COPPERSTONE RESOURCES AB

MEMO REPORT

RESOURCE STATEMENT

FOR THE

GRANLIDEN/SVARTLIDEN

COPPER DEPOSITS

NORRBOTTEN

SWEDEN

Effective Date: 20th December 2018

Prepared By

Micon International Co Limited Suite 10 Keswick Hall, Norwich, NR4 6TJ, United Kingdom

20th December 2018



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1.0 MICON MEMO REPORT

1.1 INTRODUCTION

At the request of Copperstone Resources AB ("Copperstone" or the "Client"), Dr R Bernau MAusIMM(CP) of Micon International Co Ltd visited the Copperstone project from the 29th October to the 1st November 2018 and reviewed the geology, mineralisation, visited the sample preparation laboratory, in addition to inspecting several drill hole collars.

The Granliden/Svartliden copper deposits are located near Arvidsjaur in Norrbotten County, Sweden. Figure 1.1 illustrates the location of the Copperstone Project.



Figure 1.1: Location of the Copperstone Licence Boundaries

The objective of the work was to prepare a PERC Compliant Mineral Resource Statement for the Granliden/Svartliden copper deposits that incorporates the results of the latest drilling and geological interpretation. The Client deliverables include updated wireframes, selected pit shells to define the base of the resource, a PERC Compliant Mineral Resource Statement for the Granliden/Svartliden copper deposits and an accompanying summary report in the form of PERC Table 1.

Micon understands that at the time of reporting Copperstone Resources AB do not hold the permits for the Mineral Resources reported in this statement. However, under the PERC code (2017), resources maybe reported as long as the 'security of the tenure held at the time of reporting or which is **reasonably expected to be granted in the future** along with any known impediments to obtaining the right to operate in the area' (page 62 of PERC code). Micon considers Copperstone to meet this requirement based on the following information:

- Copperstone owns the following exploitation concessions: Svartliden k No.1 (36 ha) valid until December 2025 and Eva k No. 1 (34 ha) valid until November 2042. Copperstone also owns the following exploration permits: Sandberget 200 (19 ha) and Sandberget 300 (19 ha) both valid until October 2022. On 28th September 2018, Copperstone applied for two new exploration permits: Sandberget 400 (535 ha) which forms a roughly 1 km buffer zone around the recently awarded Eva k No.1 exploitation concession, and Sandberget 500 (7,641 ha) which contains all the above.
- Sandberget 500 application excludes a small nature reserve that is not affecting the area of exploration. The company has good relations with the local Sami Village (Mausjaur) and the local forestry company (Sveaskog) that is the major landowner of the area under exploration. In November 2018 the Inspector of Mines approved dispensation from 1 year prohibition for S400 and S500 and the two applications are currently being processed. It is reasonable to assume that Copperstone will receive the two applied exploration permits in early 2019.

Figure 1.2 illustrates the location of the Copperstone licence boundaries.









1.2 MINERAL RESOURCES

Micon modelled the mineralisation at Granliden and Svartliden using Surpac 6.9 software, based on the interpretation provided by the Copperstone geologists and using a 0.135% copper cut-off. The wireframes allowed up to 10 m of internal waste and all unsampled intervals were given a $\frac{1}{2}$ detection limits value of 0.0005 for all metals. Figure 1.3 shows a plan map of the drilling and wireframes.



Figure 1.3: Plan Map of Drilling and Wireframes

Figure 1.4 illustrates a cross-section through the Granliden Deposit





Figure 1.4: Cross-Section through the Granliden Deposit (Looking East)

An outlier analysis was conducted for each element interpolated (Cu, Ag, Au and Zn). Top-cuts of 3.69%, 102 g/t, 0.9 g/t and 5.85% were applied respectively. Samples were composite to 2 m lengths. In addition sulphur was estimated in order to calculate the density for each block.

Micon examined the variography of the deposits, but there was not enough data to create quality variograms for each domain. The global variography of all mineralised samples suggested a range of 65 m with a 20% nugget value. This supports the use of the Inverse Distance Weighted to Power 3 (IDW³) estimation technique. A multi-pass approach was applied with ranges of 65 m, 130 m, and 195 m for the estimation ellipsoid. The modelling parameters are outlined in Table 1.1.

Table 1.1: Modelling	Parameters
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Estimation Method	Run Number	l Pa 1 st Axis	Ellipsoid aramete 2 nd Axis	l rs 3 rd Axis	Number of Octants	Min Number of Composites per Ellipsoid	Max Number of Composites per Ellipsoid	Min Number of Drill Holes per Ellipsoid	Max Number of Drill Holes per Ellipsoid	Min Number of Composites per Drill Hole	Max Number of Composites per Drill Hole
	1	65	65	16.3	8	12	15	4	5	1	3
IDW ³	2	130	130	43.3	8	9	15	3	5	1	3
	3	195	195	97.5	8	3	15	1	5	1	3

The block model utilises 10 m by 10 m by 10 m blocks and was sub-blocked to 2.5 m by 2.5 m by 2.5 m blocks for accuracy on the volume of the mineralised material. However, the sub-blocks all have the same grade as the parent blocks (Table 1.2).

Parameter	Easting (m)	Northing (m)	Elevation (m)		
Origin	70,4000	7,247,000	-250		
Parent Block Size	10	10	10		
Sub-Block-Size	2.5	2.5	2.5		

Table 1.	2: Block	Model	Origins
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The relationship between iron, sulphur and density were examined and sulphur was found to provide the most accurate regression line with an R^2 value of 91%. For waste rocks a value of 2.7 t/m³ was used.

$$SG = (Sulphur x 0.0339) + 2.7227$$

At Granliden the average density from the Svartliden mineralisation of 2.97 t/m^3 was used due to lower than expected results in this area.

The model is all classified as Inferred based on the continuity of the mineralisation and the drill spacing. Any blocks within wireframes that did not meet the criteria needed for estimation are not included in the resources.

Micon conducted a pit optimisation study using Whittle software. The optimisation parameters are presented in Table 1.3.

Туре	Parameter
Processing and G&A	US\$4/t
Mining Ore/Waste	US\$1.5/t
Copper Recovery	95%
Pit Slope	55°

 Table 1.3: Optimisation Parameters

Figure 1.5 shows the Copperstone resources with optimised pit shells.



Figure 1.5: Copperstone Resources within Optimised Pit Shells



Table 1.4 contains the Copperstone Inferred Resources.

In Pit Resources with 0.1% Copper Mining Cut-Off Applied	Tonnage (Mt)	SG (t/m ³)	Cu (%)	Ag (g/t)	Au (g/t)	Zn (%)	Cu Metal (kt)	Ag Metal (koz)	Au Metal (koz)	Zn Metal (kt)
Granliden Inferred Resource	16.92	3.0	0.44	3.65	0.07	-	74.9	2,000	36.4	-
Svartliden Inferred Resource	9.43	3.0	0.42	9.76	0.12	0.34	39.1	3,000	35.2	32.4
Total Inferred Resources	26.35	3.0	0.43	5.90	0.08	0.12	114.0	5,000	71.60	32.4

Table 1.4: Copperstone Inferred Resources

Notes:

1. There are reasonable prospects for eventual economic extraction under assumptions of a copper price of US6,200/t; with employment of conventional open-pit mining methods, and processing costs (including G & A) of US4/tonne. Mining costs are assumed at US1.5/t ore/waste.

2. Optimised pit shell includes a 5% allowance for hangingwall and footwall contact boundary loss and dilution as well as a mining recovery of 95%. A processing metal recovery of 95% is also assumed and pit slopes are set to 55° with a strip ratio of 4.71. These have not been applied to the reported mineral resources.

3. All resources are compliant with the PERC Code (2017).

4. Mineral resources are reported inclusive of mineral reserves.

5. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade and contained metal content.



2.0 EXPLORATION TARGET POTENTIAL

Micon considered the exploration target potential for Granliden. A wireframe model inclusive of the Inferred Resources was constructed with a tonnage of 235 Mt. Micon considers the exploration target potential for the Copperstone Project to be in the range of 150 Mt to 210 Mt in the areas with existing drilling, in addition to the Inferred Resource. This material is likely to range in grade from 0.25% copper to 0.45% copper. These estimated numbers represent exploration targets and the potential quantity and grade is conceptual in nature and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Figure 2.1 presents an isometric view of the exploration target potential wireframes.



Figure 2.1: Isometric View of Exploration Target Potential Wireframes



3.0 **RECOMMENDATIONS**

- 1 Micon recommends twinning selected drill holes for verification purposes at Granliden and Svartliden.
- 2 Micon recommends limiting the 2019 drilling to a maximum depth of 350 m in order to target material with potential for extraction by open pit mining methods.
- 3 Micon recommends assaying unsampled intervals that fall within the current wireframes.
- 4 Micon recommends infill drilling at Granliden East.
- 5 New drilling targets must also be identified to expand the resources at Granliden.



4.0 DATE AND SIGNATURE PAGE

As author of this report entitled "Memo Report Resource Statement for the Granliden/Svartliden Copper Deposits, Norrbotten County, Sweden", dated 20th December 2018 ("Memo Report"), I, Robin James Bernau, do hereby certify that:

- 1. I am employed as a Senior Geologist by, and carried out this assignment for, Micon International Co Limited, Suite 10, Keswick Hall, Norwich, United Kingdom. tel. 0044(1603) 501 501, e-mail <u>rbernau@micon-international.co.uk</u>;
- 2. I hold the following academic qualification:

M.Geol. Applied GeologyUniversity of Leicester, United Kingdom, 2003;University of Southampton, United Kingdom, 2007;

- 3. I am a member of the Australasian Institute of Mining and Metallurgy (AusIMM) and a Chartered Professional (CP), Membership No. 314651.
- 4. I have worked as a geologist in the minerals industry for 14 years in the mining industry in Africa, Europe and United Kingdom;
- 5. I do, by reason of education, experience and professional registration, fulfil the requirements of a Qualified Person as defined by the PERC Code (2017);
- 6. I visited the property that is the subject of this Technical Report from 29^{th} October to the 1^{st} November 2018;
- 7. I am responsible for the preparation of this Memo Report;
- 8. I am independent of Copperstone Resources AB, their directors, senior management, and other advisers, I have had no previous involvement with the property;
- 9. I have read the PERC Code (2017) and this report for which I am responsible have been prepared in compliance with the instrument;
- 10. As of the date of this certificate to the best of my knowledge, information and belief, this Memo Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 20th day of December 2018

Dr Robin J Bernau, M.Geol., Ph.D., AUSIMM(CP), (#314651) Senior Geologist, Micon International Co Limited





5.0 APPENDIX 1 – LIST OF DRILL HOLES INCLUDED IN ESTIMATE

Hole ID	Easting	Northing	Elevation	Azimuth	Dip	Max Depth	Company	Project	Mineralisation Depths (m)
BH1	706,407	7,248,309	425	142	-50	67.9	Boliden	Svartliden Project	44 - 62.34;
BH3 DU4	706,280	7,248,294	424	223	-50	139.1	Boliden	Svartliden Project	79 - 111.5; 132.55 - 139.07;
BH5	706,204	7,248,100	424	222	-50	109.1	Boliden	Svartliden Project	24 2 - 54 4· 82 4 - 105 8·
BH7	706,167	7,248,226	429	38	-46	84.2	Boliden	Svartliden Project	40.35 - 84.15;
BH8	706,244	7,248,193	424	69	-50	115.0	Boliden	Svartliden Project	99.02 - 105.72;
BH9	705,922	7,248,369	444	96	-50	98.8	Boliden	Svartliden Project	63.05 - 70.26;
BH11	706,444	7,248,329	426	140	-45	82.9	Boliden	Svartliden Project	10.5 - 50.84; 67.61 - 82.86;
BH12 DU12	706,496	7,248,357	420	140	-46	60.5	Boliden	Svartliden Project	6.4 - 21.06;
BH15 BH14	706,333	7 248,374	416	159	-50	127.9	Boliden	Svartliden Project	15.7 - 22.12;
BH15	706,250	7,248,157	424	86	-50	76.1	Boliden	Svartliden Project	35.04 - 76.13:
BH16	706,197	7,248,237	429	49	-50	66.6	Boliden	Svartliden Project	24.33 - 66.56;
BH17	706,233	7,248,213	426	33	-45	70.9	Boliden	Svartliden Project	32.5 - 42.74; 59.27 - 70.91;
BH18	706,101	7,248,272	435	39	-50	118.6	Boliden	Svartliden Project	96.15 - 103.4;
BH19	706,124	7,248,164	430	34	-50	201.4	Boliden	Svartliden Project	66.75 - 79.5;
BH25	706,200	7,248,152	426	28	-58	174.7	Boliden	Svartliden Project	45.85 - 56.25; 133.21 - 153.2;
BH26	706,418	7,248,359	423	134	-48	199.8	Boliden	Svartliden Project	55.6 - 52.1; 60.1 - 67.5; 89.06 - 117.9; 182 - 199.8;
BH28 BH29	705,259 705,258	7,249,401 7,249,431	435 435	156 154	-50 -57	145.3 197.2	Boliden Boliden	Central Project Central Project	53.08 - 66.59; 94.1 - 110.25; 107.68 - 113.68; 128.82 - 197.17;
BH30	705,230	7,249,377	436	147	-61	126.1	Boliden	Central Project	58.14 - 126.1;
BH31	705,294	7,249,422	434	142	-50	103.0	Boliden	Central Project	52.7 - 62.4;
BH47	705,441	7,250,126	484	177	-50	103.1	Boliden	Granliden Hill	19.2 - 45.35;
BH52	705,206	7,249,361	436	147	-49	103.0	Boliden	Central Project	60.65 - 71.05;
BH55 BH56	705,190	7,249,359	430	1//	-40	101.5	Boliden	Central Project	/5.7 - 101.5;
BH63	705,283	7,249,455	504	182	-50	80.0	Boliden	Granliden Hill	38.8 - 49.05:
BH64	705,375	7,250,294	488	178	-50	100.0	Boliden	Granliden Hill	12.65 - 30.35; 48 - 100;
BH65	705,534	7,250,319	472	174	-46	80.5	Boliden	Granliden Hill	20 - 80.5;
BH77	705,946	7,248,723	423	180	-50	81.2	Boliden	Central Project	45.85 - 81.2;
BH78	705,984	7,248,784	418	180	-50	158.7	Boliden	Central Project	45.75 - 51.05;
BH81 DU95	705,335	7,250,303	491	178	-50	101.9	Boliden	Granliden Hill	55.85 - 61.9;
BH86	705,393	7,250,289	480	165	-43	93.3	Boliden	Granliden Hill	52.2 - 19.3;
BH87	705,435	7,250,306	482	182	-50	105.0	Boliden	Granliden Hill	11.65 - 75.15:
BH88	705,336	7,250,273	492	178	-50	106.6	Boliden	Granliden Hill	31.4 - 51.5; 82.9 - 106.6;
BH89	705,381	7,250,104	487	178	-47	97.9	Boliden	Granliden Hill	28 - 71.5;
BH91	705,474	7,250,317	477	177	-44	100.1	Boliden	Granliden Hill	10 - 68; 86 - 94;
BH92	705,374	7,250,324	488	183	-46	202.7	Boliden	Granliden Hill	14 - 19; 45.7 - 120.95; 185.3 - 202.7;
BH93	705,296	7,250,261	497	176	-45	109.9	Boliden	Granliden Hill	22 - 72;
BH97	705,355	7,250,303	490	182	-58	180.8	Boliden	Granliden Hill	19.3 - 46.55; 63.75 - 88.6;
BH101 DU102	705,219	7,250,169	502	178	-43	121.9	Boliden	Granliden Hill	26 - 121.9;
BH102 BH104	705,098	7,250,215	506	185	-44	81.1	Boliden	Granliden Hill	40 - 00;
COS04201	705,253	7,250,062	488	358	-50	101.0	Lundin	Granliden Hill	12.3 - 44.2: 81.95 - 101.01:
COS04202	705,543	7,250,370	471	159	-27	142.7	Lundin	Granliden Hill	45.05 - 142.7;
COS04203	705,340	7,250,503	504	179	-49	150.0	Lundin	Granliden Hill	20.1 - 74.22;
COS04205	705,856	7,249,804	446	179	-55	131.6	Lundin	Granliden Hill	23.9 - 33.4; 115.4 - 121.8;
COS04206	706,100	7,248,384	433	180	-53	121.8	Lundin	Svartliden Project	84.85 - 121.8;
COS04207	706,310	7,248,038	420	0	-52	269.7	Lundin	Svartliden Project	140.1 - 153.1; 220.55 - 243.5;
COS04208	706 608	7.248 072	413	178	-53	181.8	Lundin	Svartliden Project	33.1 - 80.
COS04209	706,604	7,247,793	404	359	-55	110.3	Lundin	Eva Project	16.7 - 32.5;
COS05212	706,606	7,248,136	431	180	-52	131.5	Lundin	Svartliden Project	9.1 - 39.85; 77.3 - 85;
COS05214	706,530	7,247,719	400	359	-50	109.9	Lundin	Eva Project	18.2 - 41.75;
COS05215	705,254	7,250,037	486	359	-55	80.3	Lundin	Granliden Hill	18.65 - 62.6;
COS05216	705,255	7,250,012	483	359	-55	65.4	Lundin	Granliden Hill	13.65 - 34.55; 41.4 - 49.2;
COS05217	705,252	7,250,087	494	1	-39	82.5	Lundin	Granliden Hill	7.6 - 48; 65.25 - 82.5; 20.4 - 46.4: 77.2 - 100.8:
COS05218 COS05219	705,342	7 250 057	4/4	104	-52	62.4	Lundin	Granliden Hill	7 3 - 62 4·
COS05219	705.204	7,250.054	480	359	-55	59.2	Lundin	Granliden Hill	27.6 - 59.2:
COS05221	705,493	7,250,369	479	198	-44	76.8	Lundin	Granliden Hill	14.6 - 76.8;
COS05222	706,529	7,247,612	396	359	-50	107.0	Lundin	Eva Project	30.8 - 107;
COS05223	706,526	7,247,551	384	4	-51	152.2	Lundin	Eva Project	38.82 - 52.05; 102.85 - 111.3;
COS05224	706,527	7,247,502	380	359	-50	190.6	Lundin	Eva Project	60.46 - 69.95;
COS05225	706,532	7,247,670	396	359	-50	140.0	Lundin	Eva Project	21.25 - 47.95;
COS05226	706,533	7.247,222	3/4	359	-90	541.6 101.0	Lundin	Eva Project	207 - 212.1;
COS05228	706,529	7 247 401	379	355	-51	203.0	Lundin	Eva Project	02.17 - 110.07; 85.7 - 111.65:
COS05230	706 581	7,247,401	370	360	-39	137.1	Lundin	Eva Project	87 74 - 117 9
COS05234	706,583	7,247,351	377	358	-75	133.4	Lundin	Eva Project	95.6 - 108.3:
COS05235	706,629	7,247,403	377	2	-74	203.2	Lundin	Eva Project	125.55 - 147.35;
COS05239	706,630	7,247,353	377	4	-73	215.1	Lundin	Eva Project	153.65 - 215.1;
COS05240	706,480	7,247,448	379	342	-68	125.2	Lundin	Eva Project	70.75 - 92.73;



Appendix 1. List of Drill Holes included in Estimate (continued)

Hole ID	Easting	Northing	Elevation	Azimuth	Dip	Max Depth	Company	Project	Mineralisation Depths (m)
COS05243	706,680	7,247,305	377	355	-75	239.7	Lundin	Eva Project	140.6 - 146.25; 163.63 - 175.9; 195.9 - 239.7;
COS05246	706,576	7,247,673	396	359	-75	82.6	Lundin	Eva Project	15.2 - 34.95;
COS05248	706,477	7,247,499	380	354	-74	116.1	Lundin	Eva Project	73.17 - 103.15;
COS05249	706,576	7,247,551	386	353	-75	92.9	Lundin	Eva Project	60.3 - 65.9;
COS05250	706,476	7,247,549	382	350	-75	116.7	Lundin	Eva Project	56.45 - 116.7;
COS05252	706,473	7,247,609	387	359	-75	121.8	Lundin	Eva Project	16.2 - 67.25;
COS05253	706,580	7,247,449	379	2	-72	125.9	Lundin	Eva Project	85.85 - 98;
COS05254	706,471	7,247,658	390	341	-69	83.1	Lundin	Eva Project	12.1 - 17.18; 31.35 - 37.7;
COS05255	706,426	7,247,521	382	357	-71	110.3	Lundin	Eva Project	23.88 - 41.85; 62.15 - 87.9;
COS05256	706,423	7,247,569	388	359	-75	72.8	Lundin	Eva Project	23.8 - 57.1;
COS05259	706,576	7,247,697	397	359	-75	68.8	Lundin	Eva Project	20 - 68.8;
COS05261	706,570	7,247,710	397	354	-75	80.2	Lundin	Eva Project	15.7 - 34.1;
COS05267	706,624	7,247,725	400	359	-/5	59.8	Lundin	Eva Project	24.1 - 29.13;
COS05271	706,605	7,248,100	435	255	-57	154.7	Lundin	Svartliden Project	58.9 - 77.5;
COS05277	706,007	7,248,100	410	355	-//	72.7	Lundin	Svartliden Project	18.7 - 25.0;
COS05278	705,404	7,248,210	421	183	-/4	107.2	Lundin	Central Project	32 55 - 41 7
COS05280	706,407	7,248,111	420	353	-74	226.1	Lundin	Svartliden Project	73.9 - 89.7; 120.7 - 126; 146.2 -
COS05283	706,410	7,248,011	417	16	-72	299.3	Lundin	Svartliden Project	69.55 - 117.8; 150.05 - 165.2; 201.5 - 225.55
COS05284	706 200	7 248 277	416	170	80	249.9	Lundin	Suartlidan Project	201.5 - 255.55;
COS05284	706,399	7,248,377	410	351	-80	240.0	Lundin	Svartliden Project	101 5 202 23:
COS05285	706,413	7 247 710	397	359	-74	237.1	Lundin	Svartliden Project	191.3 - 202.23,
COS05289	706,511	7 247 979	416	356	-53	238.2	Lundin	Svartliden Project	28 - 74 75: 162 95 - 222 7:
COS06302	706,461	7.247.308	376	45	-75	118.6	Lundin	Eva Project	57.9 - 63.65:
COS06311	706,199	7.248.404	428	179	-63	250.3	Lundin	Svartliden Project	110.35 - 119.9:
COS06314	706,153	7.247.933	415	359	-58	219.8	Lundin	Svartliden Project	27.4 - 36.6:
COS06316	706,506	7,248,123	418	358	-58	221.4	Lundin	Svartliden Project	24.1 - 48.15; 83.8 - 151.9;
COS06318	706,480	7,248,168	420	358	-48	142.6	Lundin	Svartliden Project	94 - 107.65;
COS06321	706,055	7,250,247	420	175	-75	461.6	Lundin	Granliden Hill	439.6 - 461.6;
COS06330	705,261	7,250,073	490	226	-59	251.2	Lundin	Granliden Hill	42.8 - 49.6; 90.1 - 102.45;
COS06331	706,055	7,249,897	426	264	-70	370.1	Lundin	Granliden Hill	258.3 - 267.7; 290.6 - 370.1;
COS07334	706,054	7,250,446	418	229	-65	456.9	Lundin	Granliden Hill	390 - 395.1;
COS07335	705,519	7,251,154	429	180	-65	205.0	Lundin	Granliden Hill	21.4 - 31.25;
COS07336	705,717	7,251,282	421	185	-65	391.5	Lundin	Granliden Hill	193 - 223; 295 - 309; 329 - 335; 351 - 373;
COS07339	706,410	7,248,011	417	91	-55	226.9	Lundin	Svartliden Project	64.9 - 70.45; 122 - 133; 151 - 161; 165 - 177.9;
COS15340	705,402	7,250,260	488	316	-50	165.1	Copperstone	Granliden Hill	18 - 31; 53 - 78; 121 - 162;
COS15341	705,447	7,250,283	483	307	-50	154.0	Copperstone	Granliden Hill	10 - 39;
COS15342	705,353	7,250,241	492	312	-48	150.0	Copperstone	Granliden Hill	32 - 83;
COS15343	705,292	7,249,337	436	291	-50	150.0	Copperstone	Central Project	13 - 33; 57 - 68;
COS15344	705,349	7,249,367	435	288	-50	152.0	Copperstone	Central Project	71 - 79;
COS15345	705,337	7,249,318	438	291	-60	182.5	Copperstone	Central Project	62 - 100;
COS15340	706.275	7,249,281	437	292	-50	151.1	Copperstone	Supertiidan Project	59 - 65; 72 - 78 0:
COS15347	706,275	7,248,191	425	20	-50	135.5	Coppersione	Svartliden Project	24 59 1:
COS15348	706,270	7,248,190	423	118	-30	150.0	Coppersione	Svartliden Project	24 - 35.1,
COS16350	706,350	7,248,000	414	113	-45	211.3	Copperstone	Svartliden Project	43 - 50: 82 1 - 114 2:
COS16351	706,401	7 248 116	421	112	-45	180.7	Copperstone	Svartliden Project	33 - 45 1: 110 55 - 122:
COS16352	706 345	7 248 136	422	112	-45	299.5	Copperstone	Svartliden Project	169 - 213: 238 5 - 245:
COS17353	706,604	7,247,813	405	20	-70	1166.0	Copperstone	Eva Project	768 - 782: 794 - 801:
COS17355	706,626	7.247.817	406	200	-85	864.0	Copperstone	Eva Project	13 - 19:
COS18358	705,293	7,249,687	435	-	-55	843.0	Copperstone	Granliden Hill	674 - 687.5;
COS18359	705,847	7,250,062	446	270	-55	878.0	Copperstone	Granliden Hill	65 - 85; 559 - 583; 744 - 826;
COS18360	706,115	7,250,050	424	270	-60	802.7	Copperstone	Granliden Hill	376 - 425; 465 - 483; 547 - 556.25; 579 - 595;
COS18361	705,613	7,250,077	464	270	-55	785.7	Copperstone	Granliden Hill	20.15 - 42; 124 - 130; 222 - 274 5: 462 - 484: 763 - 775:
COS18362	705,785	7,249,867	450	90	-70	803.5	Copperstone	Granliden Hill	57.3 - 70.55; 105.6 - 125; 289 - 341: 394 - 402: 505.2 - 525:
COS18363	706 004	7 249 858	434	270	-70	768.1	Connerstone	Granliden Hill	<u> </u>
COS18364	706.011	7,250.262	423	270	-60	663.8	Copperstone	Granliden Hill	315 - 354; 382 - 418:
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6.0 APPENDIX 2 - PERC CODE TABLE 1

PERC Code, 2017 Edition – Table 1 Part 1 – General

Assessment Criteria	Explanation	Commentary
Purpose of Report	 (i) The report should include a title page and Table of Contents, including figures and tables. (ii)State for whom the report was prepared, whether it was intended as a full or partial evaluation or other purpose, what work was conducted, effective date of report, and what work remains to be done. (iii)The Competent Person should state whether the document is PERC compliant. If a reporting standard or code, other than PERC has been used, The Competent Person should include an explanation of the difference 	 This Memo Report includes a title page and Table of Contents and includes figures and tables. This report was completed for Copperstone Resources AB. The effective date of this report is 20th December 2018. This report is PERC compliant.
Project Outline	 Brief description of scope of project (i.e. whether in preliminary sampling, advanced exploration, conceptual, pre-feasibility, or feasibility phase, Life of Mine plan for an ongoing mining operation or closure). This should include a description of the geological setting, deposit type, commodity, project area, background, and business arrangement. Brief description of key technical factors that have been considered. Brief description of mining, processing and other key technical factors. 	• The objective of the work was to prepare a PERC Compliant Mineral Resource Statement for the Granliden/Svartliden copper deposits that incorporates the results of the latest drilling and geological interpretation.
History	 (i) State historical background to the project and/or adjacent areas concerned, including known results of previous exploration and/or mining activities (type, quantity and development work), prior ownership and changes thereto. (ii) Reference all information used from other sources. (i) Discuss known or existing historical Mineral Resource estimates and reconciliations of reported resources/ reserves and actual production for past and current operations, including the reliability of these and how they relate to the PERC Standard. (ii) Previous successes or failures should be referred to transparently with reasons why the project should now be considered potentially economic. (i) Discuss known or existing historical Mineral Reserve estimates and performance statistics to actual production for past and current operations, including the reliability of these and how they relate to the PERC Standard. 	 The Granliden/Svartliden project is only at the exploration stage. Drilling on the property commenced in 1952 by Boliden Mining AB. Records show that only a single drill hole was placed adjacent to two very old surface trenches. There is no information for these two trenches. One trench did not reach sub-outcrop below the till. From 1971 until 1978, Boliden Mining AB then drilled a total of 109 AQ cored drill holes across the property (approximately 12,168m). Drill holes were concentrated on Svartliden k No.1 (called "Svartliden" by Copperstone), Sandberget 200 (called "Granliden South" by Copperstone) and Sandberget 300 (called "Granliden Hill" by Copperstone). A total of 53 of these Boliden drill holes have been re-logged and sampled by Copperstone. From 1998 North Atlantic Natural Resources (NANR) was established as a listed JV Company between Lundin Mining AB and Boliden Mining AB. From 1998 until 2004 NANR carried out significant airborne and ground geophysics. From 2004 until 2007 NANR drilled a further 138 drill holes (21,717 m) from 2004 until 2007. Much of this drilling was positioned on shallow magnetic anomalies and also led to the discovery of the Eva massive sulphide occurrence south of Svartliden k No.1.



Assessment Criteria	Explanation	Commentary
		 Since Oct 2015 until present Copperstone has drilled a total of 26 drill holes (12,469 m). In 2015, a total of 9 inclined drill holes (1,400 m) to a maximum drilled length of 150 m were completed on Sandberget 200, 300 and Svartliden k No.1. In 2016 a further 4 drill holes (840 m) were completed on Svartliden k No.1 (fence line F1). In 2017 a fan of three (3) deep drill holes (total 2,611 m) were drilled between Svartliden and Eva mineralisation in order to probe for a causative intrusive. In 2018 Copperstone completed 10 deep drill holes (7,615 m) around the Granliden area to test magnetic and conductive geophysical anomalies and to start creating a broad grid to define the lateral extent of chalcopyrite mineralisation.
Key Plan, Maps and Diagrams	 (i) Include and reference a location or index map and more detailed maps showing all important features described in the text, including all relevant cadastral and other infrastructure features. If adjacent or nearby properties have an important bearing to the report, then their location and common mineralised structures should be included on the maps. Reference all information used from other sources. All maps, plans and sections noted in this checklist, should be legible, and include a legend, coordinates, coordinate system,, scale bar and north arrow. (ii) Diagrams or illustrations should be legible, annotated and explained where necessary 	• Plans, maps and diagrams have been included in this Memo Report.
Project Location and Description	 (i) Description of location (country, province, and closest town/city, coordinate systems and ranges, etc.). (ii) In respect of each property, diagrams, maps and plans should be supplied demonstrating the location of prospecting/mining rights, any historical and current workings, any exploration, and all principal geological features 	 The Granliden/Svartliden copper deposits are located near Arvidsjaur in Norrbotten County, Sweden. The project is only at the exploration stage.
Topography and Climate	 (i) All relevant issues relating to the mineral project, such as the topography and climate, noting any conditions that may affect possible mining activities should be stated. (ii) A general topo-cadastral map should be available to support the above statement. 	 The topography is relatively flat and boggy morphology. The elevation in the property area varies between 425 m and 510 m above sea level. Arvidsjaur has a subarctic climate which borders on a continental climate with short, mild to warm summers and long, cold, snowy winters.
	(i) Topo-cadastral map in sufficient detail to support the assessment of eventual economics. Known associated climatic risks should be stated.	
	(i) Detailed topo-cadastral map. Where applicable aerial surveys should be checked with ground controls and surveys, particularly in areas of rugged terrain, dense vegetation and/or high altitude.	



Assessment Criteria	Explanation	С	ommentary
Assessment Criteria Geology	Explanation Description of the nature, detail, and reliability of geological information (rock types, structure, alteration, mineralisation, and relation to known mineralised zones, etc.). Description of geophysical and geochemical data. Reliable geological maps and cross sections should exist to support interpretations.	• • • • •	 Dimentary The Copperstone exploration project is situated to the north of the famous mining district of the Skellefte-field and within the Norrbotten province of northern Sweden. Regional geology consists of deformed and metamorphosed palaeo-Proterozoic felsic to mafic volcanics, subordinate volcanoclastic sediments of the Skellefteå Group intruded by a wide range of granitic intrusives related to the 1.8 Ga to 1.7 Ga Sveccofenian orogenic event. On a district scale the property is bound to the east by the zoned Jörn batholith, to the south by the Gallejaur granite-gabbro complex and to the north by sub-aerial volcanics of the Arvidsjaur Group. The dominant structural trend in the region is a broadly defined WNW-ESE trending brittle s-c shear fabric. The property geology consists of southwest dipping (10° to 40°) stratigraphy ranging from lower siliceous pyroclastics (vitric tuff), overlain by 1 m to 10 m thick stacked turbidite flows with discontinuous lacustrinal mudstones and siltstones, and capped by amygdaloidal andesitic lava flows. Southwards the lava flows are overlain by crystal and vitric pyroclastic tuff units. These units are thought to represent intra-caldera deposits. The meta-volcanic sequence is highly altered on a broad scale with distinct sericite alteration (phyllic) and chlorite-epidote-carbonate alteration zones (propylitic). The cause for this alteration is not understood yet. Most copper mineralisation is associated with the more altered geology. Geophysical mapping of conductor zones has identified a general boundary between the two alteration styles, often demarcated by a local abundance of pyrrhotite. Property intrusives include a host of pre-, syn- and post-alteration mafic sills /dykes, and a less altered equigranular to weakly porphyritic calc-alkaline, magnetite-bearing granitoid stock. This stock is spatially related to the Granilden mineralisation and forms an obvious magnetic body. The body
Minorology	Describe the minoral on of the description to "	_	be formed due to hydrothermal processes within the most intense zones of phyllic alteration.
winieralogy	the distribution, quantity and other characteristics of the important minerals. Includes minor and gangue minerals where these will have an effect on the processing steps.	•	range from thick lode-style bodies of massive pyrite to discontinuous veins, veinlets of quartz- chalcopyrite (sub mm to rarely >300 mm). The former is interpreted to be of meteoric origins and



Assessment Criteria	Explanation	Commentary
	Should indicate the variability of each important mineral within the deposit.	 early stage, often crosscut by younger unmineralised mafic dykes. The latter is generally broad stockwork zones of steep veining probably of magmatic origin, of varying orientations and little to no pyrite present. Arsenopyrite is ubiquitous and generally related to elevated gold mineralisation. Localised spots of bornite have also been found. Pathfinder elements to copper mineralisation are generally arsenic, antimony, cobalt, indium, tin, selenium and tellurium. Copper mineralisation is the primary metal of interest at Granliden and copper-zinc mineralisation at Svartliden. Besides the recently discovered granite stock at Granliden, other magnetic anomalies that trend roughly north-south across the property represent the pyrrhotite boundary common between phyllic and propylitic styles of alteration. At present Copperstone believes that the mineralisation style is of hydrothermal origins and related to emplacement of felsic stocks along regionally important structural discontinuities. At this stage the company has referred to this type as "porphyry-style". Significant work is still required to prove the style an origin of mineralisation.
Mineral rights and land ownership	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, historical sites, wilderness or national park and environmental settings. In particular the security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. Location plans of mineral rights and titles. It is not expected that the description of mineral title in a technical report should be a legal opinion, but should be a brief and clear description of such title as understood by the author.	 At the time of reporting Copperstone Resources AB owns the following exploitation concessions: Svartliden k No.1 (36 ha) valid until December 2025 and Eva k No. 1 (34 ha) valid until November 2042. The Company also owns the following exploration permits: Sandberget 200 (19 ha) and Sandberget 300 (19 ha) both valid until October 2022. On 28th September 2018 the Company applied for two new exploration permits: Sandberget 400 (535 ha) which forms a roughly 1 km buffer zone around the recently awarded Eva k No.1 exploitation concession, and Sandberget 500 (7,641 ha) which contains all the above. Sandberget 500 application excludes a small nature reserve that is not affecting the area of exploration. The company has good relations with the local Sami Village (Mausjaur) and the local forestry company (Sveaskog) that is the major landowner of the area under exploration. In November 2018 the Inspector of Mines approved dispensation from 1 year prohibition for S400 and S500 and the two applications are currently being processed. It is reasonable to assume that Copperstone will receive the two applied exploration permits in early 2019. All existing concessions, permits and applications will form a contiguous block.

Granliden/Svartliden Copper Project

Assessment Criteria	Explanation	Commentary
Legal Aspects and Tenure	The legal tenure should be verified to the satisfaction of the Competent Person, including a description of: (i) The nature of the issuer's rights (e.g. prospecting and/or mining) and the right to use the surface of the properties to which these rights relate; (ii) The principal terms and conditions of all existing agreements, and details of those still to be obtained, (such as, but not limited to, concessions, partnerships, joint ventures, access rights, leases, historical and cultural sites, wilderness or national park and environmental settings, royalties, consents, permission, permits or authorizations; (iii) The security of the tenure held at the time of reporting or which is reasonably expected to be granted in the future along with any known impediments to obtaining the right to operate in the area; and, (iv) A statement of any legal proceedings that may have an influence on the rights to prospect for minerals, or an appropriate negative statement.	 Micon understands that at the time of reporting Copperstone Resources AB do not hold the permits for the Mineral Resources reported in this statement. However, under the PERC code (2017), resources maybe reported as long as the 'security of the tenure held at the time of reporting or which is reasonably expected to be granted in the future along with any known impediments to obtaining the right to operate in the area. Micon considers Copperstone to meet this requirement. Micon has not undertaken any legal due diligence of the asset portfolio associated with the Granliden / Svartliden copper project and does not present any legal opinion regarding the corresponding ownership or title. See also 'Mineral rights and land ownership'.
Licences and Permits	The status of titles and approvals critical to the economic viability of the project, such as mining leases, development permits, discharge permits and governmental approval. Description of the environment and of anticipated liabilities. Location plans for mineral rights and titles.	 At the time of reporting Copperstone Resources AB owns the following exploitation concessions: Svartliden k No.1 (36 ha) valid until December 2025; and, Eva k No. 1 (34 ha) valid until November 2042. The Company also owns the following exploration permits: Sandberget 200 (19 ha); and, Sandberget 300 (19 ha) Both valid until October 2022.
Personal introduction into projects and verification of the data	 (i) Date of visit(s) (i) Meetings with key persons responsible for the project which is being reported upon, defining their responsible fields and experience relevant to the project. (ii) Visit to project area resulting in a report itemising significant observations (iv) What parts of the project were available for personal verification. (v) List of data used or cited in preparation of the Public Report. 	 A site visit by Micon CP, Dr Bernau was undertaken on 31st October 2018.



PERC Code, 2017 Edition – Table 1 Part 2 - Sampling Techniques and Data

Assessment Criteria	Explanation	Commentary
Type(s) of sampling	The type of sampling and its location, which will give rise to the results being reported, should be stated. Types of sampling include stream sediment, soil and heavy mineral concentrate samples, trenching and pitting, rock chip and channel sampling, drilling, auger etc. Examples of locations include old workings, mine dumps etc. Wherever possible the spacing of such samples should be stated, and locations shown on coordinated maps, plans and sections at suitable scales.	 All samples for assay have been derived from solid drill core. There is no other form of sampling throughout the history of exploration on this property. Exploration has been carried out by Boliden Mining AB (1952-1978), Lundin Mining AB / North Atlantic Natural Resources AB (1998-2007) and Copperstone Resources AB, formerly Kopparberg Mineral AB (2012 to present). For Copperstone exploration activities, all core boxes were delivered by the Drill Contractor to a secure Copperstone Site Office 1km from the drill site. Before transport to Malå, preliminary inspection and basic logging is carried out by Copperstone personnel. Core was logged in detail at the Copperstone Facility in Malå before zones for sampling were selected. Once sampling zones were identified and ticketed core boxes are then collected for laboratory analysis. Logging included core recovery, RQD and magnetic susceptibility. Sampling was based on half-core samples, with sampling range taken well beyond the visual zones of mineralisation. Where historic drilling had limited sampling, extensive infill sampling has been carried out by Copperstone to ensure all zones of mineralisation have been fully sampled.
Drilling techniques	Drilling techniques may include core, reverse circulation, percussion, rotary auger, down-the- hole hammer, etc. These should be stated and details (e.g. core diameter) provided. Measures taken to maximise sample recovery and ensure representative nature of the samples should be stated.	 Inclined diamond core drilling of various core diameters ranging from Boliden (35.5 mm AQ2), NANR (40.7 mm BQ2) and Copperstone (50.6 mm NQ2). Select drill holes (64) from NANR and CS drill campaigns were probed (2013-2017) with a downhole Optical Televiewer system (OPTV) to generate planar structural data. Inhole magnetic susceptibility and Induced Polarisation data was also gathered at the same time
Drill sample recovery	Whether sample recoveries have been properly recorded and results assessed should be disclosed. In particular the report should state whether a relationship exists between sample recovery and grade or quality and sample bias (e.g. preferential loss/gain of fine/coarse material).	 Most drill core samples for the entire project are available and have been re-logged to check geology and historic sampling intervals. During logging core recovery was recorded. In general quality of drill core is high (>95% recovery) with insignificant core loss zones. All logging records have been captured electronically and entered into a relational database. There is no relationship between sample recovery and grade.



Assessment Criteria	Explanation	Commentary
Logging Other sampling techniques	Whether samples have been logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies should be confirmed, and whether logging is qualitative or quantitative in nature should be stated. Core (or trench, channel etc.) photography should be included. Nature and quality of sampling (e.g. cut channels, random chips etc.) and measures taken to ensure sample representativity should be stated. The precise location and unique numbering of each sample should be provided by reference to a coordinate system (which should be stated)	 All drill cores available have been geologically logged and summarised to form a coherent classification of all lithotypes encountered. 13 drill holes (2017-2018 drill campaigns) have been geotechnically logged to a record RQD values. Geological logging has been linked to sample geochemistry and plotted to check correct usage of lithotype terminology. All drill core boxes have been photographed. For all Boliden and NANR drill holes, Copperstone has all original detailed geological logs and related assay reports. Not applicable.
Sub-sampling techniques and sample preparation	be statea). For sampling from core, whether cut or sawn or whether quarter, half or all core has been taken in the course of sampling should be stated. If non-core, whether riffled, tube sampled, rotary split etc. and whether split wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique should be described, together with quality control procedures adopted for all sub- sampling stages to maximise representativity of samples. Measures taken to ensure that the sampling is representative of the in-situ material collected should be stated. Whether sample sizes are appropriate to the grain size of the material being sampled should be described. A statement as to the security measures taken to ensure	 Boliden (1971-1978) carried out sampling by hand splitting of drill core. NANR (2004-2007) and Copperstone Resources (2015-2018) used standard longitudinal diamond sawing. Boliden and NANR carried out sample preparation at their own facilities to industry standards at that time. All Copperstone sample preparation (sawing, drying, crushing 70% <2 mm, splitting and pulverizing 85% >75 µm) has been carried out at ALS Minerals Laboratories, an accredited laboratory based in Malå. QAQC samples have been inserted by NANR, CS and ALS (internal). QAQC includes duplicates and blanks by NANR, and duplicates, blanks and standards by CS inserted at regular intervals in the sample order. No QAQC samples were inserted by Boliden but check testing
Assay data and laboratory investigation	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total should be stated. Attention should also be given to how presented assay results express the assumed extractable content of the element. Sample preparation and assaying may be carried out by internal or independent laboratories. The laboratories actually used for this work should be identified in any report. In any case, there should be consideration given to the accreditation of the laboratory (e.g. ISO standards awarded such as ISO 9000:2001 and ISO 17025) and to the actual procedures used at all stages of sample preparation and analysis, including the use of randomisation, internal and	 with QAQC has been carried out by both NANR and CS on Boliden drill cores. Sample analysis by Copperstone: 4-acid digestion followed by ICP finish (ME-MS61) for 49 elements, including Ag, Cu and Zn. All samples with greater than 10,000 ppm (1%) Cu and / or Zn are re-run with 4-acid digestion and then ICP-AES finish (Cu-OG62 and Zn-OG62) with results reported in percentage. Gold values are determined with a 30 g fire assay fusion with AAS finish (Au-AA23). Sample analysis by NANR: ME-ICP61a for Au-AA23 for gold. For Zn >1% ZN-AA62 and Cu >1% Cu-AA05 Ag >500 ppm Ag-AA62 Au >10 ppm Au-GRA21. No XRF or other geophysical tools have been used to derive any assay values. Boliden: No QAQC samples submitted. NANR used blanks and duplicates on both re-assay of Boliden



Assessment Criteria	Explanation	Commentary
	external standard samples, and blanks, as well as monitoring procedures for systematic bias. In particular, it should be noted whether analyses of samples within the set used to support the resource estimate have been replicated independently in other laboratories. For assaying on large sample sets for mineral resource estimation, it is often appropriate to use 5 - 10 % of the samples for control purposes, depending on the circumstances. Report the	 drill cores and their own drill cores. Copperstone has used blanks, standards and duplicates (1:20) for all assay work. All QAQC records have been captured into the database and have been examined using appropriate graphing procedures. All results are deemed to be acceptable in both accuracy and precision.
Verification of results	methods of verification of assaying The verification of selected intersections by either independent or alternative personnel is recommended as is the use of twinned holes (a hole as near as possible to a pre-existing hole to make sure that it has the correct position and geological interpretation), deflections or duplicate samples.	 Copperstone has checked all significant intercepts of Boliden and NANR drill holes both through logging of actual core and cross-checking old assay certificates with database entries. There are no twinned drill holes. Copperstone has a general exploration protocol. Primary data (logging information, laboratory reports) is captured by an independent database manager into an Access database stored on a dedicated computer with a separate secure off-site back-un
Data location	A statement is required regarding the accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations. Quality and adequacy of topographic control should be described, and locality plans provided.	 All collars have been physically found in the forest and resurveyed by an Independent Contractor on behalf of CS (collar XYZ, azimuth and dip) in SWEREF 99TM. Survey was carried out using an RTK-GPS survey tool. Copperstone acquired a detailed DTM for the property.
Data density and distribution	Data density for reporting of Exploration Results should be described. A statement should be included as to whether the data density and distribution are sufficient to establish the degree of geological and grade or quality continuity appropriate for the Mineral Resource and Mineral Reserve estimation procedure and classifications applied, and whether sample compositing has been applied. Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the denosit type should be stated	 The data spacing is highly variable zones drilled at 25 m and other areas drilled on 200 m lines. The data spacing is considered to be sufficient for Inferred Resources. No sample compositing undertaken before assaying. 2 m composites used during resource estimation.
Reporting Archives	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) for preparing the report should be provided.	• All original Boliden and NANR drill core samples are stored at the SGU facility in Malå. All drilling by Copperstone is stored firstly on site in a locked fenced area and then transported to the Company's secure core logging / office in Malå. CS delivered all samples directly to ALS prep lab less than 1km away in Malå. At all times core and samples are secure.
Audits or reviews	The results of any audits or reviews of sampling techniques and data should be presented and discussed.	• ALS prep lab was audited during site visit by Micon CP. No issues identified that would have a material effect on the resource.



PERC Code, 2017 Edition – Table 1 Part 3 - Reporting of Exploration Results

Criteria	Explanation	Commentary
Exploration work carried out by other parties	Acknowledgement and appraisal of exploration by other parties.	 Drilling on the property commenced in 1952 by Boliden Mining AB. Records show that only a single drill hole was placed adjacent to two very old surface trenches. There is no information for these two trenches. One trench did not reach sub-outcrop below the till. From 1971 until 1978, Boliden Mining AB then drilled a total of 109 AQ cored drill holes across the property (approximately 12,168 m). Drill holes were concentrated on Svartliden k No.1 (called "Svartliden" by Copperstone), Sandberget 200 (called "Granliden South" by Copperstone) and Sandberget 300 (called "Granliden Hill" by Copperstone). A total of 53 of these Boliden drill holes have been re- logged and sampled by Copperstone. From 1998 North Atlantic Natural Resources (NANR) was established as a listed JV Company between Lundin Mining AB and Boliden Mining AB. From 1998 until 2004 NANR carried out significant airborne and ground geophysics. From 2004 until 2007 NANR drilled a further 138 drill holes (21,717 m) from 2004 until 2007. Much of this drilling was positioned on shallow magnetic anomalies and also led to the discovery of the Eva massive sulphide occurrence south of Svartliden k No.1. Since Oct 2015 until present Copperstone has drilled a total of 26 drill holes (12,469 m). In 2015, a total of 9 inclined drill holes (1,400 m) to a maximum drilled length of 150 m were completed on Sandberget 200, 300 and Svartliden k No.1. In 2017 a fan of three (3) deep drill holes (total 2,611 m) were drilled between Svartliden and Eva mineralisation in order to probe for a causative intrusive. In 2018 Copperstone completed 10 deep drill holes (7,615 m) around the Granliden area to test magnetic and conductive geophysical anomalies and to start creating a broad grid to define the lateral extent of chalcopyrite mineralisation.
Data compositing (aggregation) methods	In reporting Exploration Results, weighted averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be stated. Where composite intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such compositing should be stated and some typical examples of such composites should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated.	 chalcopyrite mineralisation. All drill hole information was supplied to MICON in the Copperstone database. Drill database is incomplete and locally includes drill holes with no assays, drill holes for with no geology and drill holes for Copperstone Eva project that is located to the south of Svartliden and not included in the Micon Resource Estimate. Appendix 1 contains a list of the borehole collars used. The wireframes were built based on a 0.135% copper cut-off grade, the zones were correlated according to drill hole logs and account for fault zones were present. All estimation was completed using 2 m fixed length composites to provide constant sample weight.

Criteria	Explanation		Commentary
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down- hole lengths are reported, there should be a clear statement to this effect (e.g. 'down-hole length, true width not known').	•	Relationship between drill holes and mineralisation is not known in most cases. Some downhole orientation surveys have been carried out. Optical televiewer footage has been generated in parts or all of 53 drill holes. Footage has been examined in WellCAD software to generate structural data used for building of wireframe interpretations supplied by Copperstone.
Diagrams	Where possible, maps, plans and sections (with scales) and tabulations of intercepts should be included for any material discovery being reported in order to increase the clarity of the reports	•	All boreholes intersecting the mineralisation were used in the resource estimate (see Appendix 1).
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, the summary description must include representative reporting of both low and high grades and intersections in order to avoid creating unrealistic expectations.	•	Not applicable.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; moisture content; potential deleterious or contaminating substances.	•	 During the period of land tenure by Boliden Mining AB, historical records show the following geophysical fieldwork was carried out. 1928 – TURAM and magnetics. Date is unsure 1968 – Airborne EM and magnetics 1969 – SR and magnetics 1971 - Mise a la Masse, gravity, and ground HLEM (Slingram) 1976 – VLF and Induced Polarisation (IP) Copperstone does not have any records of these geophysical surveys. It is obvious that sulphide mineralisation found on the three areas of concentrated Boliden drilling must have been located with these geophysical survey results. NANR carried out the following geophysical surveys. 1997 – Airborne EM (GEOTEM) and magnetics 1998 – Ground follow-up of the GEOTEM with HLEM (Max-Min) and magnetics. Specifically, followed up promising targets. In addition, there are 5 ground EM surveys numbered TEM 1,2,3,4 and 6. These surveys appear to date back to 2005. Reference has been found to a system called EMIGMA which may well have been what was used for these surveys. A series of gradient array IP surveys were also undertaken in over a large area in 2005, or around then. Dipole spacing was 50 m, with 25 m station spacing. This is a quick reconnaissance IP technique which does not see very deep, perhaps 30 m, so anything at depth will have been missed. The survey covers much the same area as the ground EM, but extends further to the west over Granliden and to the west of Eva, and even further north. NANR drilled many of the geophysical anomalies without much direct success, mainly due to the local abundance of pyrrhotite perhaps.

micon	mineral industry
INTERNATIONAL CO LIMITED	consultants

Criteria	Explanation	Commentary
Further work	Explanation	 In 2017-2018 Copperstone carried out a natural-source audio-frequency magnetotelluric (NSAMT) study across the entire internal part of the property. NSAMT readings were taken on a 100 m grid. 43 leastwest orientated lines, on average around 2.4 km long, were measured, totalling approximately 100 line kilometres of data. Each of the 43 lines surveyed were inverted in 1D and 2D, using proprietary Zonge inversion software, and the results imaged as resistivity sections along line down to a depth of around 1.4 km. These 2D results were also imported line by line into an Oasis Montaj 3D database and then gridded into a voxel. This allows the display of the entire resistivity dataset in 3D over the whole survey area. The voxel can be sliced in the X and Y directions, as well as in the vertical sense to show depth slices in plan. Depth slice images were cut from the voxel every 50 m, for easy viewing in a GIS or 3D software packages, in order to facilitate drill planning. A ground magnetic survey was carried out in the field seasons of 2016 and 2017, by GeoVista AB based in Sweden. East-West orientated lines were surveyed, at line spacing of 100 m. This was reduced to 50 m over certain selected areas. Two GEM GSM-19 Walkmags were used, reading every 2 seconds. This resulted in a magnetic reading every 0.5 m to 2.5 m depending on walking speed. A static GSM-19 base station was also deployed, for the diurnal correction. The geomagnetic field was calm during these surveys and the data quality is good. GPS coverage was also good for the duration of the surveys, and a 2 m locational accuracy is estimated. The data were processed in various ways, and a number of derivatives and the analytical signal derived. The data were also reduced to the pole. Some upward continued products were also created in order to reduce near surface geological noise and clarify the anomalies of interest. The magnetic dataset was used to further the geological understanding of the lice
		 Improvement of geological and mineralisation wireframes. For Resource infill and local expansion at Svartliden
		 gridded drilling of 12-15 NQ2 boreholes to a maximum depth of 500 m, with 60% sample coverage.
		gridded drilling of 16-20 NQ2 boreholes to a maximum depth of 500 m.



 Drilling of 20 m x 800 m exploratory holes to the no and south of Granliden to define the broader geolog extent of mineralisation and scope of Exploration 	Criteria	Explanation	Commentary
 Expansion and development of the Malå core loggir facility to handle up to 30,000 m of new drill cores. To build a more comprehensive 3D geological mode and to understand the nature and style of this base-precious metal system. 			 Drilling of 20 m x 800 m exploratory holes to the north and south of Granliden to define the broader geology, extent of mineralisation and scope of Exploration Target. Expansion and development of the Malå core logging facility to handle up to 30,000 m of new drill cores. To build a more comprehensive 3D geological model and to understand the nature and style of this base-precious metal system.



PERC Code, 2017 Edition – Table 1 Part 4 - Estimation and Reporting of Mineral Resources and Mineral Reserves

Criteria	Explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data verification and/or validation procedures used.	• Data validated by automatic validation, and visual inspection of graphical logs, plans and sections. All errors are resolved.
Geological interpretation	Description of geological model and inferences made from this model. Discussion of sufficiency of data density to assure continuity of mineralisation and provide an adequate database for the estimation procedure used. Discussion of alternative interpretations and their potential impact on the estimation	 The Granliden mineralisation includes east-west striking steeply dipping ore bodies; north-south striking steeply dipping ore bodies and shallowly northeast dipping orebodies. The Svartliden mineralisation forms irregular tabular orebodies that broadly dip to the northwest by 15° to 45°. There is a small uncertainty in orebody geometry locally due to drill hole spacing. This is a limiting factor and is reflected in the Inferred Resource category. Plans and sections have been provided in attached memo report.
Estimation and modelling techniques	The nature and appropriateness of the estimation techniques applied and key assumptions, including treatment of extreme grade values, domaining, compositing (including by length and/or density), interpolation parameters, maximum distance of projection from data points, and the proportion of the estimate that is extrapolated. Interpolation means estimation which is supported by surrounding sample data. Extrapolation means estimation which extends beyond the spatial limits of the sample data The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by- products and other minerals that will affect processing of the ore. In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions behind modelling of selective mining units (e.g. non-linear kriging). The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available. Detailed description of the method used and the assumptions made to estimate tonnages and grades (section, polygon, inverse distance, geostatistical, or other method). Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. If a computer method was chosen,	 Outlier analysis using probability plots was conducted for Cu, Zn, Ag and Au with samples capped at 3.69%, 5.85%, 102 g/t and 0.90 g/t respectively. Estimation was done into 10 m x 10 m x10 m blocks by Inverse Distance (ID³) using variogram derived parameters. Equal width 2m composites were estimated into mineralised domains using hard boundaries to prevent grade smearing. Density was calculated for each block based on the correlation of sulphur and density results, using the following formula: SG = (Sulphur x 0.0339) + 2.7227 At Svartliden sulphur was estimated for each block and then the density was calculated and applied to the blocks. At Granliden the average Svartliden grade of 2.97 t/m³ was used Estimation validation done by visual inspection of estimates on section and creation of comparison swath plots between informing composites and block estimates. No production data or previous estimates available for comparison.



Criteria	Explanation	Commentary
	used. Geostatistical methods are extremely varied and should be described in detail. The method chosen should be justified. The geostatistical parameters, including the variogram, and their compatibility with the geological interpretation should be discussed. Experience gained in applying geostatistics to similar deposits should be taken into account. The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource. All metals (or other components) to be treated should be shown, even those rejected as waste. A statement that there are no other deleterious elements requiring removal should be included.	
Metal equivalents or	The following minimum information should	• Not applicable.
other combined representation of multiple components	 <i>ine jonowing minimum information should</i> <i>accompany any report which includes reference</i> <i>to metal equivalents (or other component</i> <i>equivalents) in order to conform with these</i> <i>principles. It is necessary to identify:</i> <i>individual assays for all metals included in</i> <i>the metal equivalent calculation;</i> <i>assumed commodity prices for all metals.</i> (<i>Companies should disclose the actual</i> <i>assumed prices. It is not sufficient to refer</i> <i>to a spot price without disclosing the price</i> <i>used in calculating the metal equivalent);</i> <i>assumed metallurgical recoveries for all</i> <i>metals and the basis on which the assumed</i> <i>recoveries are derived (metallurgical test</i> <i>work, detailed mineralogy, similar deposits,</i> <i>etc.);</i> <i>a clear statement that it is the company's</i> <i>opinion that all the elements included in the</i> <i>metal equivalents calculation have a</i> <i>reasonable potential to be recovered; and,</i> <i>the calculation formula.</i> In most circumstances the metal chosen for <i>reporting on an equivalent basis should be the one that contributes most to the metal equivalent calculation. If this is not the case, a clear explanation of the logic of choosing another metal must be included in the report. Estimates of metallurgical recoveries for each metal are particularly important. For many projects at the Exploration Results stage, metal are particularly information may not be available or able to be estimated with reasonable confidence. Overall metal recoveries are usually calculated from a mass balance based on the flowsheet. This should have been demonstrated by the testwork and shown to be relevant to the ore body under consideration and not just the sample treated.</i>	- rou appreade.

Criteria	Explanation		Commentary
Cut-off grades or parameters	The basis of the cut-off grades or quality parameters applied, including the basis, if appropriate, of equivalent metal formulae. The cut-off parameter may be economic value per block rather than grade	•	The mining cut off grade of 0.1% Cu was selected on knowledge of similar operations and tested with a conceptual pit optimisation.
Tonnage Factor/In- situ Bulk Density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, the frequency of the measurements, the nature, size and representativeness of the samples.	•	Tonnage reported on a dry basis. Bulk density measured on diamond core using wax sealed samples, using Archimedes' method. Sulphur and density show a positive correlation. Sulphur is estimated for each block and then the density is calculated for this on a block by block basis
Mining factors or assumptions	The mining method proposed and its suitability for the style of mineralisation, including minimum mining dimensions and internal (or, if applicable, external) mining dilution by waste rock. It may not always be possible to make detailed assumptions regarding mining factors when estimating Mineral Resources. In order to demonstrate realistic prospects for eventual economic extraction, basic assumptions are necessary. Examples include access issues (shafts, declines etc.), geotechnical parameters (pit slopes, stope dimensions etc.), infrastructure requirements and estimated mining costs.	•	A conceptual open pit optimisation was done using a Cu price of US\$6,200/t, and conventional open pit mining and processing methods. 5% dilution and 95% mining recovery was applied. An assumed mining cost of US\$1.5/t for ore and waste. Pit slopes of 55° were applied.
	All assumptions should be clearly stated. The method and assumptions used to convert the Mineral Resource to a Mineral Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice of, the nature and the appropriateness of the selected mining methods and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters and hydrogeological regime (e.g. pit slopes, stope sizes, dewatering methods and requirements, etc.), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit optimisation (if appropriate). The mining dilution factors, mining recovery factors, and minimum mining widths used and the infrastructure requirements of the selected mining methods. Where available, the historic reliability of the performance parameters.		
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. It may not always be possible to make detailed assumptions regarding metallurgical treatment processes when reporting Mineral Resources. In order to demonstrate realistic prospects for eventual economic extraction, basic assumptions are	•	Cost assumptions applied include combined processing and G&A of US\$4/t and a copper processing recovery of 95%.



Criteria	Explanation	Commentary
	necessary. Examples include the extent of metallurgical test work, recovery factors, allowances for by-product credits or deleterious elements, infrastructure requirements and estimated processing costs. All assumptions should be clearly stated. A full definition of the minerals or at least the assays is required to ensure that the process is suitable and that any contaminants / pollutants / possible by-products are recognised and suitable process steps included in the flowsheet.	
Mineral Resource estimate for conversion to Mineral Reserves	The flowsheet proposed and the appropriateness of these processes to the mineralisation of the deposit. Whether the process is well-tested technology used on minerals of this type before or novel in nature. The nature, amount and representativeness of test work undertaken. The existence of any bulk sample or pilot scale test work and the degree to which such samples and test results are representative of the ore body as a whole. The metallurgical recovery and upgrading factors used and how these relate to those determined in the test work. Any assumptions or allowances made for deleterious elements or variability in the ore feed to the process should be stated. The environmental and health and safety risks associated with each section of the flowsheet should be noted with those sections dealing with arardous materials or operations covered in more detail. The tonnages and grades reported for Mineral Reserves should state clearly whether these are in respect of material delivered to the plant or after recovery. Comment on suitability of existing plant and equipment for use in the proposed process. Description of the Mineral Resource estimate used as a basis for the conversion to a Mineral Reserve. Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Mineral Reserves. Explain the type and level of study to be undertaken to enable mineral resources to be onto require the reporting of a final or 'bankable' feasibility study, but they require studies to at least a 'pre-feasibility' level, including a mine plan that is technically achievable and that all the relevant parameters for a an assessment of the project's financial viability have been considered. The conversion of mineral resources of operating mines to mineral reserves requires less complex	No Mineral Reserves Reported
Cost and revenue factors	The derivation of assumptions made, regarding projected capital and operating costs. The assumptions made regarding revenue including	• A conceptual open pit optimisation was done using a Cu price of US\$6,200/t, and conventional open pit mining and processing methods. 5% dilution and 95%



Criteria	Explanation		Commentary
	head grade, metal or commodity prices, exchange rates, transportation and treatment charges, penalties, etc. The allowances made for royalties payable, both Government and private. Basic cash flow inputs for a stated period		mining recovery was applied. An assumed mining cost of US\$1.5/t for ore and waste. Pit slopes of 55° were applied. Cost assumptions applied include combined processing and G&A of US\$4/t and a copper processing recovery of 95%.
Market assessment	period. The demand, supply and stock situation for the particular mineral, consumption trends and factors likely to affect supply and demand into the future. A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. The market assessment can indicate that minerals are not saleable in the proportions in which	•	Not considered.
Others	they are to be produced, and as a result the reserves estimates may need to be adjusted. Any potential impediments to mining such as land access, environmental or legal permitting. Location plans of mineral rights and titles. The effect, if any, of natural risk, infrastructure, environmental, legal, marketing, social or governmental factors on the likely viability of a project and/or on the estimation and classification of the Mineral Reserves. The status of titles and approvals critical to the viability of the project, such as mining leases, discharge permits, government and statutory approvals. Environmental descriptions of	•	Not considered
Classification	anticipated liabilities. Location plans of mineral rights and titles. The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors i.e. relative confidence in tonnage/grade computations, confidence in continuity of geology and metal values, quality, quantity and distribution of the data. Whether the result appropriately reflects the Competent Person's view of the deposit.	•	All blocks that fall within the optimised pit shell are classified as Inferred Resources. Blocks with greater than 195 m from a sample point were not estimated. The classification reflects the data quality, geological continuity and drill spacing.
	The basis for the classification of the Mineral Reserves into varying confidence categories. Whether the result appropriately reflects the Competent Person's view of the deposit. The proportion of Probable Mineral Reserves which have been derived from Measured Mineral Resources (if any).		
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	•	No audits or reviews have been carried out
Discussion of relative accuracy/confidence	The results of any audits or reviews of Mineral Reserve estimates. If possible, there should be a statement of the relative accuracy and/or confidence in the mineral resource estimate. For example, the relative accuracy of the resource could be	•	The resource estimate should probably be within +-50% in terms of tonnage and grade. Uncertainties remain in the orebody geometry, due to the drill spacing, relative to the orebody width. Globally the



Criteria	Explanation	Commentary
	described within stated confidence limits, or, if this is not possible, the factors which could affect the relative accuracy and confidence of the estimate could be discussed.	Cu grades are good, but local variations in grade may occur and differ from individual block estimates.No production data is available for comparison
	Where appropriate a statement of the relative accuracy and/or confidence in the Mineral Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. Discussion of any tests of the production sequence via conditional simulation on the uncertainty of tonnage and grade of production increments.	
Schematic description of the principles for reporting of Mineral Resource and Mineral Reserve	A+B+C =Mineral Resource A1+B1 = Mineral Reserve C1 = Mineral Resource D and E are pillars and shall not be included in the reporting if it cannot be shown that their extraction is reasonably possible. Reporting: 1. Mineral Reserves are part of the Mineral Resources. Mineral Reserve A1+B1 Mineral Reserves are reported separately (i.e. they are not included in the Mineral Resources) Mineral Reserve A1+B1 Mineral Reserve A1+B1 Mineral Reserve A1+B1 Mineral Reserve A1+B1	 Mineral Resources are only reported for material within the optimised pit. There are no Mineral Reserves reported.