MAIDEN MINERAL RESOURCE AT DE PUNT

- **High Grade Mineral Resource of 66.1 million tonnes at 16.9% THM[1] (7.1% VHM[2]) containing 11.19 million tonnes of total heavy mineral.**
- **Mineralisation is continuous over the length of the De Punt tenement.**
- **MRC's total Tormin Mineral Resources of heavy mineral sands increased to a combined estimate of 282.6 million tonnes at 10.9% THM, containing 30.8 million tonnes in situ heavy mineral (previously 216.5 million tonnes at 9.1% THM, containing 19.6 million tonnes in situ heavy mineral[3]).**
    - **31% increase in Tormin mineral resource tonnes.**
    - **57% increase in Tormin mineral resource in situ heavy mineral.**
- **Significant potential to increase Mineral Resources given only one of the seven identified De Punt exploration targets has been drilled[4].**

Mineral Commodities Ltd ("**MRC**" or "**the Company**") and its empowerment partner, Blue Bantry Investments 255 (Pty) Ltd, are pleased to announce that the Company's 50%[5] owned subsidiary, Mineral Sands Resources (Pty) Ltd ("**MSR"**) has delivered a high grade Maiden Mineral Resource from Prospecting Right (WC 30/5/1/1/2/10240PR) for the De Punt Inland Strands (also referred to as strandlines), to the south of the existing Western Strandline deposit adjacent to the current Tormin operation (refer Figure 1 below). This Maiden Mineral Resource is reflective of the high grade drilling results from the De Punt Western Strand previously reported[6].

This increase to the overall Mineral Resources at Tormin reflects the Company's focused commitment to its Strategic Plan[7] aiming to increase Tormin's asset value by expanding mineral resources and reserves through organic growth with the aim of significantly increasing production and returning Tormin to historical profitability levels.

[1] THM includes all minerals that report as sink during heavy liquid separation at SG of 2.96 (bromoform) after desliming, within the 45 micron to 2mm size fraction as a percentage of the total material.
[2] VHM includes all currently sold minerals (zircon, rutile, ilmenite, magnetite, and garnet) that report as sink during heavy liquid separation at SG of 2.96 (bromoform) after desliming, within the 45 µm to 2mm size fraction as a percentage of the total material.
[3] Refer ASX announcement entitled 'Annual Mineral Resources and Ore Reserves Statement' dated 28 April 2023.
[4] Refer ASX announcement entitled 'Strandline Extension Targets Identified at De Punt' dated 25 August 2022.
[5] Note the Company's increase to 69% ownership of MSR is subject to shareholder approval. Refer ASX Announcement entitled 'MRC to Increase Ownership Interest in Tormin' dated 12 April 2023.
[6] Refer ASX Announcement entitled 'Final High Grade Drilling Results from De Punt' dated 10 May 2023.
[7] Refer ASX Announcement entitled 'MRC Unveils Five Year Strategic Plan 2022-2026' dated 29 April 2022.

The Maiden Mineral Resource has been completed utilising funds raised by the Company's most recent Rights Issue, in accordance with the anticipated use of funds (De Punt Resource and Reserve drilling, adjacent to Tormin) set out in the corresponding offer document[8].

The Mineral Resource was prepared in accordance with the Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC 2012) and is estimated at **66.1 million tonnes at 16.9% THM** in the categories of Indicated and Inferred using a 2% THM cut-off grade. There is also significant potential to increase Mineral Resources given only one of the seven identified De Punt exploration targets have been drilled (refer Figure 2 below). The estimation was done by Manna Hill Geoconsulting, an independent geological and geostatistical consultancy. Pursuant to ASX Listing Rule 5.8.1, and in addition to the information contained in the body of this release, please refer to Appendix 1, JORC Table 1 for additional information which is material to understanding this Mineral Resource estimate.

Interim Chief Executive Officer Adam Bick commented: "*The De Punt maiden high grade mineral resource allows the Company to target extending production another 13km south, along strike of our Inland Strands deposit, expand our existing Western Strandline orebodies. This extremely significant Ore Resource upgrade (57% increase in Tormin mineral resource in situ heavy mineral) significantly enhances the asset value of our Heavy Minerals division, with significant potential upside given only one of seven exploration targets at De Punt have been drilled. The Inland Strands provides flexibility for Tormin to sustainably mine its two producing, replenishable placer beach deposits over the long term and also provides another long term profitability source in its own right. This should provide renewed excitement for MRC shareholders that the Heavy Minerals division is moving towards its stated goals of increased scale to Tormin.*"

The reported resource is located in the western strandline which has a strike length of 11.5km, is approximately 200m wide and averages 15m in thickness; 250m of the 11.5km is an extension of the Inferred resource into the adjacent Geelwal Karoo farm, 10262PR. The top of the strandline averages 35m below surface. The maiden Mineral Resource is given below in Table 1.

Table 1 - Mineral Resources for the De Punt Western Strandline Deposit (2% THM cut-off grade)

Category	Tonnes (Mt)	THM (%)	In Situ THM (Mt)	Zircon (% HM)	Garnet (% HM)	Ilmenite (% HM)	Rutile (% HM)	Anatase (% HM)	Magnetite (% HM)	VHM (% HM)
Measured	-	-	-	-	-	-	-	-	-	-
Indicated	26.9	15.1	4.06	4.45	21.1	18.2	2.75	0.24	0.90	47.6
Inferred	39.2	18.2	7.13	3.25	17.1	14.5	2.10	0.17	1.17	38.3
Total	**66.1**	**16.9**	**11.19**	**3.74**	**18.7**	**16.0**	**2.36**	**0.20**	**1.06**	**42.1**

- Mineral assemblage reported as in situ percentage of THM content.
- Tonnes and grades numbers may not compute due to rounding.

[8] Refer ASX Announcement entitled 'Supplementary Offer Document' dated 7 December 2022.

Table 2 - Total Tormin Mineral Resources of Heavy Mineral Sand as at 20 May 2023

Project	Category	Resource (Mt)	THM (%)	In Situ THM (Mt)	Zircon (%HM)	Garnet (%HM)	Ilmenite (%HM)	Rutile (%HM)	Anatase (%HM)	Magnetite (%HM)
Tormin Beaches	Indicated	1.86	10.3	0.19	2.5	43.1	5.4	1.3	0.1	0.6
	Inferred	0.19	10.1	0.02	2.3	48.9	5.0	1.2	0.1	0.7
	Total	**2.05**	**10.3**	**0.21**	**2.5**	**43.6**	**5.4**	**1.3**	**0.1**	**0.7**
Northern Beaches	Indicated	1.49	17.2	0.26	2.6	49.6	6.8	1.3	0.1	0.6
	Inferred	0.23	6.9	0.02	2.2	41.7	4.5	1.3	0.0	0.8
	Total	**1.72**	**15.8**	**0.27**	**2.6**	**48.6**	**6.5**	**1.3**	**0.1**	**0.6**
Western Strandline	Measured	32.7	19.21	6.2	1.82	12.49	7.91	1.09	0.21	0.52
	Indicated	39.7	9.48	3.7	1.05	14.77	3.80	0.84	0.21	0.74
	Inferred	119.2	6.93	8.2	2.60	10.68	18.04	1.44	0.29	0.43
	Stockpile	1.6	12.84	0.2	4.21	18.85	25.78	1.95	0.39	0.78
	Total	**193.2**	**9.58**	**18.5**	**2.16**	**11.89**	**13.46**	**1.26**	**0.25**	**0.51**
Eastern Strandline	Indicated	1.9	5.34	0.1	6.12	15.71	35.44	7.73	0.92	0.89
	Inferred	17.5	3.13	0.5	6.35	14.39	36.74	6.09	1.19	0.51
	Total	**19.5**	**3.36**	**0.6**	**6.32**	**14.52**	**36.60**	**6.25**	**1.16**	**0.57**
Sub Total		**216.5**	**9.1**	**19.6**	**2.54**	**12.72**	**15.41**	**1.71**	**0.33**	**0.52**
De Punt	Indicated	26.9	15.1	4.06	4.45	21.1	18.2	2.75	0.24	0.90
	Inferred	39.2	18.2	7.13	3.25	17.1	14.5	2.10	0.17	1.17
	Total	**66.1**	**16.9**	**11.2**	**3.74**	**18.7**	**16.0**	**2.36**	**0.20**	**1.06**
Grand Total		**282.6**	**10.9**	**30.8**	**2.82**	**14.12**	**15.55**	**1.86**	**0.30**	**0.64**

- Mineral assemblage reported as in situ percentage of THM content.
- Tonnes and grades numbers may not compute due to rounding.
- 2% THM cut-off grade used for Tormin Beaches, Northern Beaches and Western and Eastern Strandline.

Background

In July 2022, MSR was granted Prospecting Right 10240PR to explore the Inland Strands at De Punt, an area covering 4,495 hectares and potentially hosting southern extensions of the Western and Eastern Strandline deposits[9]. This prospecting area is 13km long and adjacent to the existing mining operations.

In August 2022, an airborne magnetic and radiometric ("**AMR**") survey was conducted over the De Punt Prospecting Right[4] with two main linear magnetic trends identified within the tenement; the Western linear trend which is 13km long and the Eastern linear trend with an aggregate length of 8km (see Figure 2). Running semi-parallel to the coast, these magnetic trends appeared to be a continuation of palaeo-marine strandlines identified at Geelwal Karoo, the Western Strandline (35-40m above mean sea level), and an Eastern Strandline (~86m above mean sea level). Geelwal Karoo strandlines reported a total of 212.7Mt Mineral Resources and 60.3Mt Ore Reserves[10] with mining of the Western Strandline having commenced in 2020.

[9] Refer ASX Announcement entitled 'MRC Granted De Punt Prospecting Right at South Tormin' dated 28 July 2022.
[10] Refer ASX Announcement entitled 'Significant Ore Reserve Increase for Tormin Inland Strands' dated 5 April 2023.

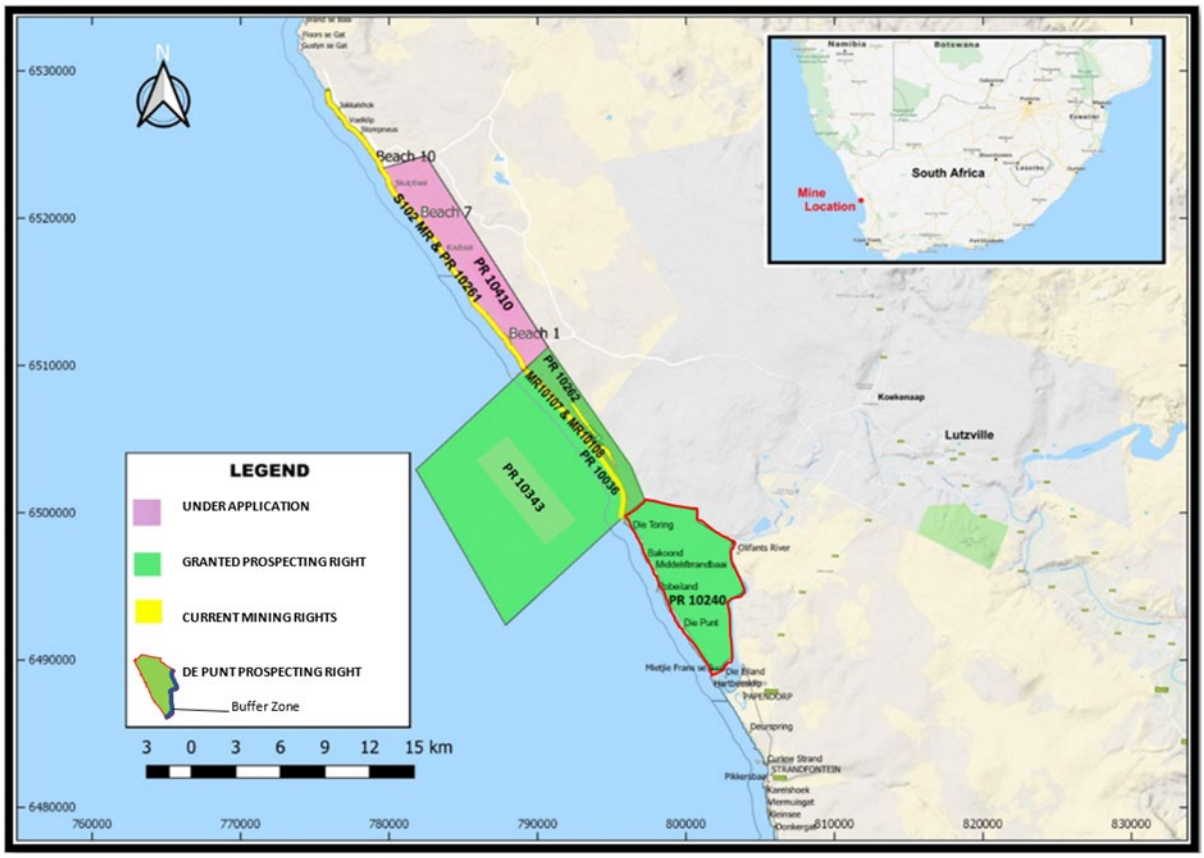

Figure 1 – Location of MSR's tenements at Tormin. De Punt (10240PR) lies to the south of the current operation.

At De Punt, a total of seven major drilling targets (identified along strong magnetic anomalies) were identified over the strike of the Western and Eastern Strandlines extensions, covering an area of approximately 700 hectares. The first phase of drilling (6,018m) commenced in October 2022 and targeted the Western Strandline (Target 1) geophysical aeromagnetic anomaly (Figure 2).

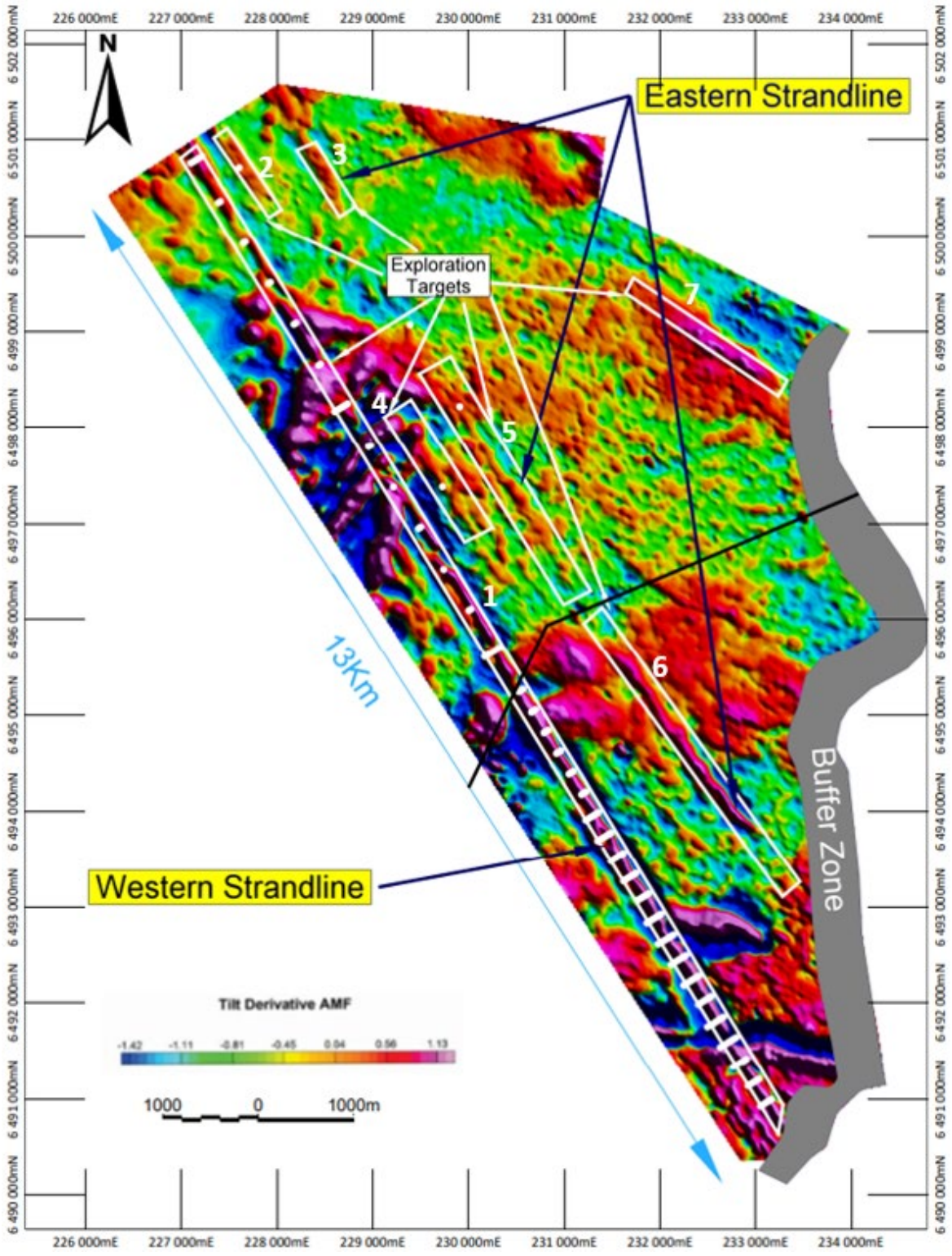

Figure 2 – Anomalous Magnetic Field (AMF) generated from airborne survey over De Punt tenement shows predicted magnetic signatures of seven drilling targets and drilled boreholes as white dots.

There is significant potential to increase Mineral Resources given only one of the seven identified De Punt exploration targets has been drilled.

Geology and Geological Interpretation

The western coastal plain of South Africa contains a significant resource of detrital heavy minerals sands by world standards. These Cenozoic age deposits are hosted in raised palaeo-marine strandlines (deposited and preserved by transgression/ regression cycles) and in aeolian deposits of the West Coast Group and are unconformably underlain by basement rocks of the Mesoproterozoic Namakwa-Natal Metamorphic Province, the Neoproterozoic Gariep Supergroup, the Palaezoic Cape Supergroup and the unconsolidated Cretaceous age clayey and gravelly sands.

The De Punt Western Strandline deposit is a classic west coast inland strandline mineral sands deposit with the grain size characteristics interpreted to support an offshore depositional setting, closer to the shoreline position. The strandline is generally of moderate to high grade VHM whilst overlying lithologies, Red Aeolian Sand (RAS), silcrete and Orange Feldspathic Sand (OFS) generally contain lower grade. The overlying lithologies generally form a blanket and are intersected by all drillholes. Lithologies below the strandline may only be intersected by one or several holes such as clayey and gravelly layers (Figures 3 & 4).

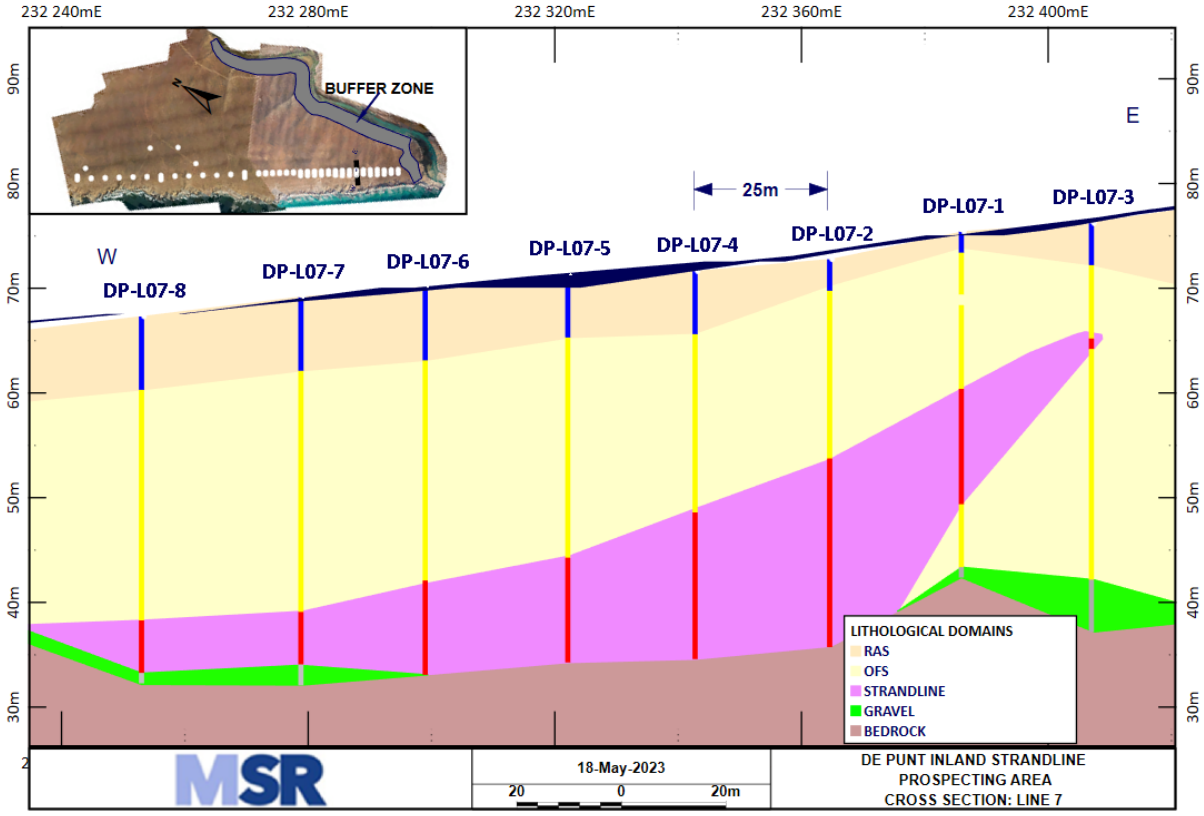

Figure 3 – E-W cross section showing block model lithological wireframes for Line 7 drilled in the southern section of the prospecting area with a total of 8 drillholes. Section line indicated by a black line in the insert map.

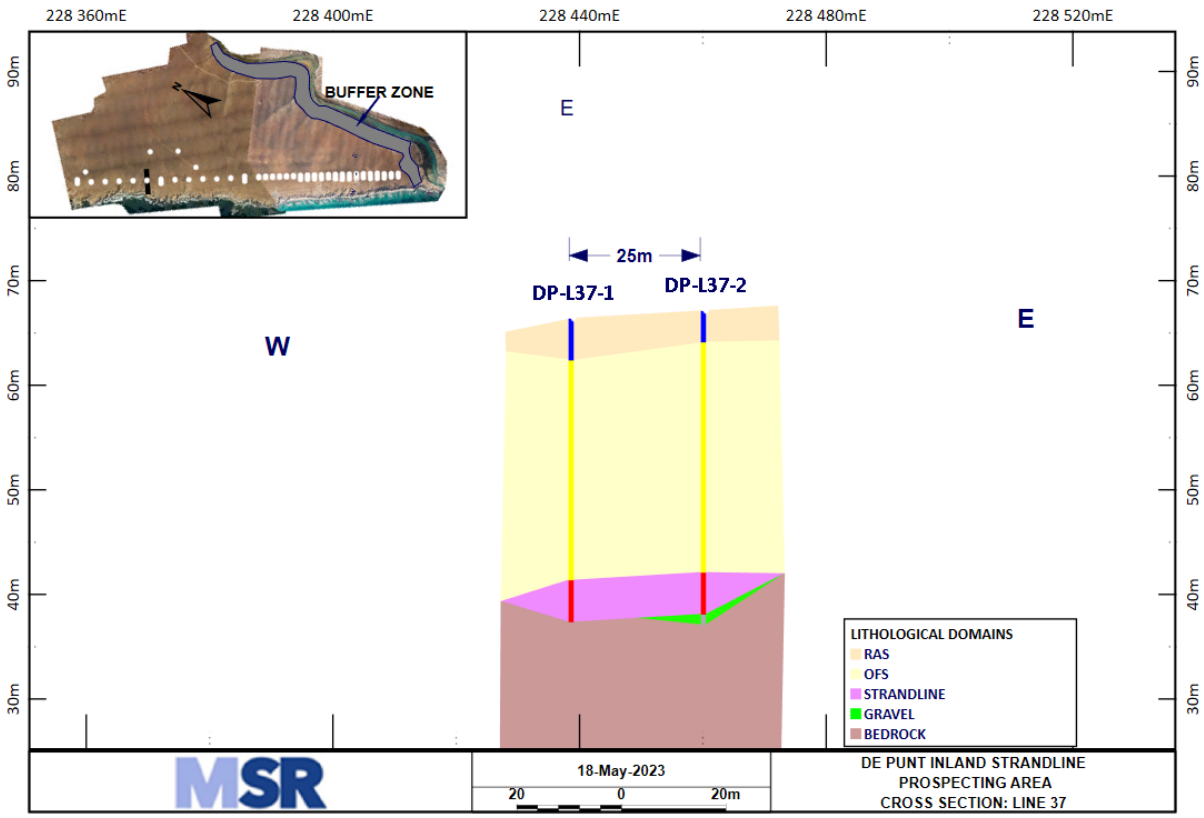

Figure 4 – E-W cross section showing block model lithological wireframes for Line 37 drilled in the northern section of the prospecting area with a total of 2 drillholes. Phase 2 drilling is planned to target the northern section and the six effectively undrilled targets. Section line indicated by a black line in the insert map.

Resource Drilling

The first phase of drilling with a truck-mounted air core drill rig at the De Punt commenced in October 2022 and targeted ca.6,000m. A total of 169 drill holes (165 within the Western Strandline geophysical anomaly) was drilled for 6,018m, in fence lines 250m apart on 25m holes spacing in the southern section, and 500m lines apart and 25m hole spacing in the northern section (see Figure 2 above).

The strandline has good continuity between holes along strike and good continuity across strike however is of limited extent across strike (Figure 3). Grade continuity is moderate/high in the strandline domain and moderate in other domains. The strandline is a concentration of high grade VHM with the overlying lithologies which are generally Red Aeolian Sand (RAS), silcrete, dorbank and Orange Feldspathic Sand (OFS) containing lower grade mineralisation. RAS and OFS generally form a blanket and are intersected by all drilling whilst other domains generally occurring below the strandline such as clay and gravel may only be intersected by one or several holes.

Due to the size of the drill rig used, including the air compressor, drilling on occasion proved difficult at depth where gravels and bedrock were encountered. Consequently, drillholes terminated either on bedrock or when gravel which prevented further penetration was encountered.

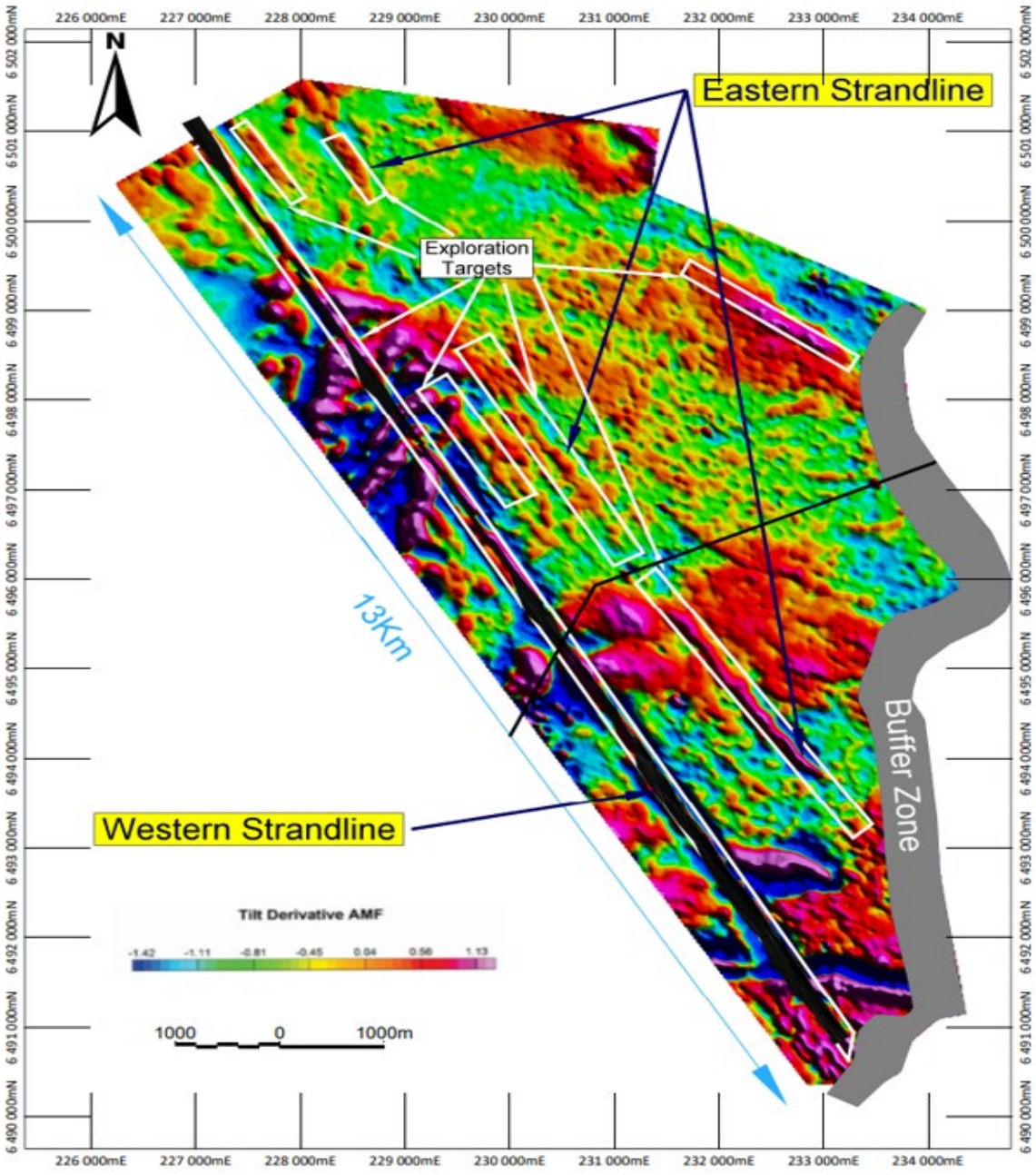

Figure 3 – Map showing the extent of the Western strandline mineralisation in the form of a wireframe (black outline).

The second phase of drilling is planned to target the northern section of the Western Strandline (infill and definition drilling) and the other six virtually undrilled eastern targets.

Sampling

All one metre drillhole samples of 15-20kg were collected from a cyclone in plastic bags. Each bag was riffle split into two pre-numbered calico bags of ±5kg each and the remainder of the samples collected in a large plastic bag. The ±5kg samples were submitted directly to the Tormin mine laboratory to be analysed for oversize, slimes and heavy minerals.

All one metre drillhole samples were dried, weighed, de-slimed (-45 micron fraction) and screened (+2mm oversize). An eight-way rotary splitter is then utilised to obtain a 200g representative sample for heavy liquid separation using bromoform. The heavy mineral concentrate is analysed at the on-site Tormin laboratory by Panalytical XRD machines using the Rietveld method and select samples analysed at external laboratories for QA/QC. QA/QC samples include field duplicates, THM duplicates, blanks and standards. All grades reported are from XRD results on heavy liquid sink. Industrial laboratory XRF machines (Panalytical Epsilon 3 ED) are used at the Tormin mine laboratory as a grade verification check on the XRD zircon content.

Estimation Methodology

The Mineral Resource estimation involved the use of drillholes and geology/topography to construct three-dimensional wireframes to define mineralised domains using Leapfrog software. These domains were primarily based on lithological logging. Domains were snapped to holes and extended about half the drill spacing from last holes along and across strike. Ordinary kriging was used as the primary estimator for the THM and Valuable Heavy Minerals values. A non-rotated parent block size of 15m x 15m x2m (sublocking down to 5m x 5m x 0.5m) reflects the geometry of the mineralised domains and drillhole spacing. The estimation was undertaken within Isatis-Neo software.

All samples are 1m in length and compositing was not required. Kriging Neighbourhood analysis was used to optimise the search strategy for THM in the Strand domain and this search was used for all domains and variables. The same search was used for all variables to maintain correlations. The search dimensions were 1200m x 400m x 60m with the average sample to block distance for kriging the Strand domain being about 250m. Quadrant searching was used with a maximum of 7 samples per quadrant.

Domain boundaries were treated as hard during kriging. Although the variable distributions are positively skewed outliers are not a significant issue and this was demonstrated via statistically assessing the impact of top cuts. Top cuts were not used in the resource estimate.

The kriged estimate was statistically validated against inverse distance and nearest neighbour check estimates. The kriged estimates was also visually validated on cross sections for all variables (e.g., Figure 4).

The bulk density is based on a calculation of the specific gravity of the silica and heavy mineral content fractions of each sample. It is therefore not fixed and fluctuates between 1.7 and 2.5 as per the formula: SG=1.68+(0.0095 x THM). The use of a bulk density algorithm is a standard industry practice for the estimation of mineral sands resource and is considered adequate for the definition of Inferred and Indicated resources.

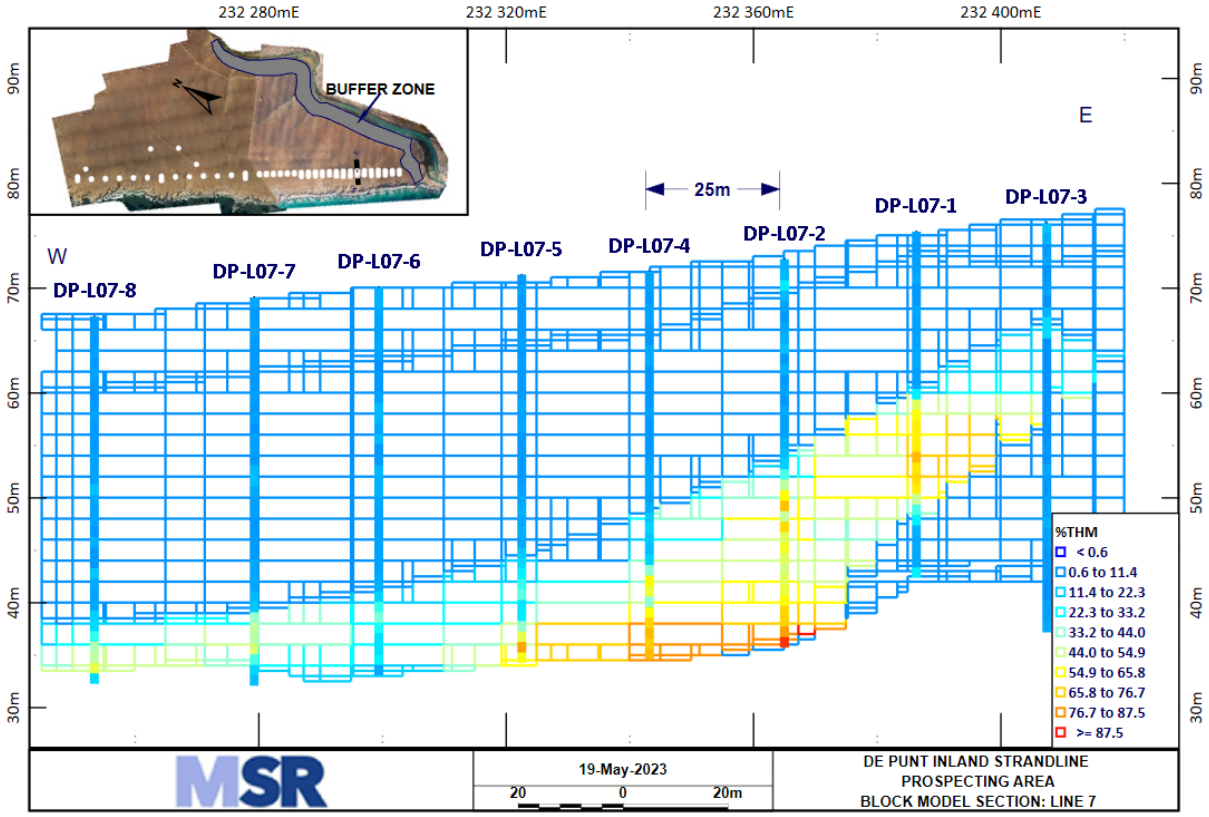

Figure 4. E-W cross section of the drillholes and block model coloured by block model and drillhole %THM for line 7 located in the southern portion of De Punt. Section line indicated by a black line in the insert map.

Resource Classification and Cut-off Grade

Drilling of 25m x 250m sections was sufficient for Indicated resources providing there are more than three holes per section whilst sections with two or three holes were classified as Inferred (Figure 4). Drilling of 25m x 500m was sufficient for Inferred resources. None of the resource has sufficient continuity at the current drill spacing to be classified as Measured. Both Indicated and Inferred resources do not extend more than about half the drill spacing past the last drillhole. The resource has been reported at a 2% THM cut-off, which is the cut-off for all of Tormin's mineral resources. This cut-off is supported by the currently operating Tormin mine.

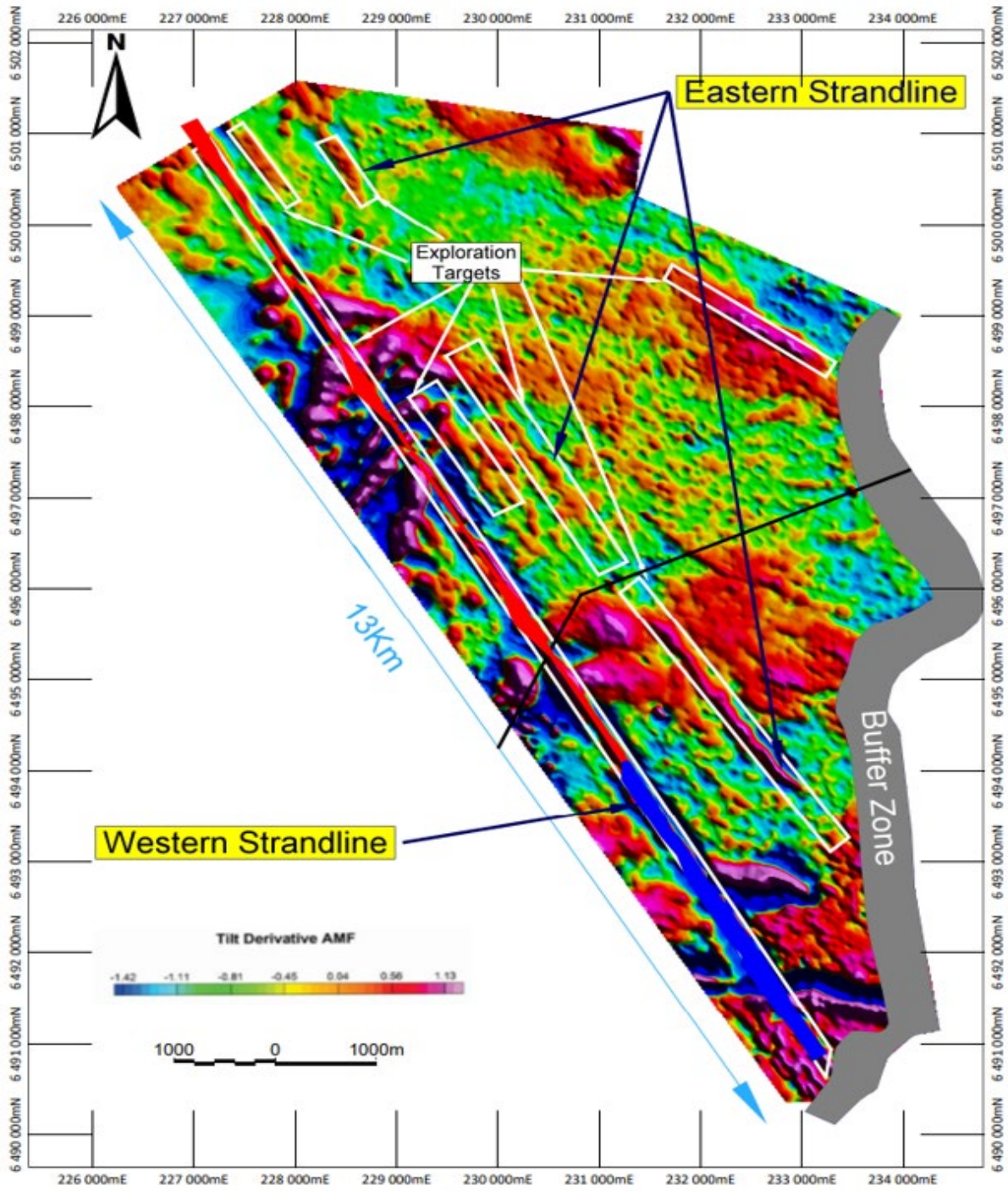

Figure 5 – Map showing the location and extent of the Western strandline block model and the two categories; Red = Inferred, Blue = Indicated).

Mining and Metallurgical Parameters

Mining is through conventional open pit methods. The thickness and continuous nature of the mineralisation supports a non-selective bulk mining method. Material east, west and above the Strand domain is mostly low-grade resource so dilution is not a significant issue. Dilution needs to be managed for the lower contact of the Strand domain, particularly if this material is high in clay.

The Company believes there are no mining factors which affect the assumption that the deposit has reasonable prospects for economic mining. The metallurgical parameters have been taken from the metallurgical tests at Geelwal Karoo because the deposits are considered to be similar. The VHM mineral assemblage, low slimes and oversize are considered fit for an economic extraction.

The RAS domain (from 0 to about 10m below surface) has high slimes (about 30%) and has been excluded from the resource.

Refer to the JORC Table 1 for further explanatory notes.

ENDS

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About Mineral Commodities Ltd

Mineral Commodities Ltd is a global mining and development company with a primary focus on the production of high-grade Mineral Sands and Natural Flake Graphite from operations in South Africa and Norway.

The Company is a leading producer of zircon, rutile, garnet, magnetite, and ilmenite concentrates through its Tormin Mineral Sands Operation, located on the Western Cape of South Africa.

The Company owns and operates the Skaland Graphite Operation in Norway, the world's highest-grade operating flake graphite mine and is the only producer in Europe. The planned development of the Munglinup Graphite Project, located in Western Australia, builds on the Skaland acquisition and is a further step toward an integrated, downstream value-adding strategy which aims to capitalise on the fast-growing demand for sustainably manufactured lithium-ion batteries.

In April 2022, the Company released its Five-Year Strategic Plan 2022-2026[11] to delineate and implement its aspiration to become a leading vertically integrated diversified producer of

[11] Refer ASX Announcement entitled 'MRC Unveils Five Year Strategic Plan 2022-2026' dated 29 April 2022.

graphitic anode materials and value added mineral products with a commitment to operate with a focus on the Environment, Sustainability and Governance.

Cautionary Statement

This announcement contains forward-looking statements. Any forward-looking statements reflect management's current beliefs based on information currently available to management and are based on what management believes to be reasonable assumptions. It should be noted that various factors may cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements.

These forward-looking statements are not a guarantee of future performance and involve unknown risks and uncertainties, many of which are beyond MRC's control. This may cause actual results and developments to differ materially from those expressed or implied. These risks include but are not limited to, economic conditions, stock market fluctuations, commodity demand and price movements, access to infrastructure, timing of approvals, regulatory risks, operational risks, reliance on key personnel, Ore Reserve and Mineral Resource estimates, native title, foreign currency fluctuations, exploration risks, mining development, construction, and commissioning risk.

Forward-looking statements in this announcement apply only at the date of issue and are subject to any continuing obligations under applicable law or regulations, MRC does not undertake to publicly update or revise any of the forward-looking statements in this announcement or to advise of any change in events, conditions, or circumstances on which any such statement is based. Readers are cautioned not to place undue reliance on any forward-looking statements contained in this announcement.

Competent Persons Statement

The information in this Announcement related to Sampling Techniques and Data, and Exploration Results is based on information compiled and has been approved for release by Ms Thuli Hlela. Ms Hlela is a Registered Professional Natural Scientist ("Pr.Sci.Nat") with the South African Council for Natural Scientific Professions ("SACNASP") and a member of Geological Society of South Africa ("GSSA"), a Recognised Professional Organisation ("RPO"). She is Mineral Resources Manager of Mineral Sands Resources ("MSR") and a full-time employee of the Company. She has sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activity she is undertaking to qualify as a Competent Person in accordance with the JORC Code (2012). Ms Hlela consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this Announcement related to Mineral Resources is based on information compiled and approved for release by Mr. Chris De-Vitry, who is a member of the Australian Institute of Mining and Metallurgy ("AusIMM") and the Australian Institute of Geoscientists ("AIG"). Mr. De-Vitry is a Principal Consultant at Manna Hill

GeoConsulting Pty Ltd. He has sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activity, he is undertaking to qualify as a Competent Person in accordance with the JORC Code (2012). The information from Mr. De-Vitry was prepared under the JORC Code (2012). Mr. De-Vitry consents to the inclusion in this ASX release in the form and context in which it appears.

Appendix 1
JORC TABLE 1
Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	Sampled exclusively by vertical aircore. One-metre air core drill samples of 15-20kg were collected from a cyclone in plastic bags. Each bag was riffle split into two pre-numbered calico bags of ±5kg each and the remainder of the samples collected in a large plastic bag. The ±5kg samples were submitted directly to the Tormin mine laboratory to be analysed for oversize, slimes and heavy minerals. The laboratory sample was dried, de-slimed (removal of -45 micron fraction) and screened (+2mm oversize). 200g of sample split to use for heavy liquid separation using bromoform with density range between 2.92 and 2.96 g/ml to define total heavy mineral (THM) content.

Criteria	JORC Code Explanation	Commentary
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face- sampling bit or other type, whether core is oriented and if so, by what method, etc).*	Aircore drilling was used. Aircore drilling is considered a standard industry drilling method for heavy mineral sand (HMS) mineralisation. 85 mm drill bits and rods were used. All holes were drilled vertical.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Sample weights and recovery have not been assessed. This is planned to be assessed for the next drilling campaign.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	Each hole was logged by a geologist on pre-printed log sheets. Geological and lithological observations per 1m interval were recorded together with field sections and hand drawn down- the-hole logs. Special attention was given to heavy minerals intersected as a guide to potential marine strandlines and marine diamond deposits. Percentage HMS was recorded from visual observations. The presence or absence of magnetite was tested using a handheld pen magnet. Results were recorded on the log sheet. Each 1m sample is stored in numbered chip trays.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	Sampling over 1m down-the-hole intervals as determined by 1m marks on the rig mast. Drill samples were riffle split into approximately ±5kg samples to be sent to the on-site laboratory. Technicians undertaking the splitting are supervised by mine site geologist to ensure sampling quality. Duplicate samples were riffled for the Tormin mine laboratory external QA/QC checks. The laboratory utilizes an 8-way rotary splitter to generate a 200g representative sample for heavy liquid separation (HLS) using bromoform.

Criteria	JORC Code Explanation	Commentary
	Whether sample sizes are appropriate to the grain size of the material being sampled.	
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	All sample analyses were undertaken by the Tormin mine laboratory. The mine owns and operates a state-of-the-art heavy liquid separation lab with Panalytical XRD machines. All grades reported are from XRD results on heavy liquid sink. Industrial laboratory XRF machines (Panalytical Epsilon 3 ED) are used by Tormin mine as a grade verification check on the XRD zircon content. The Tormin mine laboratory completed its own internal QA/QC checks. These checks included, internal lab standard at 1:40, blanks at 1:200, field duplicates at 1:50 and external lab duplicates (XRD Analytical & Consulting in Pretoria) at 1:100.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	All sampling was done by mine site personnel overseen by a qualified and experienced geologist. All sample preparation was done by trained staff, supervised by chemists and the laboratory manager. The lab results and logging have been reviewed by external consultants to MSR (Daniel Hastings of Quantified Strategies) as well as internally by MSR's resource manager. The drill hole logs have been converted to electronically stored formats and stored in a database provided by Maxgeo (DataShed). This database is hosted on an offsite server supplied by Maxgeo and managed by their database staff. No adjustment to assay data results were done outside the standard XRD calibration software being used.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	Hole collars were surveyed by DGPS accurate to within centimeters by mine surveyors. Down hole surveys for shallow vertical aircore holes are not required. WGS 84 datum and UTM/ zone 34S coordinate system is used.

Criteria	JORC Code Explanation	Commentary
Data spacing and distribution	*Data spacing for reporting of exploration results.* *Whether the data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	Each drill fence line is approximately 250 or 500m apart along the extension of strandline strike in the southern half of the lease area and 500m apart in the northern half. Each drill hole is spaced 25m apart along each drill line perpendicular to the strandline inferred strike.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	Vertical drilling to intersect sub-horizontal strata. Orientation of the drill holes will not result in sampling bias.
Sample security	*The measures taken to ensure sample security.*	Sampling was done using pre-printed calico bags to prevent mislabeling. All sample bag numbers were logged against the drill hole by the site geologist. Three samples per metre drilled were produced. One stored securely in a bag farm for reference, one for external QA/QC use and one sent directly to the mine lab at the end of each days drilling in a secure area. The Tormin mine laboratory inspected the submitted samples and did not report any missing or error of the samples against the sample lists.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The lab results and logging have been reviewed by external consultants to MSR (Daniel Hastings of Quantified Strategies) and internally as part of normal validation processes by MRC.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *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.*	The area has a granted prospecting right (WC 30/5/1/1/2/10240 PR) in the name of Mineral Sands Resources (Pty) Ltd a subsidiary of ASX listed Mineral Commodities Ltd (ASX: MRC). This Prospecting Right (Inland Strand) incorporates an area approximately 13km in length covering 4,495 hectares.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The general area has been investigated and mined for diamond and heavy mineral deposits as far back as the 1930s. Subsequent geological surveys and exploration programs investigated the distribution, mineralogy, and economic potential of diamond and heavy mineral sands along the coastline of De Punt (Trans Hex, 1989-1991, Lybb and Barnes, 1998, De Wit, 1999 and Cole, 2013). The area has a historical strandline deposit (the 35mamsl strandline) as identified by 24 exploration holes that intersected it from 51 holes drilled (unpublished results -Trans Hex 1999- 2000, B Cilliers). This drilling has not been used for this resource estimate.
Geology	*Deposit type, geological setting and style of mineralisation.*	The western coastal plain of South Africa contains a significant resource of detrital heavy minerals by world standards. The heavy mineral sand deposits occur older palaeo-beach raised strandlines found inland (inland strandlines) e.g., Tronox Namakwa Sands and Tormin. Apart from the mid-Jurassic, Cretaceous and Tertiary (Paleogene) sediments along the coast, numerous small fossiliferous, marine, and terrestrial deposits of Neogene age outcrop along the coastal zone. The onshore mineral sands are marine palaeo-terraces “Inland Strands”, aeolian sands and fluvial sediments. These targets were formed during Miocene, Pliocene, and Quaternary/Pleistocene coastal transgression (sea moved inland) and regression cycles.

Criteria	JORC Code Explanation	Commentary
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* *Easting and northing of the drill hole collar* *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* *dip and azimuth of the hole* *down hole length and interception depth* *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	169 holes drilled for 6,018m. 6,017m sampled and assayed with 8 of these sampled drillholes not reporting any assays due to insufficient THM sample. The minimum hole length is 18m, maximum 63m, average depth of drilling is 35.6m and the median is 37m. East collar ranges – 227,100mE to 233,200mE. North collar ranges – 6,490,900mN to 6,500,800mN. Azimuth ranges/dip ranges – vertical drilling.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	No exploration results are being reported.
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*	The strandline mineralisation is sub-horizon in nature and the aircore drilling intercepts are vertical. No exploration results are being reported.

Criteria	JORC Code Explanation	Commentary
	down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	No exploration results are being reported.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	No exploration results are being reported.
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; potential deleterious or contaminating substances.*	Historical drill data is not used as it is of unknown quality. Only MRC data is used.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	There will be infill drilling prior to mining.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in the preceding sections also apply to this section)

Criteria	JORC Code 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 validation procedures used.*	The data was plotted, and plots were as expected with no mis-plots or extraneous data found. Data is stored in an offsite database hosted by Maxgeo. Data was loaded into Leapfrog software and checked for missing data, overlapping intervals, duplicates, implausible or impossible values etc. Scatterplots were checked for any implausible values. Collar and topography elevations are less than 1m difference and no changes to either were necessary.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	The Competent Person has not had sufficient time to visit site. A site visit is planned for 2023.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	The deposit is a classic inland strandline mineral sands deposit with no doubt as to its genesis. The grain size characteristics are interpreted to support an offshore depositional setting, closer to the shoreline position. The geology/topography and drilling extents have been used to constrain the resource domains. The data was partitioned into areas (domains) based on geology/topography. Domains are Red Aeolian Sand (RAS), Orange Feldspathic Sand (OFS), Strandline (Strand), Clay (CY), Gravel/Clay (CY/GR), Gravel (GR) and Bedrock (Bedrock or Basement). Drilling generally does not penetrate basement and holes are interpreted to stop on basement. Occasionally holes stop above basement if rock is intersected. Some domains form a blanket and are intersected by all drilling (RAS and OFS) other domains such as clay and gravel may only be intersected by one or several holes. The strandline has good continuity between holes along strike and good continuity across strike however is of limited extent across strike. Grade continuity is moderate/high in the Strand domain and moderate in other domains.
Dimensions	*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.*	The Strand domain inside the De Punt prospecting rights area has a strike length of 11.5km and is approximately 200m wide by 15m thick. The top of the strand is about 35m below surface. The sand (OFS) above the Strand is generally low-grade resource however, from surface to approximately 10m depth while “ore grade” is high in slimes (RAS) and is currently not included in the resource. Clay, Gravel, and Gravel/Clay is often located below the Strand and above bedrock. Some of the Gravel and Clay/Gravel may be mineable however, this material is not included in the resource. The volume of any of this

Criteria	JORC Code Explanation	Commentary
		mineable material would probably be negligible.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen, include a description of computer software and parameters used.* *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.* *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* *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.* *Any assumptions about correlation between variables.* *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.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	Domains were created using Leapfrog software. The interpretation was snapped to holes and extended about half the drill spacing from last holes along and across strike. Drill spacing is nominally 250m x 20-25m or 500m x 20-25m. Estimation was within Isatis-Neo software. Kriging Neigbourhood analysis was used to optimise the search strategy for THM in the Strand domain and this search was used for all domains and variables. The same search was used for all variables to maintain correlations. Searches were orientated parallel to the strandline and used a maximum of 7 samples per quadrant with a maximum of six samples per hole. The search dimensions were 1200m x 400m x 60m. Average sample to block distance for kriging the Strand domain was about 250m. Domain boundaries were treated as hard during kriging. The mineralisation is considered to be diffusive in nature and kriging is an appropriate estimate method. Although the variable distributions are positively skewed outliers are not a significant issue. Top cutting is not needed and even if it was applied it would have very little impact (1% in metal loss or less was observed for all variables in the Strand domain when top-cutting was tested). All samples are 1m in length and compositing was not required. Parent block size is 12.5m x 12.5m x 2m with sub-blocking down to 5m x 5m x 0.5m. The model is not rotated. A relatively small parent block size was required to adequately represent the smaller domains in a non-rotated model. The kriged estimate was statistically validated against inverse distance and nearest neighbour check estimates. The kriged estimates were also visually validated on cross sections for all variables. This is the first estimate for De Punt. No deleterious elements are present. Mining will have low horizontal selectivity but moderate to high vertical selectivity.

Criteria	JORC Code Explanation	Commentary
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The resource tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	Final reported resources were based on a 2% THM cut-off grade for blocks as this is the current minimum grade where there is a reasonable expectation for eventual extraction. 2% cut off grade was based on grade-tonnage curves with respect to THM and valuable heavy mineral (VHM) assemblage. Also considered was current and anticipated plant performance, and other similarly sized deposits in the region.
Mining factors or assumptions	*Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	Mining is through conventional open pit methods. The thickness and continuous nature of the mineralisation, supports a non-selective bulk mining method. Material east, west and above the Strand domain is mostly low-grade resource so dilution is not a significant issue. Dilution needs to be managed for the lower contact of the Strand domain, particularly if this material is high in clay. The Company believes there are no mining factors which affect the assumption that the deposit has reasonable prospects for economic mining.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	The metallurgical recovery is similar to other mineral sand operations. Metallurgical parameters have been taken from Western Strand to the north of De Punt which is believed to be metallurgically similar. The VHM mineral assemblage, low slimes and oversize are considered fit for economic extraction. To date, the Company considers there are no metallurgical factors which are likely to significantly affect the assumption that the deposit has reasonable prospects of eventual economic extraction. The RAS domain (from 0 to about 10m below surface) has high slimes (about 30%) and has been excluded from the resource.
Environmental factors or assumptions	*Assumptions made regarding possible waste and process residue disposal options. It is*	The deposit excludes any potential resource in the no go zone (buffer zone) along the riverbank. The resource

Criteria	JORC Code Explanation	Commentary
	always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfield project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered, this should be reported with an explanation of the environmental assumptions made.	assumes an environmentally sensitive, sustainable mining method for De Punt. Environmental studies have commenced, however not completed. The local vegetation environment generally consists of strandveld plant communities. Topsoil stripped from the mining operations will be stockpiled for later use during rehabilitation. Slimes content is moderate and tailings generated in the processing plant will be pumped back into the open pits as part of the rehabilitation strategy. Any excess water will be recovered and recycled to the process. There are no significant pollutants introduced with the tailings and the material is inert.
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	The bulk density is based on a calculation of the specific gravity of the silica and heavy mineral content fractions of each sample. It is therefore not fixed and fluctuates between 1.7 and 2.5 as per the formula: SG=1.68+(0.0095 x THM). The use of a bulk density algorithm is a standard industry practice for the estimation of mineral sands resource and is considered adequate for the definition of Inferred and Indicated resource.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* *Whether the result appropriately reflects the Competent Person's*	The Mineral Resources have been classified as Indicated, and Inferred Categories, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves ("JORC Code (2012)"). Classification is based on THM grade, volume and density. Mineralogy estimates for the THM do not necessarily have the same accuracy and precision as the THM. A range of criteria has been considered in determining this classification including, geological continuity and drillhole spacing: Areas with aircore drilling spaced at 250x20m and more than three holes per line have been classified Indicated.

Criteria	JORC Code Explanation	Commentary
	view of the deposit.	When there are only two or three holes per section an Inferred resource classification is applied. Areas with aircore drilling spaced at 500x20m have been classified inferred
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	The estimate has not been externally reviewed.
Discussion of relative accuracy/ confidence	*Where appropriate, a statement of the relative accuracy and confidence level in the Mineral Resource 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 resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that 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 tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	Relative accuracy or precision have not been accessed.