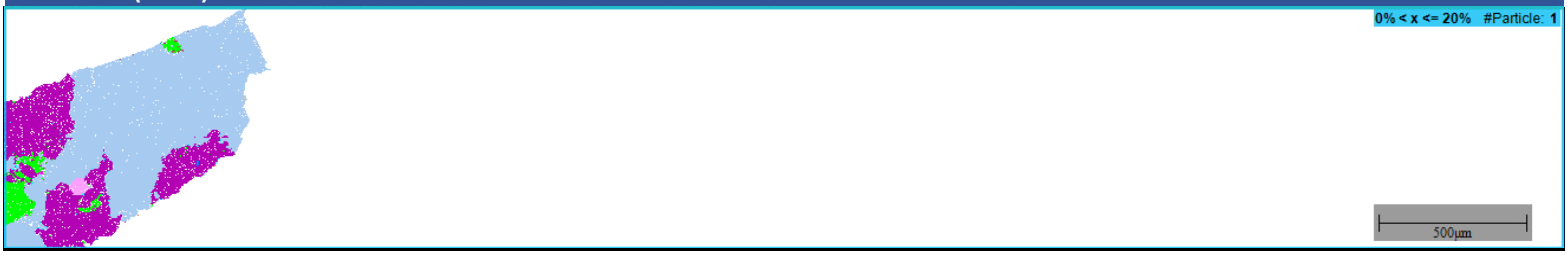
Well-liberated (80-100%)



Liberation Class Particle Image

Zircon ($(Zr,Hf)SiO_4$)

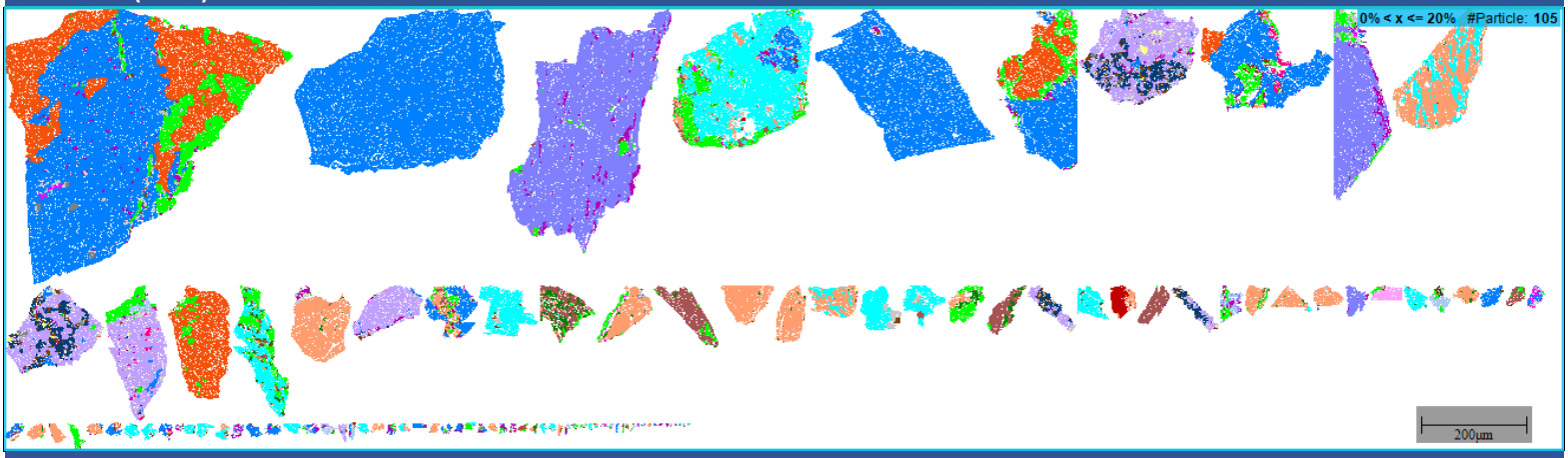
Locked (<20%)



Drill Core "Allan"_SEM

Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))

Locked (<20%)



Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)

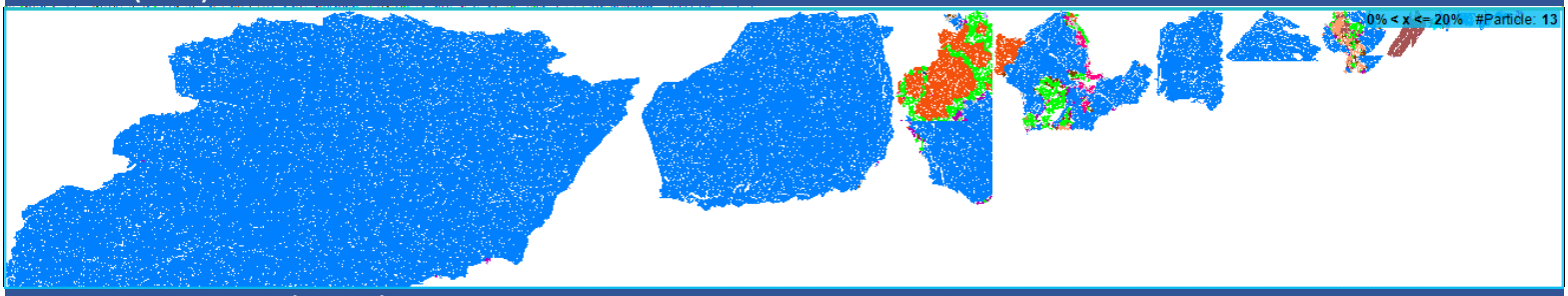
High Grade Middlings (60-80%)

Well-liberated (80-100%)

Liberation Class Particle Image

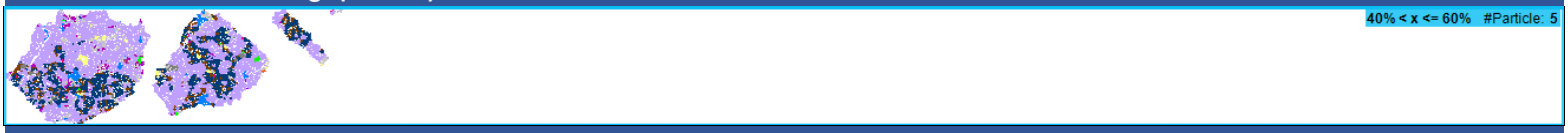
Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

Locked (<20%)

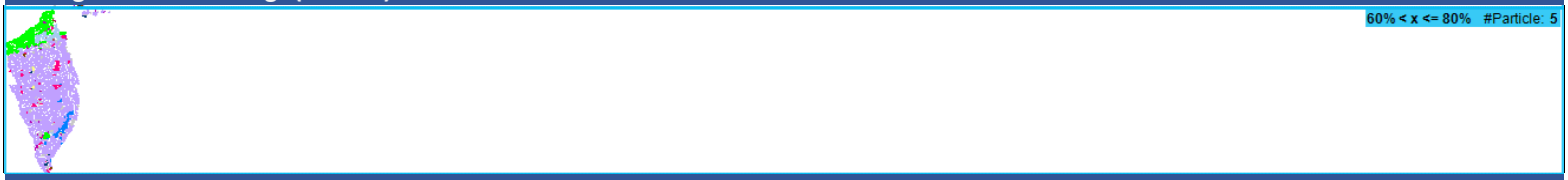


Low Grade Middlings (20-40%)

Medium Grade Middlings (40-60%)



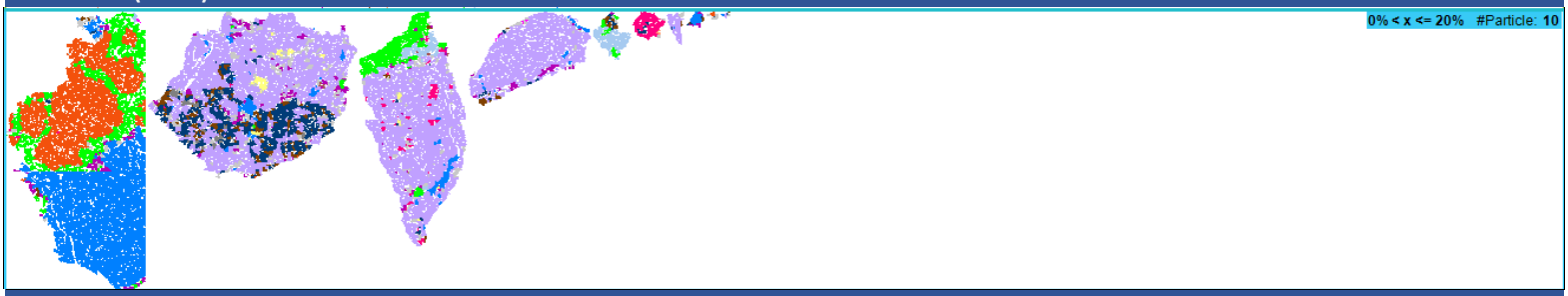
High Grade Middlings (60-80%)



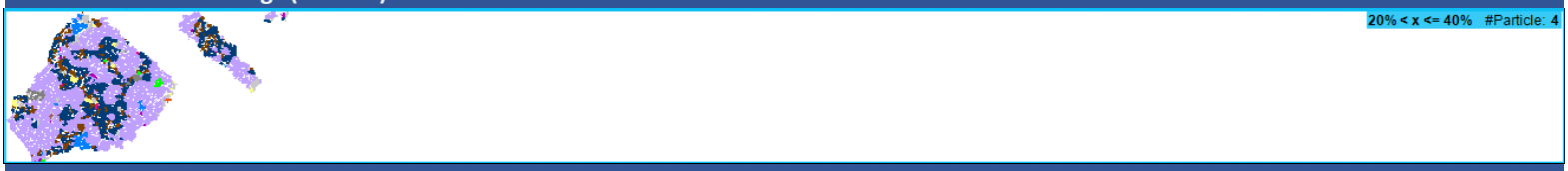
Well-liberated (80-100%)

Carbocernaite ((Ca,Na)(Sr,Ce,Ba)(CO3)2)

Locked (<20%)



Low Grade Middlings (20-40%)



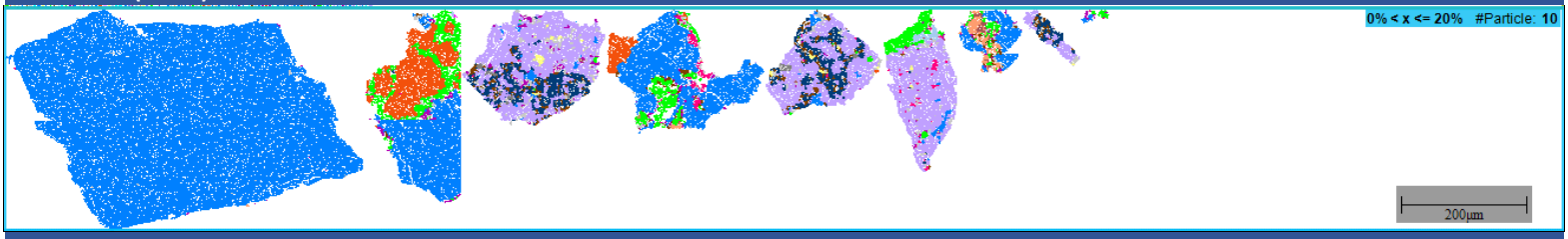
Medium Grade Middlings (40-60%)

Well-liberated (80-100%)

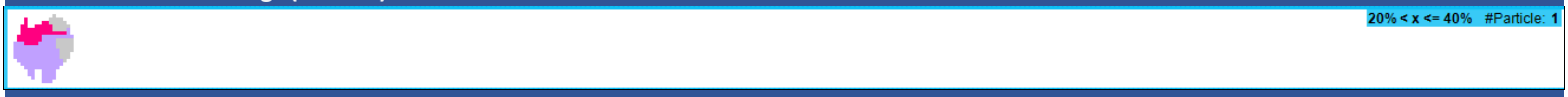
Liberation Class Particle Image

Monazite ((Ce,La,Nd)PO4)

Locked (<20%)



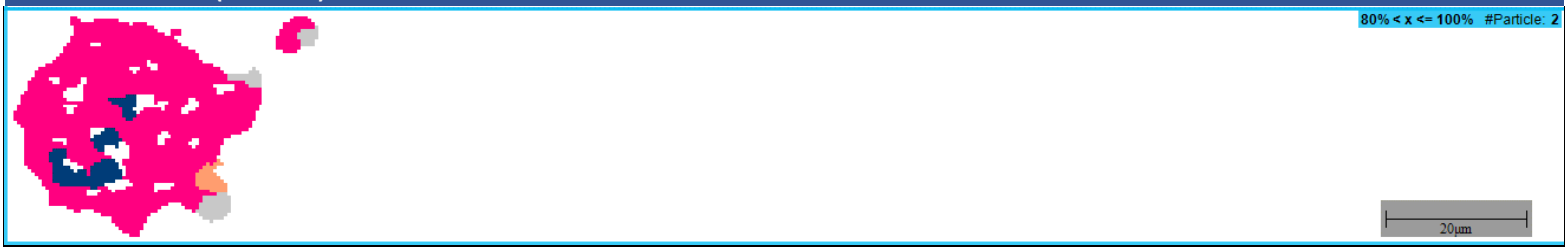
Low Grade Middlings (20-40%)



Medium Grade Middlings (40-60%)

High Grade Middlings (60-80%)

Well-liberated (80-100%)

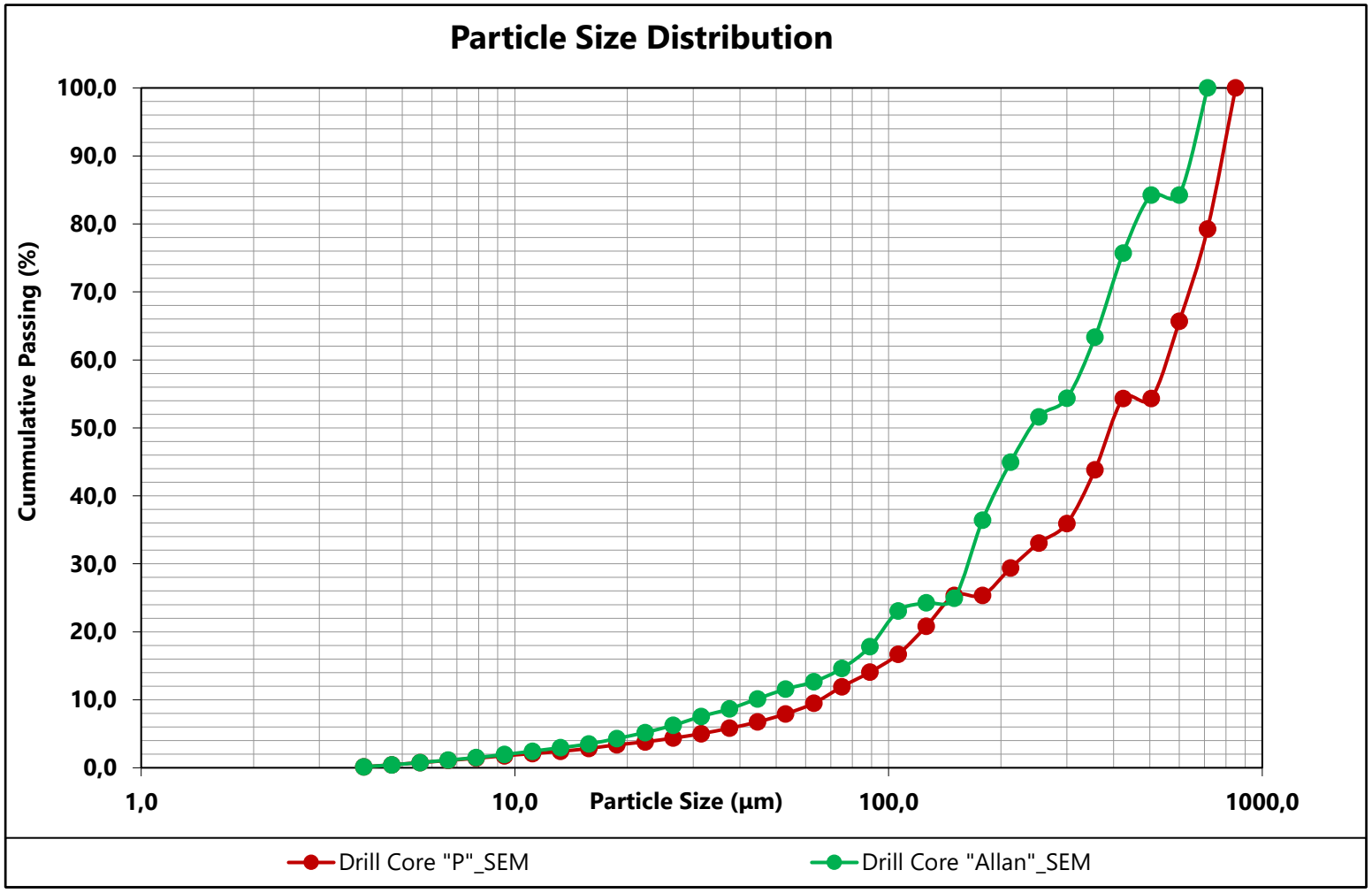


Mineralogical Report - Size Distribution

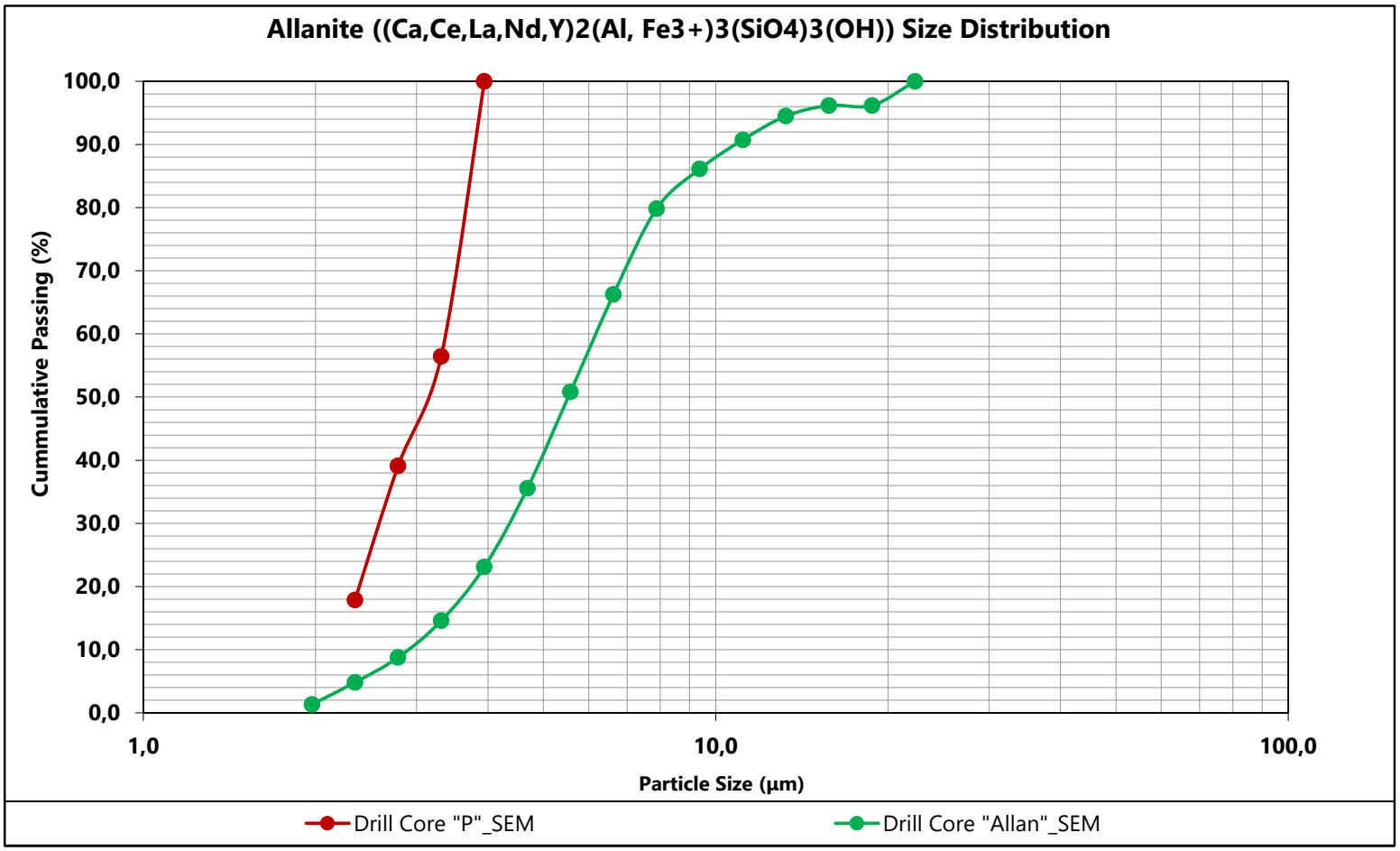
Size	Drill Core "P"_SEM	Drill Core "Allan"_SEM
848,5	100,0	
713,5	79,3	100,0
600,0	65,7	84,3
504,5	54,3	84,3
424,3	54,3	75,7
356,8	43,8	63,3
300,0	35,9	54,4
252,3	33,1	51,6
212,1	29,4	44,9
178,4	25,4	36,4
150,0	25,4	25,0
126,1	20,8	24,3
106,1	16,7	23,1
89,2	14,1	17,8
75,0	11,9	14,6
63,1	9,5	12,7
53,0	7,9	11,6
44,6	6,7	10,1
37,5	5,8	8,7
31,5	5,0	7,6
26,5	4,4	6,2
22,3	3,8	5,2
18,8	3,4	4,3
15,8	2,8	3,5
13,3	2,4	3,0
11,1	2,1	2,4
9,4	1,8	2,0
7,9	1,4	1,5
6,6	1,1	1,1
5,6	0,8	0,8
4,7	0,4	0,4
3,9	0,1	0,1

Mineralogical Report - Size Distribution

P-Value	Drill Core "P"_SEM	Drill Core "Allan"_SEM
P-80	718,3	464,7
P-50	396,6	242,5
P-20	122,2	96,2



Allanite ((Ca,Ce,La,Nd,Y)2(Al, Fe3+)3(SiO4)3(OH))		
Size	**Drill Core "P"_SEM**	**Drill Core "Allan"_SEM**
22,3		100,0
18,8		96,2
15,8		96,2
13,3		94,5
11,1		90,7
9,4		86,1
7,9		79,8
6,6		66,3
5,6		50,8
4,7		35,5
3,9	100,0	23,1
3,3	56,4	14,6
2,8	39,1	8,8
2,3	17,9	4,8
2,0		1,3
P-Value	**Drill Core "P"_SEM**	**Drill Core "Allan"_SEM**
P-80	3,7	7,9
P-50	3,1	5,5
P-20	2,4	3,7

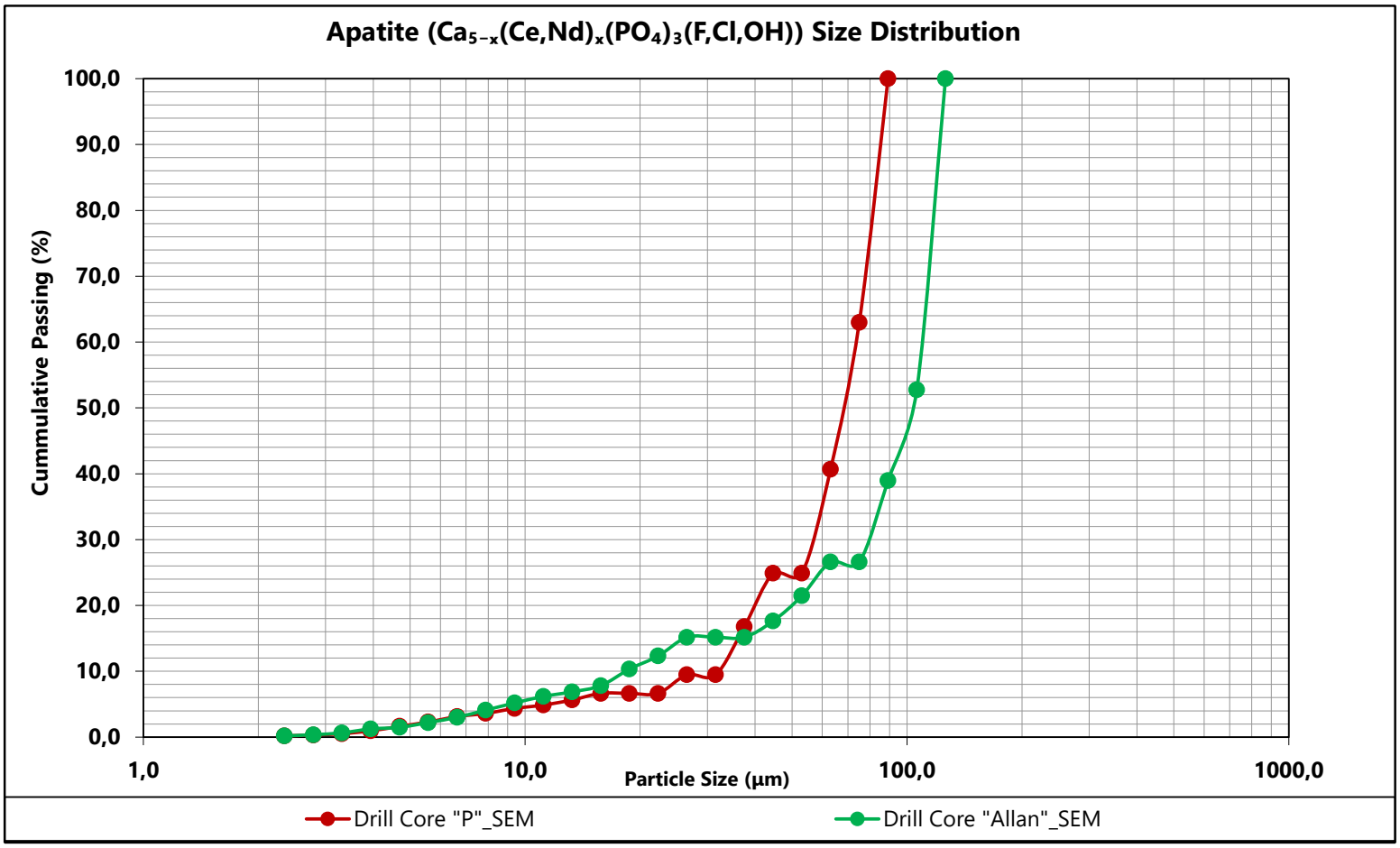


Apatite ($Ca_{5-x}(Ce,Nd)_x(PO_4)_3(F,Cl,OH)$)

Size	Drill Core "P"_SEM	Drill Core "Allan"_SEM
126,1		100,0
106,1		52,7
89,2	100,0	39,0
75,0	63,0	26,6
63,1	40,7	26,6
53,0	24,9	21,5
44,6	24,9	17,6
37,5	16,8	15,2
31,5	9,5	15,2
26,5	9,5	15,2
22,3	6,6	12,3
18,8	6,6	10,3
15,8	6,6	7,8
13,3	5,6	6,9
11,2	4,9	6,2
9,4	4,4	5,2
7,9	3,6	4,1
6,6	3,1	3,0
5,6	2,3	2,2
4,7	1,6	1,5
3,9	1,0	1,2
3,3	0,5	0,7
2,8	0,3	0,4
2,3	0,2	0,2
		0,1

Mineralogical Report - Mineral of Interest Grain Size

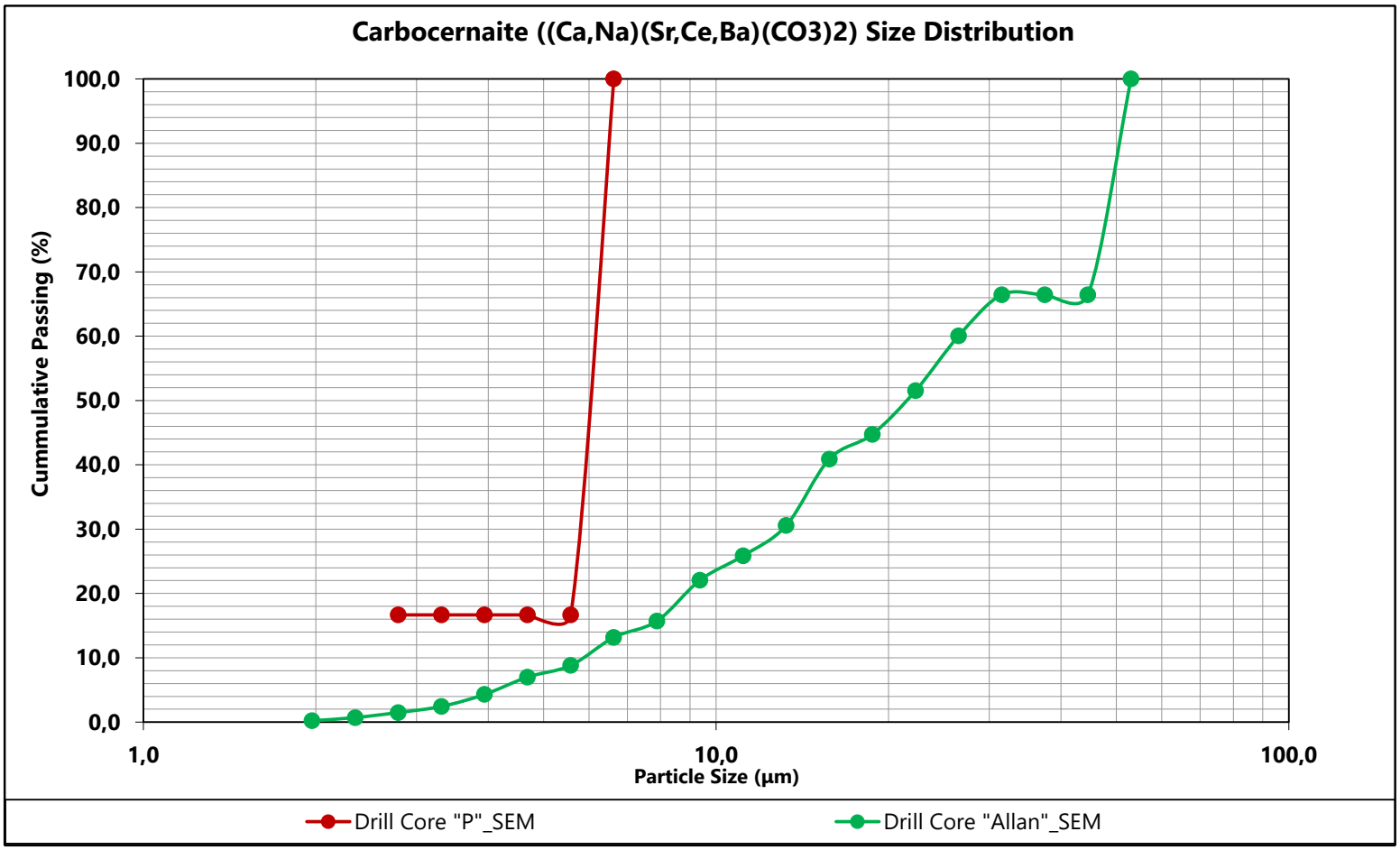
P-Value	Drill Core "P"_SEM	Drill Core "Allan"_SEM
P-80	81,5	117,6
P-50	68,1	102,7
P-20	40,3	49,8



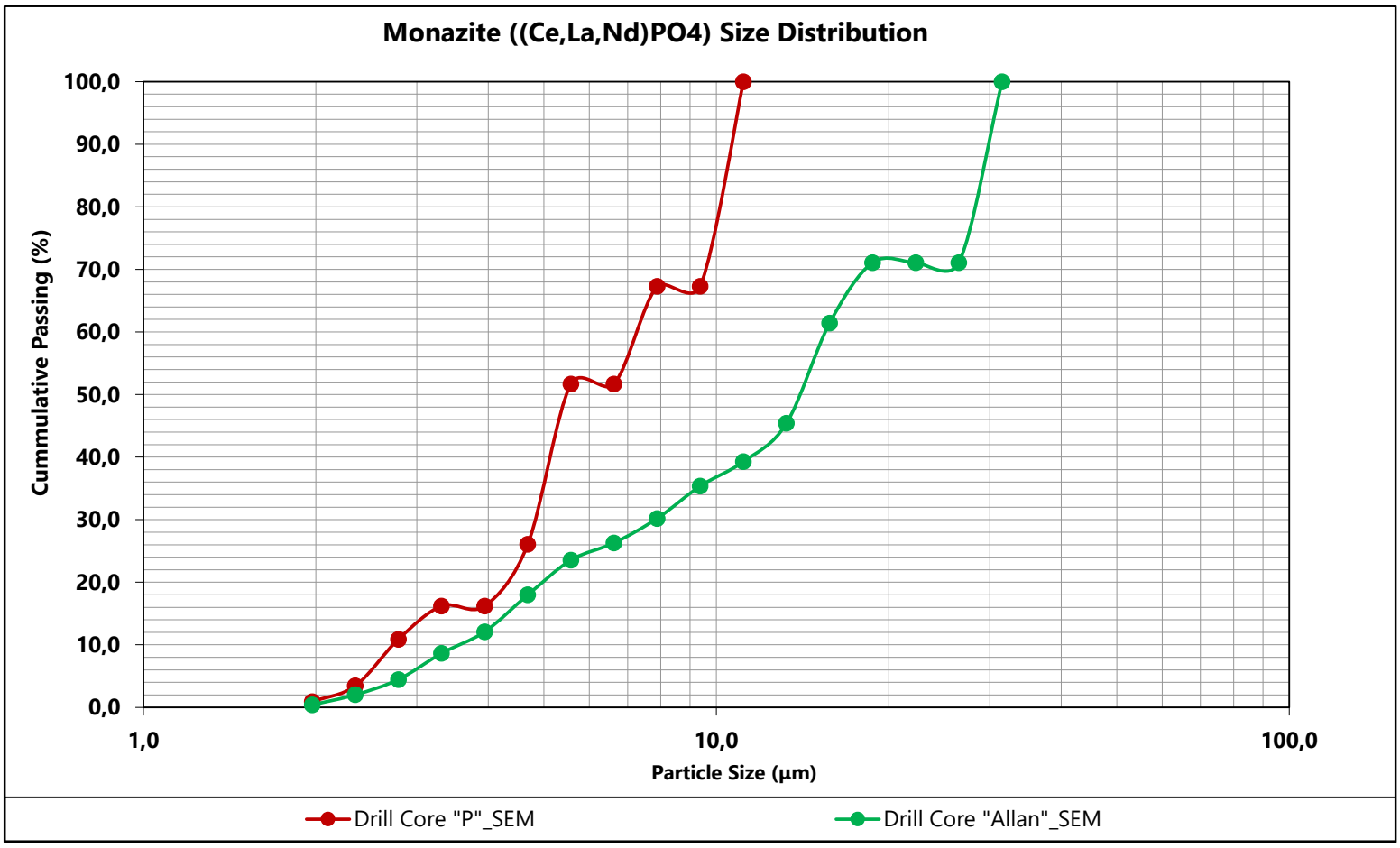
Carbocernaite ((Ca,Na)(Sr,Ce,Ba)(CO3)2)		
Size	**Drill Core "P"_SEM**	**Drill Core "Allan"_SEM**
53,0		100,0
44,6		66,4
37,5		66,4
31,5		66,4
26,5		60,0
22,3		51,5
18,8		44,8
15,8		40,9
13,3		30,6
11,1		25,9
9,4		22,1
7,9		15,7
6,6	100,0	13,2
5,6	16,7	8,8
4,7	16,7	7,0
3,9	16,7	4,3
3,3	16,7	2,4
2,8	16,7	1,5
2,3		0,7
2,0		0,2

Mineralogical Report - Mineral of Interest Grain Size

P-Value	Drill Core "P"_SEM	Drill Core "Allan"_SEM
P-80	6,4	48,0
P-50	6,0	21,5
P-20	5,6	8,9

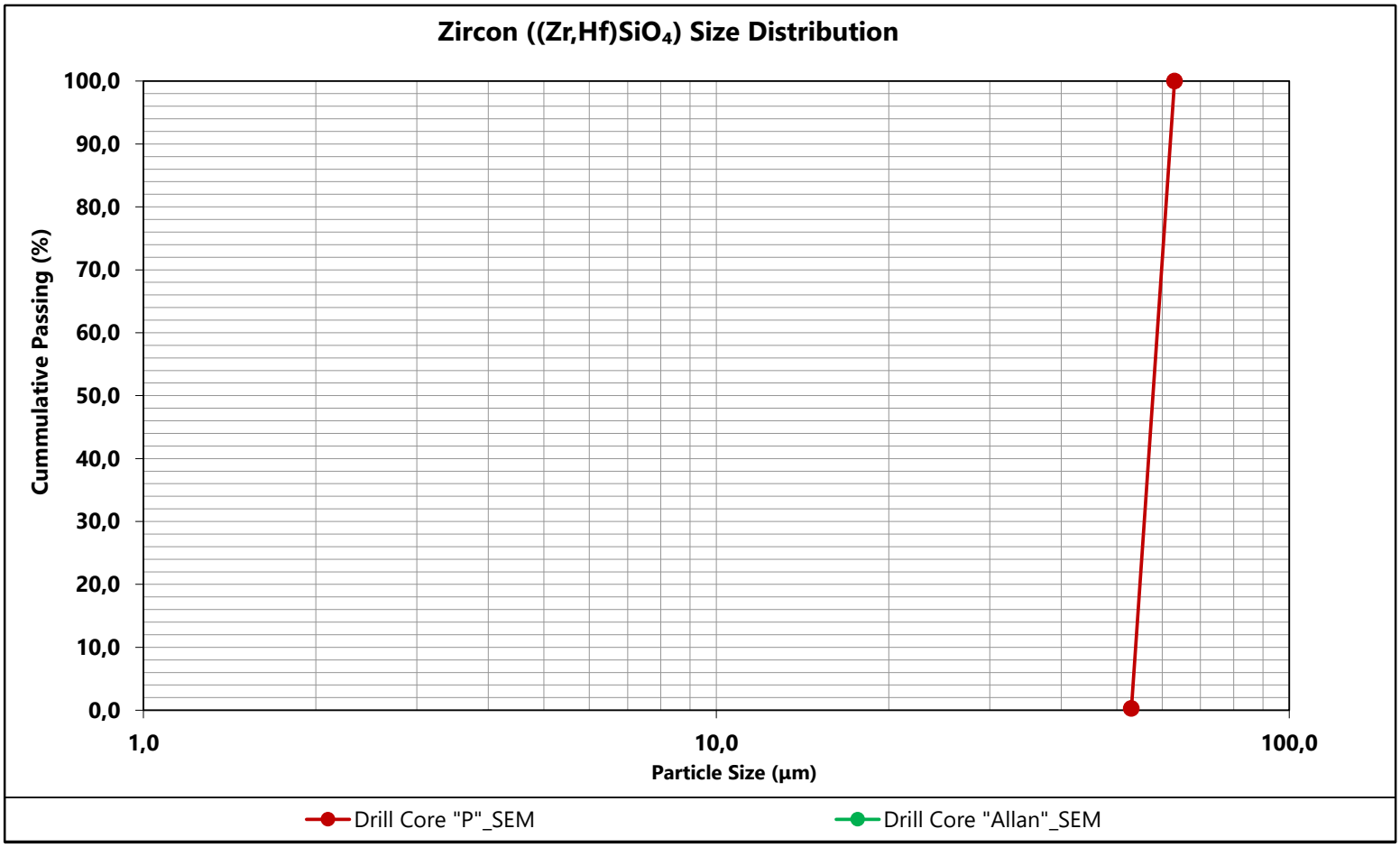


Monazite ((Ce,La,Nd)PO4)		
Size	**Drill Core "P"_SEM**	**Drill Core "Allan"_SEM**
31,5		100,0
26,5		71,1
22,3		71,1
18,8		71,1
15,8		61,4
13,3		45,4
11,1	100,0	39,3
9,4	67,3	35,4
7,9	67,3	30,2
6,6	51,7	26,3
5,6	51,7	23,5
4,7	26,1	18,0
3,9	16,2	12,1
3,3	16,2	8,7
2,8	10,9	4,5
2,3	3,4	2,0
2,0	0,9	0,4
P-Value	**Drill Core "P"_SEM**	**Drill Core "Allan"_SEM**
P-80	10,1	28,1
P-50	5,5	14,0
P-20	4,2	5,0



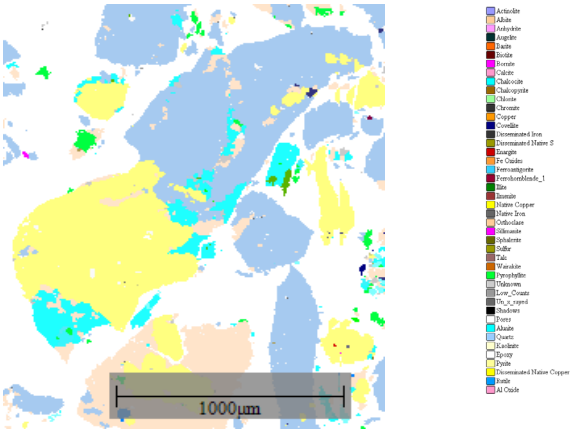
Mineralogical Report - Mineral of Interest Grain Size

Zircon ($(Zr,Hf)SiO_4$)		
Size	**Drill Core "P"_SEM**	**Drill Core "Allan"_SEM**
63,1	100,0	
53,0	0,3	
P-Value	**Drill Core "P"_SEM**	**Drill Core "Allan"_SEM**
P-80	61,1	
P-50	58,0	
P-20	55,0	



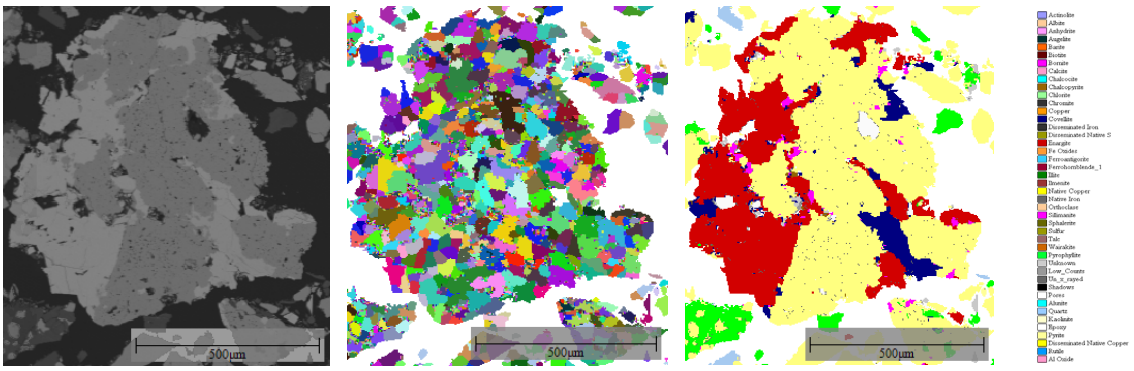
Mineralogical Report - Glossary

Scanning Electron Microscope (SEM)	An electron based mineralogical measurement technique. This method is also supported by Energy Dispersive Spectrometry (EDS), which emits x-ray to define pointed mineral based on the chemical composition.
Mineral Liberation Analysis (MLA)	The Mineral Liberation Analyzer (MLA) is an automated mineral analysis system that can identify minerals in polished sections of drill core, particulate or lump materials, and quantify a wide range of mineral characteristics, such as mineral abundance, grain size and liberation. Mineral texture and liberation potential are fundamental properties of ore and drive its economic treatment; the data gathered by the MLA is therefore invaluable to geologists, mineralogists. At PT. Geoservices, the MLA software is Advance Mineralogical Identification Characterization System (AMICS) by Bruker.
Backscattered Electron (BSE)	BSE come from the deeper regions of the sample. BSE images show high sensitivity to differences in atomic number, The higher the atomic number, the brighter the image appears in the image.
Particle Mineral Analysis (PMA)	This analysis provides mineral composition (including non-sulfide gangue), element mineral deportment, and mineral fragmentation characteristics (liberation and association). The analysis normally performed on each fraction of sized samples, typically four fractions per sample.
Bulk Mineral Analysis	Rapid line scan analysis in one direction only to provide good statistics on bulk mineralogy. This measurement type not measure full sample area, only intersection lines. BMA is very fast mode. It provides modal mineralogy, calculated assay, estimated particle, grain size, and mineral association data.
Trace Mineral Search	Detailed particle mineralogical information on trace mineral (e.g. precious metals, penalty minerals, and other mineral of interest). This analysis provides mineral liberation, association, and grain size of target minerals.
Specific Mineral Search	Detailed particle mineralogical information on only specific Minerals of Interest (MoI).
Field Scan	Detailed mapping of larger saples (e.g. thin sections).
Modal Mineralogy	The bulk mineralogical composes the sample. Each analysed mineral provides the weight % (wt%) which is calculated from measurement area and uses average mineral densities. The presented mineralogy is in semi-quantitative manner and each minerals are classified by their spectra.
Assay Reconciliation	A comparison between chemical assay and AMICS assay as data validation.
Elemental Map	Distribution of selected element on several grain at certain area. Each elements will be distinguished based on software-based color. This mode is available on Esprit 2.1 software by Bruker.
Elemental Deportment	Quantify the average distribution of specific elements among the targeted minerals with several common gangue minerals on the sample. The elemental deportment is also compared to chemical assay as data validation.
Mineral Association	A spatial relationship measurement in terms of shared grain boundaries and mineral association refers to adjacency. Two minerals are "associated" if a pixel of one of the minerals occurs adjacent to a pixel of the other mineral. In this report association takes into account both vertically- and horizontally-adjacent pixels.
Particle	An aggregate of mineral grains. One particle may contain more than one mineral. On the other hand, grain is an individual mineral. A particle usually refers to a fragment of a rock or ore, the size of which is dependent on crushing and milling conditions .



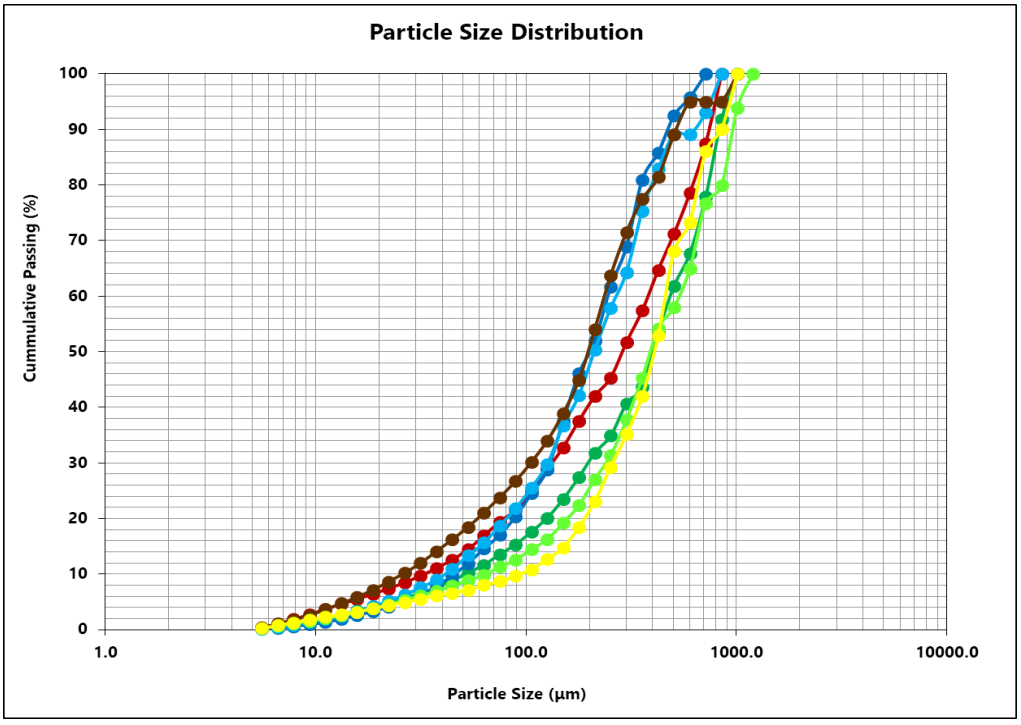
Segmented

Segmented data is an individual data based BSE color similarities. One mineral grain contains several segmented area.



Grain Size

The calculated grain size distribution is presented as cumulative curves. The cumulative weight percentage of grains less than a given grain size for each size fraction is plotted against the logarithm of the particle size



Mineral Image

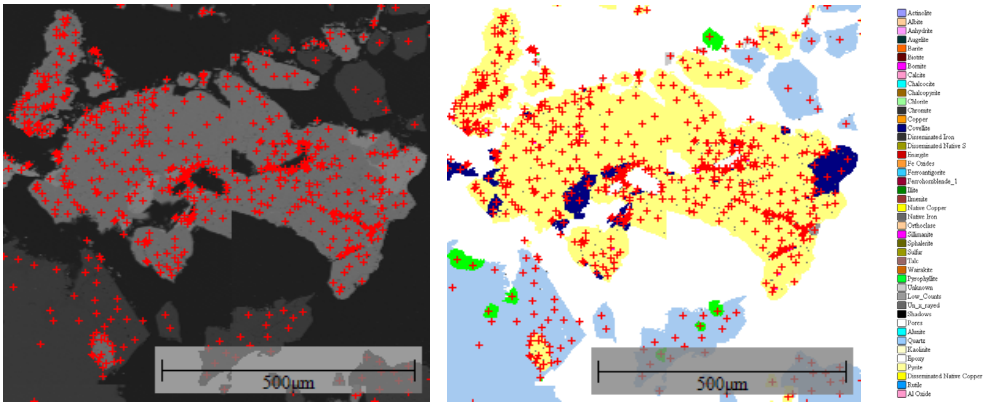
False color images of certain mineral distribution. The images are determined by the user.

Mineral Grouping

Several minerals which have the main mineral with one or more attached elements/ minerals. The main mineral has the most intense spectra than the attached element. The group name is based on the most intense mineral presences according to spectra peaks.

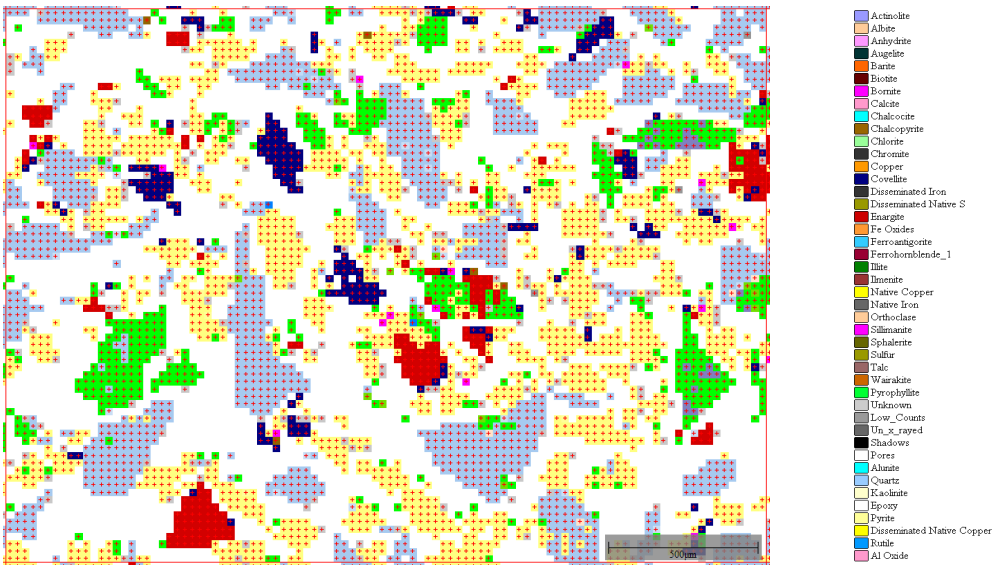
Particle Mode

AMICS measurement mode distinguished by certain mineral BSE level. Different BSE level will be subjected by the x-ray. One x-ray will classify one boundary which has similar BSE level and determine it as a certain mineral. This measurement mode provides a faster scanning mode.



Mapping Mode

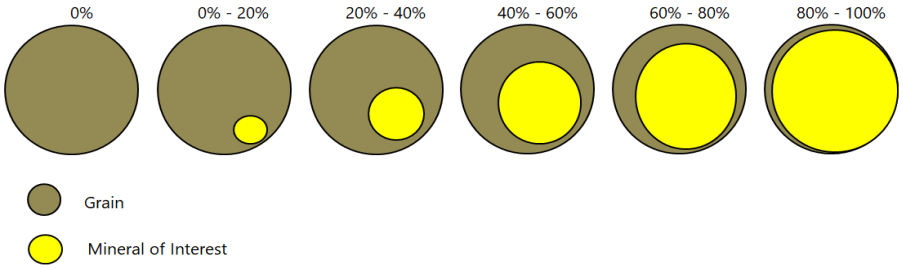
A grid-based measurement mode in AMICS. The x-ray will be subjected to each minerals and scanned based on certain x-ray spacing. The x-ray is also subjected to certain mineral based on their boundaries, therefore epoxy will not be scanned. The result is a pixel-like image. This scanning mode consumes longer measurement time, however it provides more detailed result.



Mineral Liberation

The Mineral liberation examines mineral compositon on a particle by particle basis. It focuses on the mineral of interest liberation degree. It is calculated according to one of two methods, using area % or surface area% that the target mineral occupies within the particle.

Mineral Locking	It describes the association of minerals (not necessarily adjacent minerals). Mineral locking is also related to the number of particle locked to Mineral of Interest (MoI), including "binary" (more than 2 minerals attached to MoI) and "ternary" (more than 3 minerals attached to MoI). On the other hand, "liberated" implies for non-locking condition of MoI to other minerals.
Locked	In the context of this report, a mineral of interest is considered locked when the surface area % of the mineral over the total particle is ≤ 20%.
Exposed	A mineral/grain/particle is considered to be an exposed particle when the surface area% of the mineral of interest in that particle falls between 20 and 80% area%/surface area%.
Liberated	In the context of this report a particle containing > 80 surface area % of the mineral of interest is considered " liberated". The set limit might vary depending on the mineral or process used to treat it. Gold only has to be in contact with the leach medium and thus only needs to be exposed.
Liberation Classes	The classification of targeted mineral (mineral of interest) based on the degree of liberation. It divided into five classes. "Well Liberated" refers to targeted mineral comprises between 80 and 100 % by surface area of the particle. "High Grade Middling" refers to targeted mineral comprises between 60 and 80 by surface area of the particle. "Medium Grade Middling" refers to targeted mineral comprises between 40 and 60 % by surface area of the particle. "Low Grade Middling" refers to targeted mineral comprises between 20 and 40 % by surface area of the particle. "Locked" refers to targeted mineral below 20 % by surface area of the particle.
Size Distribution	Describes list of the particles/grains size and its cummulative percentage. Graph are plotted in logarithmic scale.



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APPENDICES

Mineralogical Report - Chemical Analysis

SCHEME	ANALYTE CODE	DESCRIPTION	UNIT	D.L	Drill Core "P"_HG	Drill Core "Allan"_HG
MET_GAM04_MS_REE	Ce	Cerium	ppm	0,1	1898,5	9687,0
MET_GAM04_MS_REE	Dy	Dysprosium	ppm	0,05	28,85	18,75
MET_GAM04_MS_REE	Er	Erbium	ppm	0,03	8,75	5,85
MET_GAM04_MS_REE	Ey	Europium	ppm	0,02	37,30	39,40
MET_GAM04_MS_REE	Gd	Gadolinium	ppm	0,05	87,86	84,70
MET_GAM04_MS_REE	Ho	Holmium	ppm	0,01	3,75	2,95
MET_GAM04_MS_REE	La	Lanthanum	ppm	0,1	977,8	6472,5
MET_GAM04_MS_REE	Lu	Lutetium	ppm	0,01	0,75	0,50
MET_GAM04_MS_REE	Nb	Niobium	ppm	0,05	39,40	78,40
MET_GAM04_MS_REE	Nd	Neodymium	ppm	0,1	1071,7	2773,4
MET_GAM04_MS_REE	Pr	Praseodymium	ppm	0,02	247,50	950,25
MET_GAM04_MS_REE	Sc	Scandium	ppm	0,5	6,5	22,0
MET_GAM04_MS_REE	Sm	Samarium	ppm	0,03	162,25	226,95
MET_GAM04_MS_REE	Tb	Terbium	ppm	0,01	7,15	5,35
MET_GAM04_MS_REE	Th	Thorium	ppm	0,05	55,85	151,75
MET_GAM04_MS_REE	Tm	Thulium	ppm	0,01	0,85	0,70
MET_GAM04_MS_REE	U	Uranium	ppm	0,05	37,90	11,75
MET_GAM04_MS_REE	Y	Yttrium	ppm	0,1	107,5	51,3
MET_GAM04_MS_REE	Yb	Ytterbium	ppm	0,03	5,40	2,25
MET_GAM04_MS	Ba	Barium	ppm	10	>10000	7870,00
GOI04_ICP	Ba	Barium	%	0,01	2,26	2,24
MET_LEC0_S04	S_TOT	Total Sulfur	%	0,01	2,43	1,70
MET_LEC0_S04	C_TOT	Total Carbon	%	0,01	4,17	0,26
XRFFWR	Al2O3	Aluminium Oxide	%	0,01	7,83	9,81
XRFFWR	BaO	Barium Oxide	%	0,01	2,55	0,93
XRFFWR	CaO	Calcium Oxide	%	0,01	22,10	12,67
XRFFWR	Cr2O3	Chromium (III) Oxide	%	0,01	0,21	2,47
XRFFWR	Fe2O3	Iron (III) Oxide	%	0,01	5,70	8,68
XRFFWR	K2O	Potassium Oxide	%	0,01	2,36	2,06
XRFFWR	MgO	Magnesium Oxide	%	0,01	2,67	7,92
XRFFWR	MnO	Manganese Oxide	%	0,01	0,13	0,32
XRFFWR	Na2O	Sodium Oxide	%	0,01	1,31	1,64
XRFFWR	P2O5	Phosphorus Pentoxide	%	0,01	1,06	0,04
XRFFWR	SiO2	Silicon Dioxide	%	0,01	33,77	47,63
XRFFWR	SO3	Sulphur Trioxide (after LOI)	%	0,01	4,27	0,46
XRFFWR	SrO	Strontium Oxide	%	0,01	1,57	0,69
XRFFWR	TiO2	Titanium Dioxide	%	0,01	0,26	0,87
XRFFWR	LOI	LOI @ 1000 DegC	%	0,01	12,61	2,82
XRFFWR	Sum	Sum of Major Oxides + LOI	%	0,01	98,37	98,98