

FINAL BASIC ASSESSMENT REPORT FOR THE PROPOSED PROSPECTING IN SEA CONCESSION AREA 11C BY TRANS ATLANTIC DIAMONDS (PTY) LTD

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Appendix 8: Motivation for no other alternatives

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1 MOTIVATION FOR NO OTHER ALTERNATIVES

Trans Atlantic Diamonds (Pty) Ltd has applied for a right to prospect for diamonds in Sea Area Concession 11C in terms of the Mineral and Petroleum Resources Development Act, 2002, subject to environmental Authorisation. The concession holder does not have the right to prospect in any other areas. No alternatives sites were therefore considered in this Basic Assessment Process. In addition, the concession area is targeted as it is known to contain kimberlite pipes which is a source of diamonds and other mineral deposits.

Kimberlite pipes are believed to have formed by high-pressure and deep-rooted volcanic eruptions. They are igneous intrusions or “pipes” projecting through the Earth’s crust and a major source of diamonds and other minerals such as rutile, zircon, garnets, ilmenite and magnetite (Gurney et al. 1991; Penney et al. 2007). These pipes transport the diamonds and minerals from the upper mantle to the surface of the Earth. These deposits were then further transported by means of erosion, wind, rain and rivers and deposited primarily in the sea in gravel terraces along riverbanks and on the coast. The Orange and Olifants rivers are believed to be the major westward transport mechanisms responsible for the deposition of diamondiferous sediments along west coast of South Africa and southern Namibia (Gurney et al.1991; Penney et al. 2007). With the influence of currents, swell and tidal action, diamonds gradually accumulated on gravel beaches along the coast (Penney et al. 2007). Today, these deposits extend from the coast down to 150 m depth (approximately 50–60 km offshore) where they are found in gullies and potholes which have been covered with sediment over time. It is this marine diamondiferous gravel which is of interest to the modern marine diamond mining industry (Penney et al. 2007).

With the Benguela region being rich in diamond, mineral and other deposits, the former Department of Minerals and Energy (now the Department of Mineral Resources and Energy — DMRE) established designated mineral sea concession areas in 1994, extending from Saldanha Bay to the Orange River mouth on the west coast of South Africa. Prospecting and mining activities are only permitted by individuals that are in possession of a mining or prospecting right, and only within specially designated areas that allow the industry, the trade of commodities, the associated activities and potential impacts, environmental management and the responsible extraction of minerals, to be monitored. Companies can apply for prospecting and/ or mining rights within concession areas for which rights are available. As this is a competitive industry, few concession areas are available at any given time. Although several alternative concession areas were considered by the applicant, the prospecting and mining rights for many of these were already held by other companies.

As the intention of the proposed prospecting activity is to determine the presence of diamondiferous, gemstone, mineral and metal deposits, and to ensure that they are present in quantities that will be economically viable to mine, it is important that a site known to be rich in resources, is selected. As such, few location alternatives exist. Results from prospecting and mining operations conducted within the neighbouring concession areas have indicated that the area is rich in mineral deposits. The study area is therefore expected to have similar resources. In addition, the preferred site contains palaeo-beach deposits which are known from prospecting and mining in other concession areas, to contain diamondiferous gravels.

It is important to note that the exact location of the core and drill sites will only be confirmed after the completion of the seismic surveys. Buffers will be applied around reef areas and areas of conservation concern. The final site layout plan is thus subject to change.