



ENVIRONMENTAL MANAGEMENT PLAN FOR THE EXISTING SMALL-SCALE DIMENSION STONE QUARRYING OPERATIONS ON MINING CLAIM 69448 AT FARM OTJORUHARUI – NO. 251, OKAHANDJA DISTRICT IN OTJOZONDJUPA REGION.

Prepared For

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- ENVIRONMENTAL CONSULTANCY
- ENVIRONMENTAL SAFETY, HEALTH AND MANAGEMENT
- DATA COLLECTION AND ANALYSIS

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1 INTRODUCTION

1.1 General Introduction

DNHT Investment Proprietary Limited (DNHT Pty) is a Namibian owned company whose shareholders are small-scale mining claim holders specializing in semi-precious and dimension stone mining. The company holds a Mining Claims (69448, 69555 and 69556) License and a Surface Use Agreement (MC 69448) on Farm Otjoruharui No. 251 in Otjozondjupa region. In particular DNHT Pty has, in addition to its semi-precious stone mining activities holds a Mining Claim (MC 69448) for dimension stones and discovered a deposit of Chalcedony Quartz.

Chalcedony is the form of Quartz that is compact and microcrystalline. It occurs in many different forms, colors, and patterns, and many varieties have been used as gemstones since antiquity. In the gemstone trade, the term Chalcedony is often used specifically to describe the white, gray, or blue translucent type of Chalcedony, but its technical term includes all additional varieties.

Chalcedony has been known in the Mediterranean countries since the Bronze Age. Seals made of it have been recovered in excavations of Minoan Crete sites that date to 1800 BCE. It has always been a popular material for the creation of seals, since hot wax doesn't stick to the smooth surface.

Chalcedony is fairly common in Namibia, and found at many locations. It is an associated material of the Okorusu fluorite deposit north of Otjiwarongo, which has been known since the colonial era, and mined since the 1920s.

However, by far the most important deposits are found about 150 kilometres northeast of Okahandja (including on Farm Otjoruharui No. 251), where exceptionally fine, jewellery-grade, semi-transparent blue chalcedony has been mined since 1930. By the 1960s, more than 15 000 kilograms had been exported from that location alone, to become quality carvings, beads and cabochon (polished but not faceted) gems. Namibian chalcedony is still widely held to be the best in the world.

Not realizing the legislative compliance requirement, particularly in respect of the Environmental Management Act No. 7 of 2007, DNHT Pty has been quarrying for Chalcedony Quartz on a section of its Mining Claim 69448 for which the following activities are undertaken:

- Overburden Striping (in this case main sand)
- Stockpiling of Top Soils
- Drilling and Blasting
- Extraction
- Loading and Hauling

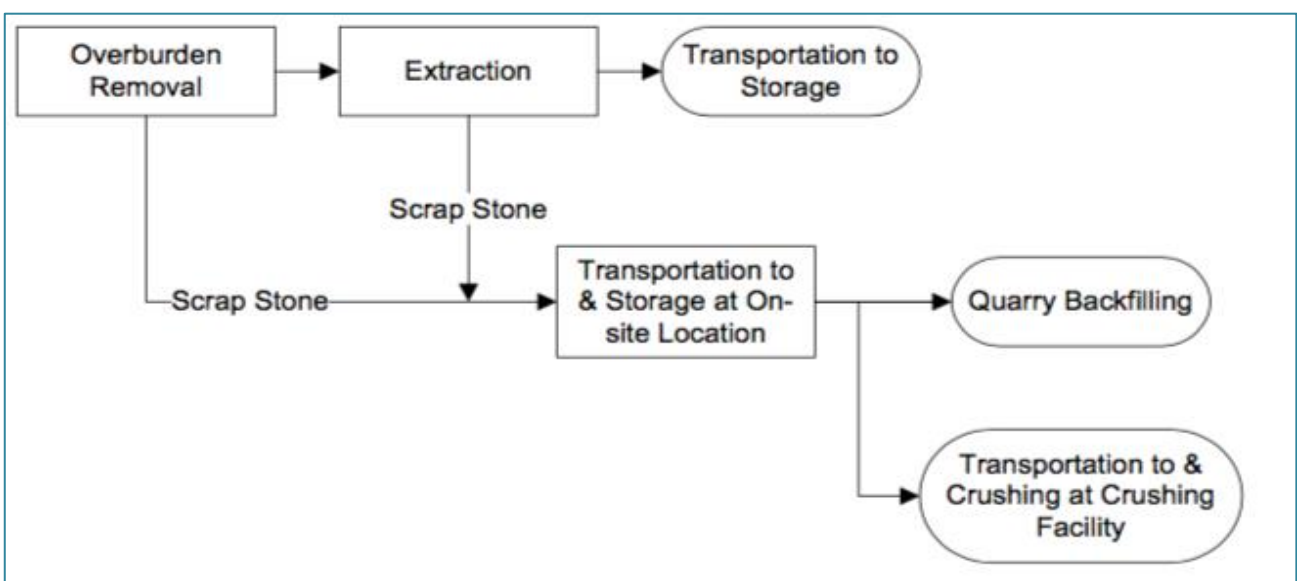


Fig 1: Proces Flow Diagram for dimension stone mining, DNHT engages only in blocks mining for export market

Quarrying is a term used to describe a specialized open-pit mining technique wherein solid rock with a high degree of consolidation and density is extracted from localized deposits (see **Fig 1**, for the detailed process flow). Quarried materials are either crushed and broken to produce aggregate or building stone, such as dolomite and limestone, or combined with other chemicals to produce cement and lime.

In accordance with the provisions of the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 gazetted under the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007), the Stone quarrying activities (Seal mining, processing and transportation) undertaken by DNHT Pty is a Listed Activity and may not be undertaken without an Environmental Clearance Certificate (see **Table 1**).

Table 1: List of activities identified in the EIA Regulations (GG. 4878 R.29 of 2012) which apply to semi-precious and dimension stones mining activities in Namibia

EMA 2007 Legislation	Description of activity	Relevance to DNHT Pty Mine
Activity 3 (3.1 & 3.2) Mining and Quarrying Activities	3.1 The construction of facilities for any process or activities which requires a licence, right or other form of authorisation, and the renewal of a licence, right or other form of authorisation, in terms of the Minerals (Prospecting and Mining Act), 1992. 3.2 Other forms of mining or extraction of any natural resources whether regulated by law or not.	And the construction of facilities for the purpose of carrying out a listed activities The mining or extraction of any natural resources whether regulated by law or not.
Activity 4	4. The clearance of forest areas, deforestation, aforestation, timber harvesting or any other related activity that requires authorisation in term of the Forest Act, 2001 (Act No. 12 of 2001) or any other law.	The clearance of forest areas to allow the mining activity to take place
Activity 9 (9.2) Hazardous Substance treatment, handling or storage	9.2 Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.	The operation of a processing plant in particular this project has the potential for the generation or release of emissions, pollution, effluent or waste.

Therefore, DNHT (Pty) Ltd sought the services of Eviro-Leap Consulting to facilitate the compilation of an Environmental Management Plan for Obtaining the Environmental Clearance Certificate.

1.2 Keeping EMPs up to Date

This Environmental Management Plan (EMP) document is designed to meet legal requirements and avoid or minimise the impacts associated with the implementation of DNHT Pty's mining, processing and transportation.

It is the intention that this EMP should be seen as a "living document" which will be amended during the operation, as the activities might change or new ones be introduced.

Should a listed activity(s) as defined in the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) be triggered (as a result of future modifications/changes at the mine), this EMP will be updated as a result of another EIA process as stipulated in the regulations.

2 ENVIRONMENTAL LAWS AND POLICIES

This section draws information from the legal sources in Namibia, presenting an overview of the most relevant legislation related to impacts that may arise from undertaking of this activity with the aim of informing the applicant of the legal requirements pertaining to the project during its operational phase.

2.1. The Constitution of the Republic of Namibia, 1990

Article 95 of Namibia's constitution provides that:

"The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following:

(l) Management of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular the Government shall provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory."

This article recommends that a relatively high level of environmental protection is called for in respect of natural resources utilization, management, pollution control and waste management.

2.2. Environmental Management Act of Namibia (2007)

The EMA provides a broad definition to the term "*environment*" - land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values.

2.3. Water Act (No. 54 of 1956)

The Act "consolidate and amend the laws relating to the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to make provision for the control, in certain respects, of the use of sea water for certain purposes; for the control of certain activities on or in water in certain areas; for the control of activities which may alter the natural occurrence of certain types of atmospheric precipitation; for the control, in certain respects, of the establishment or the extension of townships in certain areas; and for incidental matters."

It additionally controls the disposal of effluent and makes it a criminal offence to:

"Pollute fresh or sea water in a way that makes the water less fit for any purpose for which it is or could be used by people, including use for the propagation of fish or other aquatic life, or use for recreational or other legitimate purpose."

2.4. Water Resources Management Act (No. 24 of 2004) (Not implemented yet)

The purpose of this Act is to broadly control the use and conservation of water for domestic, agricultural, urban and industrial purposes; to control, in certain respects, the use of sea water; to control certain activities on or in water in certain areas; and to control activities which may alter the natural occurrence of certain types of atmospheric precipitation.

2.6. Pollution Control and Waste Management Bill (guideline only)

Part 7 states that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances.

The competent authority for the purposes of section 74 shall maintain a register of substances notified in accordance with that section and the register shall be maintained in accordance with the provisions. Part 8 provides for emergency preparedness by the person handling hazardous substances, through emergency response plans.

2.7. Public Health Act (No. 36 of 1919)

Section 111 it is the duty of every local authority to take all lawful, necessary and reasonably practical measures for preventing the pollution so as to endanger health of any supply of water within its district and to take measures against any person so polluting any such supply.

Section 119 states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.

Section 132 empowers the Minister to make regulations regarding, inter alia, the drainage of land or premises, the disposal of liquids and the removal and disposal of rubbish, refuse, manure and waste matters as well as regarding the establishment and carrying on of factories or trade premises which are liable to cause offensive smells or effluvia or to discharge liquid or other material liable to cause such smells or effluvia or to pollute streams and prohibiting the establishment or carrying on of such factories in unsuitable localities.

Further, the following (table 1) presents a list of permits that will be required in order for the proponent to be compliant with the law:

Table 2: List of all the applicable permits / authorizations required by DNHT Pty

Aspect	Permits/Certificates/Authorizations	Regulator
Semi-precious and Dimension Stone Mining	Environmental clearance for Infrastructure and Operations	MET*
	Non-exclusive Prospecting License	MME**
	Mining Claim License	MME
Water Abstraction (where applicable)	Water Abstraction Permit - Borehole	MAWF***
Site Access permission	Surface Use Agreement	Farm Owner

Note: * = Ministry of Environment and Tourism, **= Ministry of Mines and Energy, and ***= Ministry of Agriculture Water and Forestry

3 PUBLIC CONSULTATION

The range of environmental issues to be considered in the EMP has been given specific context and focus through consultation with authorities. Included below is a summary of the people consulted, the process that was followed, and the issues that have been identified.

It should be noted that since the facility has been in existence and operation, it was not necessary to conduct a full-scale public consultation process. Therefore consultations were limited to the Ministry of Mine and Energy, and Ministry of Environment and Tourism as competent authorities relating to their authorization needs (Mining Claim Licenses and Environmental Clearance Certificate respectively) and the farm owner of Farm Otjoruharui No. 521 (Surface Use Agreement).

3.1 AUTHORITIES AND INTERESTED AND AFFECTED PARTIES (I & APs)

The following authorities and IAPs are involved in the EIA process:

- National authorities:
Ministry of Environment and Tourism, and Ministry of Mines and Energy, in the case of water abstraction the Ministry of Agriculture, Water and Forestry would be consulted however the project currently meets its water needs through an agreement with the farm owner from an existing borehole also used for livestock.
- IAPs:
The only other registered I & AP, is the Farm Otjoruharui No. 251 owner

3.2 STEPS IN THE CONSULTATION PROCESS

Table 3 below sets out the steps in the consultation process that has been conducted to date.

Table 3: Consultation Process with IA&Ps and Authorities for existing approvals

TASK	DESCRIPTION	DATE
Notification - regulatory authorities and IAPs		
Mining Claim License	Approval for Mining of Semi-precious Stones on MC 69555 & 69556	05 October 2015
Non-exclusive Prospecting License	Approval for Prospecting for Semi-precious and Dimensional Stones on NEPL	11 August 2017
Environmental Clearance Certificate – for MC 69448, 69555 & 69556	Approval to undertake mining activities on the listed Mining Claims, with a focus on semi-precious stones	28 October 2015
Surface Use Agreement	Approval to undertake mining activities on a portion of Farm Otjoruharui No. 251	

Further consultations with the farm owner were held to verify the validity of the surface use agreement for DNHT Pty to be able to conduct their mining activity on Farm Otjoruharui No. 251, in the Okavango District. This was done during the visit to the mining site and the farmer, who was leading the team to the project site, confirmed that an active agreement between the company and him is in place (a copy of the agreement is attached as Appendix B1).

4 PROJECT DESCRIPTION

4.1 PROJECT LOCATION

The DNHT Pty small-scale mine is situated 33 km North-west of Hochfeld, 10 km West of Farm Imkerhof and approximately 3 km south of the C30 road in the Otjozondjupa region (**Fig 2** Location of the site **and Table 4**, GPS coordinates). The exact site is located within distant proximity of two prominent manganese mining operations namely the Otjozundu Mine and Purity operations.

Table 4: GPS coordinates of the DNHT Pty prospecting and mining site

GPS POINTS	LATITUDE	LONGITUDE
DNHT DS MC 69448 Area Point 1	21°14'10.00" S	17° 40'10.80" E
DNHT DS MC 69448 Area Point 1	21°14'11.20" S	17° 40'20.90" E
DNHT DS MC 69448 Area Point 1	21°14'20.20" S	17° 40'25.00" E
DNHT DS MC 69448 Area Point 1	21°14'10.10" S	17° 40'50.50" E

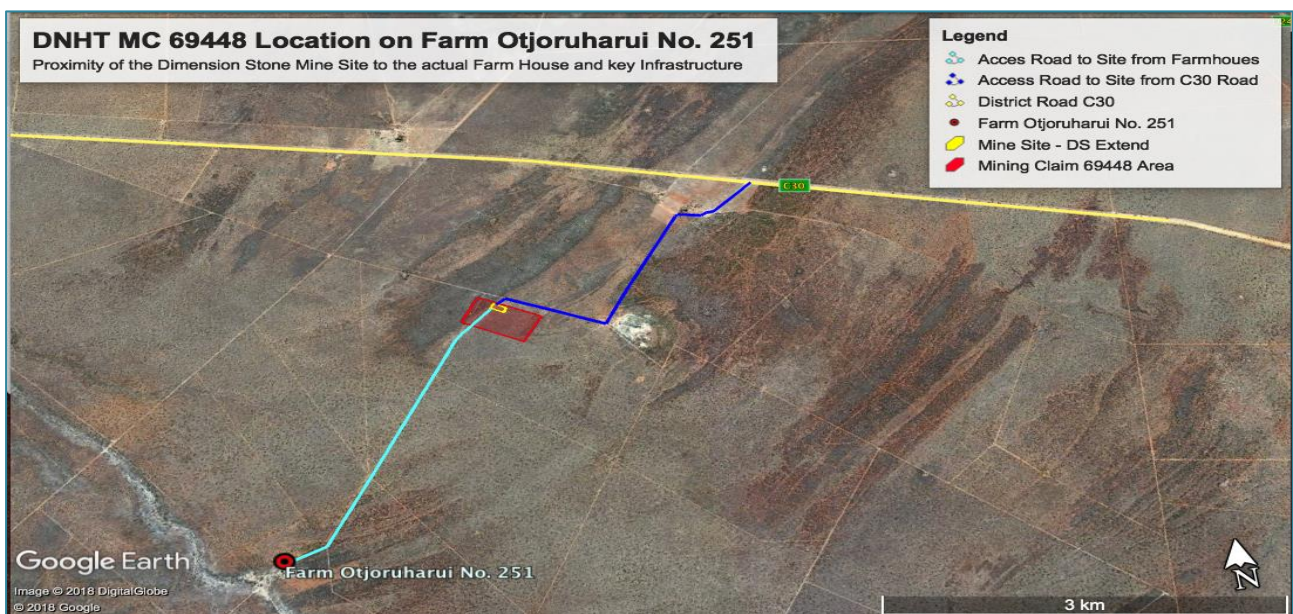


Fig 2: Locality Map of DNHT Pty's mining site on Farm Otjoruhari No 251, also depicted is the alternate access routes

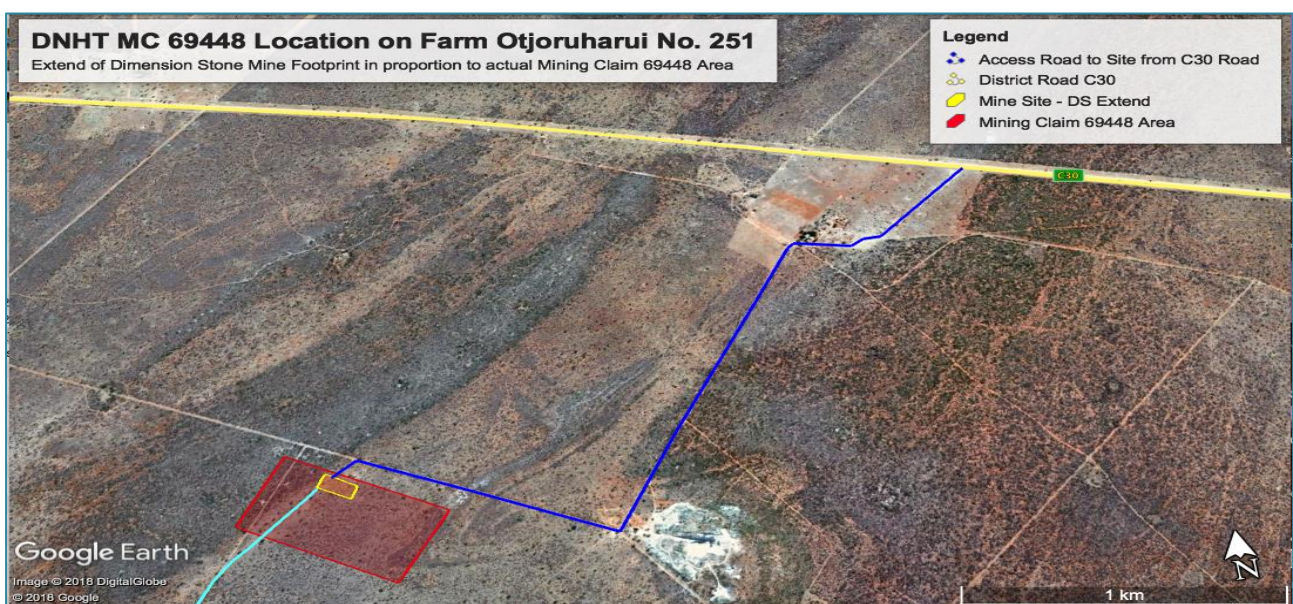


Fig 3: Current DNHT Pty's mining activity extend / footprint (yellow block) in proportion to the approved mining claim area

4.2 BASELINE DATA ON AFFECTED ENVIRONMENT AND PROPOSE PROJECT

4.2.1 BASELINE OF THE RECEIVING ENVIRONMENT

Geographic and Demographic

The Otjozondjupa Region (figure 3.1) is situated northeast of the capital of Windhoek and spans 105,460 km² and a low population of approximately 144,000 people (0.73 persons/km²) (Namibia Statistics Agency 2011). The region is predominately characterized by grassland and sparsely vegetated shrubland, and scattered small areas of closed canopy forest. The land tenure is predominantly privatized, except for the community lands in northeast districts. Land use is mostly rangeland cattle farming, much of it being intensive commercial cattle farming, grain production, and a large proportion of smallholder subsistence agriculture mainly in the communal lands (King et al. 2011, Gilolmo and Lobo 2016). Namibia is naturally the most arid country in sub-Saharan Africa, and prolonged droughts are well-known occurrences, which is projected to increase and become more unpredictable in the future (Ziedler 2010).

Climatic baseline

The summer months (December – February) are hot, with temperatures of up to 40 °C, while daytime temperatures are pleasant during the winter months (June – August). Winter nights are generally cool and sub-zero temperatures are not uncommon. The region's mean annual rainfall amounts to about 400 mm. About 85% of total annual rainfall is recorded between November and March (Fig 4). The prominent winds rises from the north-easterly direction reaching average speed of between 5 km/h and 20 km/h (Fig 5).

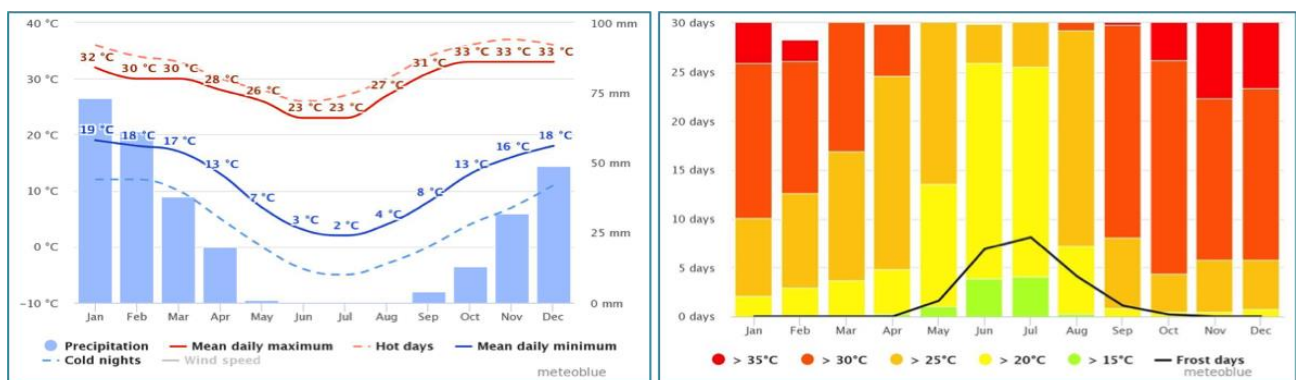


Fig 4: Combined graph of annual average minimum and maximum temperature, precipitation and number rainy days in proximity of the project site (Imkerhof Farm).

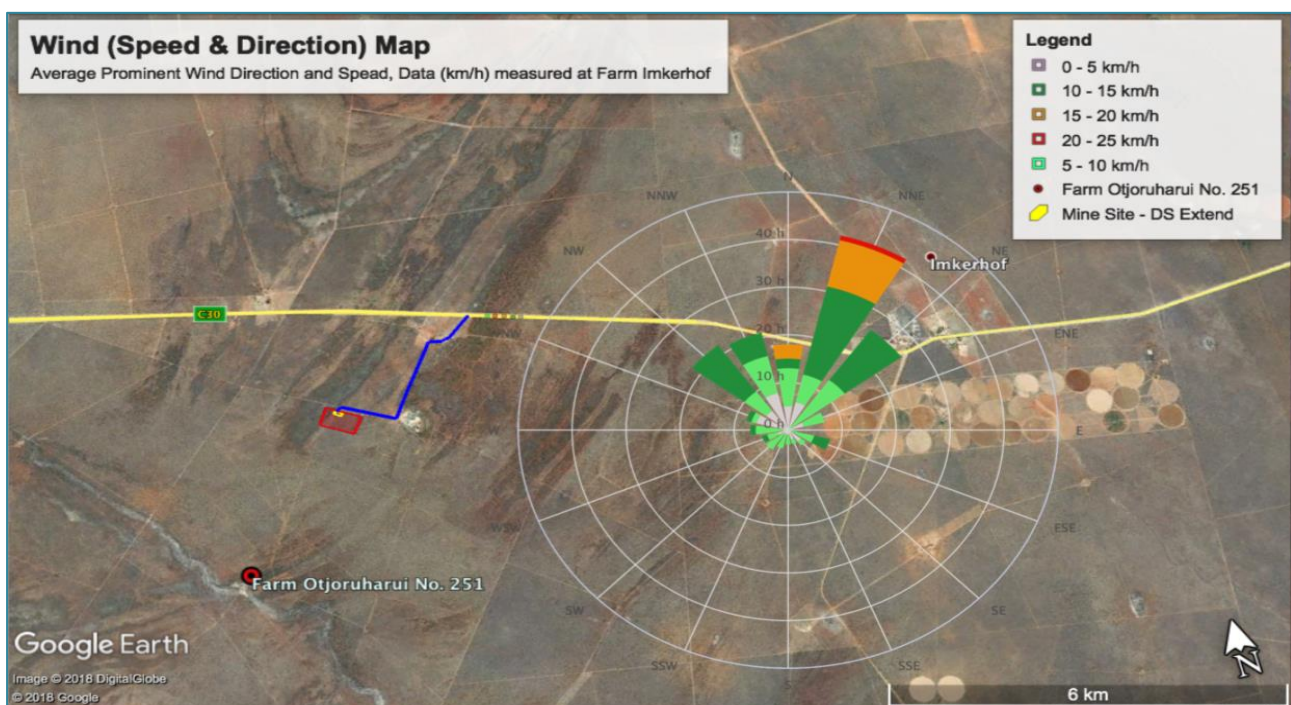


Fig 5: Map of Wind-Rise Direction and Speed (at Imkerhof Farm, situated 10 km east of the Farm tjoeruhari)

Topography, geology and Soils

The two regions lie on the western edge of a vast basin of sand, and it is this sand that determines much about the vegetation, wildlife, farming and mineral potential of the region. Groundwater is generally available throughout both regions, and the quality of water is also generally good. Higher yielding aquifers are present in several areas: around Grootfontein, Leonardville, Hochfeld and in the Eiseb. The site topography is flat with no water catchment streams, tributary or rivers observed, implying that most of the rain falling on the surface infiltrates directly into the Kalahari sandy soil.



Fig 6: Common soil and geological material observed at the project site, predominantly consisting of the Cenozoic sediments, Precambrian rocks and Neo-Proterozoic rocks.

Biophysical (Vegetation and Wildlife)

The eastern two-thirds of the Otjozondjupa Region is dominated by savannas characteristic of Kalahari Sands, with more broad-leaf deciduous trees in the north and more thorny species in the south. The western parts are covered in thorny species growing on rockier, shallow soils. These areas are the most degraded in the country as a result of bush encroachment. This problem is largely and directly due to a lack of fires in areas used for livestock farming; farmers prevent fires and there is little grass to burn anyway because of heavy grazing.

Thirty mammal species have been identified on and below the plateau within the Otjozondjupa region. Plateau mammals include leopard *Panthera pardus*, cheetah *Acinonyx jubatus*, caracal *Felis caracal*, eland *Taurotragus oryx*, wildebeest *Connochaetes taurinus* and introduced giraffe *Giraffa camelopardalis*, white rhinoceros *Ceratotherium simum* (breeding), black rhinoceros *Diceros bicornis bicornis*, buffalo *Syncerus caffer*, roan antelope *Hippotragus equinus*, sable antelope *H. niger*, hartebeest *Alcelaphus buselaphus*, klipspringer *Oreotragus oreotragus*, topi *Damaliscus lunatus*, impala *Aepyceros melampus*, and duiker *Cephalophus* spp.



Fig 7: Shows the most common type of vegetation on the project site, consisting of savannah characterized woody species well adapted to the sandy Kalahari sands (the invasive *Acacia melifera* is observed)

There is much more wildlife on freehold farms than in parks or any other areas of the country. This is largely due to the value and use of wildlife by freehold farmers. Low densities of wildlife in the eastern communal areas are the result of hunting, low levels of protection and the poor nutrient status of the Kalahari Sands that cover almost all the communal areas. There are approximately 60 tree species in the region and the plateau features broad-leaved tree shrub savannah habitat dominated by *Terminalia sericea*, *Burkea africana*, *Combretum collinum*, *C. psidioides* and *Peltophorum africanum*.

Isolated grass savannah valleys are dominated by *Antheaphora pubescens* and *Eragrostis superba*. A dense *Acacia* shrub, *A. mellifera detinens*, is found below the plateau. Flame lily *Gloriosa superba*, white bauhinia *Bauhinia petersiana*, the quasi endemic *Cheilanthes dinteri* and ten fern species are found, including *Microlepidia speluncae*. The Otjozondjupa has the third highest volume of woody standing stock in Namibia at 16%.

4.2.2 OPERATIONAL PHASE

Given the small-scale nature of operations, DNHT adopts the marble quarrying technique as the preferred mining method. Dimension stone / rock composed of calcium-magnesium carbonate, which forms due to the high pressure and heat resulting in recrystallized material. Often, dimension stones such as marble occurs in metamorphic rocks which can be mica schists, phyllites, gneisses, and granulites. Some marbles can consist of lime or magnesia silicates minerals, hence the use of rock explosives are limited due to the danger of breaking the rock. Therefore making cuts is regarded an easy way of splitting See illustration in **Fig 8**.



Fig 8: Shows the stockpile of overnuden consisting of both the soft topsoils and the rock materials stored separately in favor of the rehabilitation process once mining is completed.

The process is essentially continuous with extraction and haulage steps running in series, as discontinuous process of drilling and blasting is required prior to the loading and hauling stages. It uses a variety of different types of equipment including shovels, trucks, draglines, bucket wheel excavators and scrapers.

Blasting:

Dimension stone quarrying is the multistage process by which marble rock is extracted from the quarry ground. For easy extricating of marble from the quarry, a monthly (or otherwise as needed) blasting process with explosive material processed through blasting compressors machines is carried out during the coolest hours of the day i.e. limited to hours between 16h00 and 17h00, weekdays. After this process, rock leaves the quarry floor.

Extracting block through wire saw:

Dimension stones are often hard, hence it needs extracting through wire saw, chain saw or diamond wire saw. In this process, chain saw or wire saw leaves cut between the blocks. This machine can perform both vertical and horizontal cuts. Both dry and wet cutting also can be done, however due to the need to reduce the operational water demands, and conservation of water thereof DNHT Pty adopted the dry cutting. DNHT Pty is cognisant of the potential dust pollution associated with dry cutting and thus wind speed and direction are regularly monitored.

Creating space between blocks:

Air pressure bag is used for create space between blocks after cut the blocks from the quarry. It creates very strong core force to blocks; by force stone blocks get separate. Security is very crucial phase while using air pressure bag.

Transporting Blocks:

After quarrying the blocks, the backhoe loader and excavator lifting equipment are used for transporting the blocks. Plans are that mobile and stable cranes are acquired and used for lifting and loading the blocks as the business expands.

4.2.3 OPERATIONAL INFRASTRUCTURE

Onsite infrastructure at the site consist of a 19 ha Mining Claim area of which 1 ha (Although the actual Chalcedony Quartz pit's footprint is only 0.39 ha) is fenced off, necessary to exclude entry of both livestock, wildlife and unauthorised personnel to the site and thus ensuring good safety and security to all as see in **Fig 9**.



Fig 9: Mine site with the key infrasturcture depicted in the background i.e. site fence and entry gate, raised fuel storage

Due to its small-scale nature of mining and with only man employed at the project, the current housing infrastructure consist of tented accommodation (which will be converted to corrugated iron sheet structures), boosting two Pit latrine toilets and bathing facility.

Water for both domestic and operational use is sourced from the main farm boreholes and supplied by truck on a weekly basis (1000 litres) and currently stored in an equivalent sized tank, however plans are to expand storage capacity to 5000 litres month supply. Energy is supplied by 5 Watt diesel powered generator, used mainly for food preservation and lighting at the lodging facility, while for cooking the energy needs are met use of gas. The diesel supply for the earthmoving equipment is stored in raised 4500 litres capacity tanks (**Fig 10**) and is also brought in by truck to the project site on pre-existing farm tracks.



Fig 10: Shows the tented camp (left) and one of the Pit-latrine toilet facility (right)

5 ENVIRONMENTAL IMPACTS AND MANAGEMENT PLAN

5.1 OVERALL OBJECTIVES OF THE EMP

The following overall environmental objectives have been set for the DNHT Pty's small-scale mining project:

- To comply with national legislation and standards for the protection of the environment.
- To limit potential impacts on biodiversity through the minimisation of the footprint (as far as practically possible) and the conservation of residual habitat within the mine area.
- To keep surrounding communities informed of farming activities through the implementation of forums for communication and constructive dialogue.
- To ensure the legal and appropriate management and disposal of general and hazardous waste, through the implementation of a strategy for the minimisation, recycling, management, temporary storage and removal of waste.
- To develop, implement and manage monitoring systems to ensure good environmental performance in respect of the following: ground and surface water, air quality, noise and vibration, biodiversity and rehabilitation.

5.2 METHODS OF IMPACT SCOPING / ASSESSMENT

As part of the Scoping and EMP processes for the DNHT Pty's Mine, environmental aspects and potential environmental impacts associated with the activities and facilities were identified. Detailed DNHT Pty activities associated with the operation shall be described in section of this EMP. Table 4 provides a description of the environmental aspects that are associated with DNHT Pty Mine's operations and how they impact the biophysical and human environments, respectively.

Both the criteria used to assess the impacts and the method of determining the significance of the impacts is outlined in **Table 5**. This method complies with the method provided in the Namibian EIA Policy document and the draft EIA regulations. Part A provides the approach for determining impact consequence (combining severity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D. Both mitigated and unmitigated scenarios are considered for each impact.

Table 5: Criteria for Assessing Impacts

PART A: DEFINITION AND CRITERIA		
Definition of SIGNIFICANCE	Significance = consequence x probability	
Definition of CONSEQUENCE	Consequence is a function of severity, spatial extent and duration	
Criteria for ranking the SEVERITY/NATURE of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreplaceable loss of resources.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favorable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of Impacts	L	Localized - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

PART B: DETERMINING CONSEQUENCE

SEVERITY = L

DURATION	Long term	H	Medium	Medium	Medium
	Medium term	M	Low	Low	Medium
	Short term	L	Low	Low	Medium

SEVERITY = M

DURATION	Long term	H	Medium	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Low	Medium	Medium

SEVERITY = H

DURATION	Long term	H	High	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Medium	Medium	High

Localized Within site boundary	Fairly widespread Beyond boundary Local	Widespread beyond boundary Regional/ national	Far site
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SPATIAL SCALE

PART C: DETERMINING SIGNIFICANCE

PROBABILITY (of exposure to impacts)	Definite/ Continuous	H	Medium	Medium	High
	Possible/ frequent	M	Medium	Medium	High
	Unlikely/ seldom	L	Low	Low	Medium

L	M	H
---	---	---

CONSEQUENCE

PART D: INTERPRETATION OF SIGNIFICANCE

Significance	Decision guideline
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

*H = high, M= medium and L= low and + denotes a positive impact.

5.2 IMPACT SCOPING / ASSESSMENT

5.2.1 HAZARDOUS AND WASTE GENERATION / DISPOSAL

5.2.1.1 ASSESSMENT OF IMPACT: HAZARDOUS (FUEL & LUBRICANTS) WASTE DISPOSAL

The potential impact from fuel and lubricants resulting from the servicing of machineries and storage of fuels on the project site could present a risk to the underground water sources. This could potentially occur through the contamination of soil with hydrocarbons and if management of such is poor.

However, the project location is situated in a flat terrain with no natural watercourse such as streams, channels and rivers and thus contamination of soils is highly localised due to no or little surface runoff during rain events.

Tabulated Summary of Assessed Impact – spillage and disposal of hazardous waste

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	L	L	M	L	M
Mitigated	L	L	L	L	L	M

CONCEPTUAL DESCRIPTION OF MITIGATION MEASURES

Storage of fuel (diesel) on site should be done in a raised storage facility contained in a concrete wall and floor to reduce possible spillage of diesel and drainage into the ground. Any machinery servicing must as well not be conducted on the project unless in an emergency situation, in which case all fuel and lubricants should be collected and disposed off at an authorised waste disposal site I the nearby town e.g. Okahandja or Windhoek.

5.2.1.2 ASSESSMENT OF IMPACT: DOMESTIC SOLID AND EFFLUENT DISPOSAL

The disposal of domestic waste from the staff lodging facility may, if not properly managed contribute to littering of the surrounding environment. It may further lead to pollution of the aesthetic value of the wilderness and negatively impact the tourism potential of the area. Hence, disposal of domestic waste should not be permitted on site unless temporarily stored onsite and transported to registered disposal sites.

Tabulated summary of the assessed impact – pollution of environment with domestic litter

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	M	L	M	M	M
Mitigated	L	L	L	L	L	L

CONCEPTUAL DESCRIPTION OF MITIGATION MEASURES

Reduce waste production as much as possible by recycling waste material that can be recycled. Classify waste and transport those which cannot be reused / recycled material to a suitable disposal facility. Scavengers must not be able to enter the temporary waste storage facility the waste may be hazardous and present a health hazard / risk to both human and wildlife such as baboons etc.

5.2.1.3 ASSESSMENT OF IMPACT: CONTAMINATION OF SOILS AND UNDERGROUND WATER

The potential impact from fuel and lubricants resulting from the servicing of machineries and storage of fuels on the project site could present a risk to the underground water sources. This could potentially occur through the contamination of soil with hydrocarbons and if management of such is poor.

However, the project location is situated in a flat terrain with no natural watercourse such as streams, channels and rivers and thus contamination of soils is highly localised due to no or little surface runoff during rain events.

Tabulated summary of the assessed impact – contamination of soil and underground water

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	M	L	M	M	M
Mitigated	L	L	L	L	L	M

CONCEPTUAL DESCRIPTION OF MITIGATION MEASURES

Storage of fuel (diesel) on site should be done in a raised storage facility contained in a concrete wall and floor to reduce possible spillage of diesel and drainage into the ground. Any machinery servicing must as well not be conducted on the project unless in an emergency situation, in which case all fuel and lubricants should be collected and disposed off at an authorised waste disposal site I the nearby town e.g. Okahandja or Windhoek.

5.2.2 AIR AND NOISE POLLUTION

5.2.2.1 ASSESSMENT OF IMPACT: AIR POLLUTION

Dust from mining activities is typically caused by blasting and haulage activities. While they are minimal and thus seldom harmful to human health, they may be offensive and result in a nuisance impact and in some cases impact on the vegetation by covering the transpiration spores on the plant leaves.

However, because the mining scale is small, the potential impacts are expected to be generally low. In addition, the prevailing winds will disperse Dust away from any sensitive receptors (see **Fig 4**) which in addition to mitigation measure reduces the health risk associated with Dust.

Critically, the nuisance impact of potentially offensive Dust cannot be discounted if the normal operation regime is upset and mining is not conducted in the desired manner, or should Dust control mechanisms are not employed appropriately. In this case, the impact may be significant.

Tabulated Summary of the Assessed Impact – Release of Dust into the Atmosphere

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	M	H	L	M	H	M
Mitigated	L	M	L	L	M	L

CONCEPTUAL DESCRIPTION OF MITIGATION MEASURES

Dust is subjective and dependent on difference in public perception, therefore there is no dedicated Dust-monitoring programme developed other than an incident register. Hence, a stakeholder committee should be established to log and attend to Dust complaints. Importantly, the record of complaints should include the date and time so that it may be associated with the Dust generating activity. This will aid the identification of the Dust source (or activity) and required management intervention devised to eliminate the activity as a future source.

5.2.2.2 ASSESSMENT OF IMPACT: NOISE POLLUTION

Potential noise generation impacts identified could be associated primarily to the use of explosive during blasting and secondarily to machineries used throughout the mining process and lifespan of the project. However, given the small scale of operation by DNHT Pty, blasting activities are limited to two every six-month, while the secondary noise generating activity is considered to only be a concern on windy days. Additionally, the location of the mining site is well placed that the only nearest receptor is about 3 km away from the project site, therefore noise may only impact on wildlife that may wonder in close proximity to the site.

With blasting activity occurring only four time a year, in which case prior notifications to any nearby receptors should be given on the exact date and time at which blasting shall be conducted.

The significance of impacts on air quality as a result of dust generation from the DNHT Pty Mine is expected to be none or very Low. As the direction of dispersion with the prevailing winds will be away from any sensitive receptors and the predicted concentrations are well below the interim target values, the impact of PM10 from the dust fallouts on vegetation is also expected to be low.

Tabulated Summary of the Assessed Impact – Generation of noise from operations (Machinery and Blasting)

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	L	L	L	L	L	L
Mitigated	L	L	L	L	L	L

CONCEPTUAL DESCRIPTION OF MITIGATION MEASURES

Noise is subjective and dependent on difference in public perception, therefore there is no dedicated noise-monitoring programme developed other than an incident register. Hence, in addition to Dust monitoring the stakeholder committee should be tasked to log and attend to noise complaints as well. Therefore, the record of complaints should also include the date and time so that it may be associated with the noise generating activity. This will aid the identification of the noise source (or activity) and required management intervention devised to eliminate the activity as a future source.

4.2.3 SOCIO-ECONOMIC ASPECTS

5.2.3.1 ASSESSMENT OF IMPACT: SOCIAL INTRUSION

The activities associated with the DNHT Pty Mine Seal processing have socio-economic impacts in all phases – some positive and some negative. These impacts related to amongst others employment/job creation, local and regional economies, land use and surrounding landowners and community safety and security. During the operation phase DNHT Pty may at a minimal provide seasonal job opportunities to the local community.

Tabulated Summary of the Assessed Impact – Socio-Economic Impacts

Mitigation	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
Unmitigated	H+	L	L	L	L	L
Mitigated	H+	M	M	H+	M	H

CONCEPTUAL DESCRIPTION OF MITIGATION MEASURES

Preparation of a health and safety plan for workers and impacted communities addressing issues including education on measures to prevent the spread of HIV/AIDS through awareness campaigns, provision of safety equipment for workers, child labor prohibited

5.3 CONCLUSIONS AND RECOMMENDATIONS

Potential impacts (Socio-economic, Generation of Effluent and Waste, and Ambient Air Pollution) were identified as a key environmental issue through the scoping process. Dust, which are a nuisance rather than a classic air pollutant, may emanate from different areas of the plant including the animal preparation area, from meat processing, skin and blubber splitting, skin cleaning and organ processing and from the storage of animal. Effluent and Waste (Solid and Bio Waste) are the other key environmental issue identified.

Nonetheless, all identified impacts are considered to be localized, short-medium term and minor due to the nature of the seal industry, where impacts are limited to few months of the year. These months present an advantage that winds are strong during these periods, aiding the control of Dust, while the mitigation measures proposed allows for the pre-treatment of the effluent to standards that it can then be used for gardening and not discharged into the municipal sewerage system.

It is thus recommended that the Office of Environmental Commissioner issues an Environmental Clearance on condition that all proposed measures will be implemented and adhered to. Further, the proponent shall commission for a formal design of an effluent treatment facility with the capacity to treat the total daily effluent from the factory.

The additional capacity for storage of recycled water is necessary to allow the proponent to store water in case of access output of pre-treated water from the treatment facility.

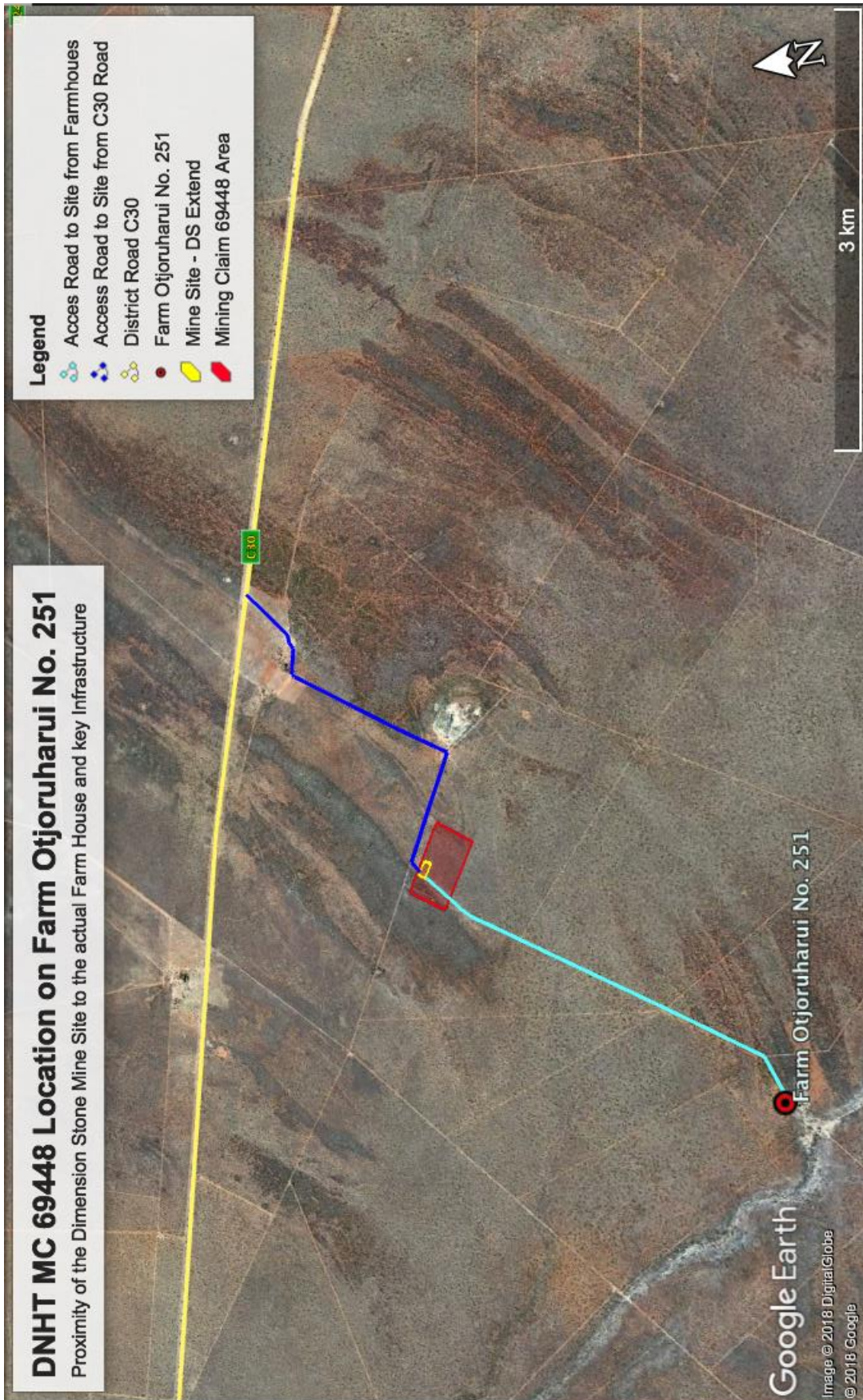
REFERENCES

- Department of Water Affairs and Forestry, 2001. Groundwater in Namibia: An explanation to the hydrogeological map. *MAWRD*, Windhoek, 1, 128 pp.
- Directorate of Environmental Affairs, 2008. Procedures and Guidelines for Environmental Impact Assessment (EIA) and Environmental Management Plans (EMP), Directorate of Environmental Affairs, Ministry of Environment and Tourism, Windhoek. Klock H; 2001; Hydrogeology of the Kalahari in north-eastern Namibia with special emphasis on groundwater recharge, flow modelling and hydrochemistry
- Colorado Department of Public Health and Environment (CDPHE). (2002): SCREEN3 Stationary Source Modeling Guidance, Colorado Department of Public Health and Environment - Air Pollution Control Division (CDPHE/APCD) Technical Guidance Series: Air Quality Modeling, January 1, 2002.
- Enviro Dynamics, (2013): Background Information Document (BID), Proposed seal processing plant in Luderitz, September 2013.
- Environmental Legislation Project, 2001. Baseline Review - Pollution Control and Waste Management Legislation in Namibia. Directorate of Environmental Affairs, Ministry of Environment & Tourism
- European Commission (2005): Integrated Pollution Prevention and Control, Reference Document on Best Available Techniques in the Slaughterhouses and Animal By-products Industries, May 2005, <http://eippcb.jrc.ec.europa.eu/reference/sa.html>
- Government Gazette, 27 December 2007. No. 3966, Act No. 7, 2007 Environmental Management Act 2007.
- Mendelsohn, J., Jarvis, A., Roberts, C. & Robertson, T. 2003. Atlas of Namibia. David Phillips Publisher. Cape Town.
- Ministry of Environment and Tourism, 2002 Atlas of Namibia. Comp. J. Mendelsohn, A. Jarvis, T. Roberts and C. Roberts, David Phillip Publishers, Cape Town.
- IFC, (2007): Environmental Health and Safety Guidelines, General EHS Guidelines: Environmental, Air Emissions and Ambient Air Quality, April 30 2007.
- Pulfrich, A., (2010). Environmental Impact Assessment for the Proposed Seismic Surveys in the Central Walvis Basin and Southern Orange Basin Areas, Namibia. Marine Faunal Assessment. Prepared by Pisces Environmental Services (Pty) Ltd for CCA Environmental (Pty) Ltd on behalf of HRT Oil & Gas and Universal Power Corp.
- World Bank Group, (1998): Pollution Prevention and Abatement Handbook, General Environmental Conditions and Summary of Air Emissions and Effluent Discharge Requirements, July 1998.
- World Health Organisation, (2005): WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide, Global update 2005, WHO/SDE/PHE/OEH/06.02.

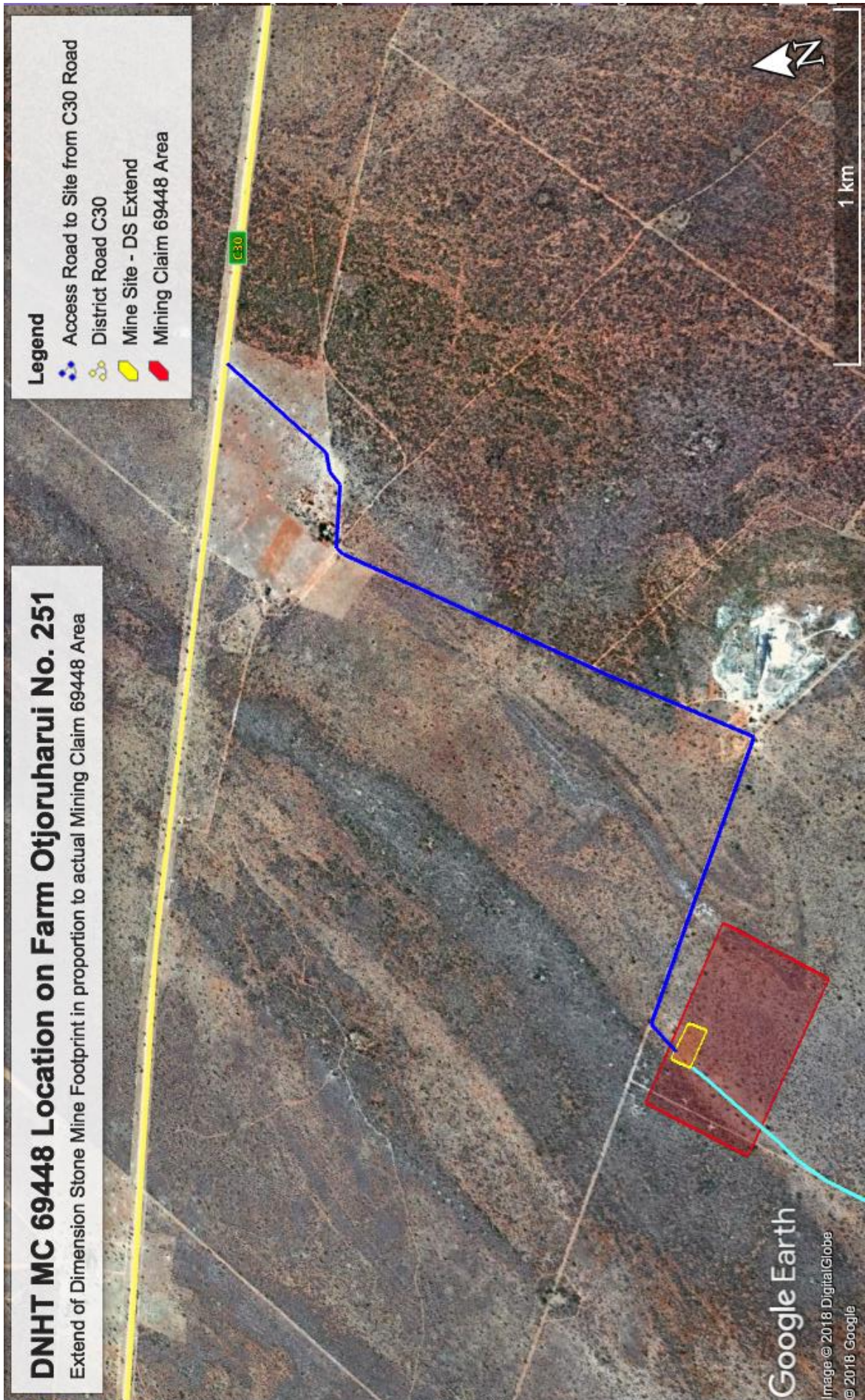
APPENDICES

APPENDIX A: MINE SITE LOCATION MAPS

APPENDIX A1: MINE LOCATION



APPENDIX A2: EXTEND OF ACTUAL MINING FOOTPRINT (0.39 Ha) IN PROPORTION MINING CLAIM AREA



APPENDIX B: PROOF OF CONSULTATION WITH RELEVANT STAKEHOLDER AND AUTHORITIES

APPENDIX B1: EXTRACT OF THE SURFACE USE AGREEMENT BETWEEN FARM OWNER AND DNHT PTY

1. PARTIES

The Parties to this Agreement are:

- 1.1. **DNHT INVESTMENTS (PROPRIETARY) LIMITED**, registration number 2013/1033, a private company with limited liability incorporated under the law of Namibia, with its registered office at Erf 278, Katjijere Street, Okakarara.
- 1.2. **JOHANN THIESSEN**, identity number 87050200077, a major male farmer residing at Farm No. 251 Otjoruharui, District of Okahandja.

2. DEFINITIONS AND INTERPRETATION

- 2.1. In this Agreement the following words and expressions shall have the following meanings:
 - 2.1.1. **"Accessory Works"** has the same meaning as in the Minerals Act, 1992;
 - 2.1.2. **"Adjacent Farm"** means farm Otjimbuku No 132
 - 2.1.3. **"Agreement"** means this document, and includes the Schedules;
 - 2.1.4. **"Claim"** means Mining Claim No. 69448 granted, registered and issued by the Ministry to the Claim Holder in terms of the provisions of the Minerals Act, 1992;
 - 2.1.5. **"Claim Area"** means the area of land which has been pegged as a Mining Claim in accordance with section 28 of the Minerals Act, 1992 as schematically depicted in the official Ministerial documents evidencing the Mining Claim from time to time;
 - 2.1.6. **"Claim Holder"** means DNHT Investments (Proprietary) Limited;
 - 2.1.7. **"Compensation"**, for the purposes of this Agreement, principally means compensation payable by a mineral licence holder to a private land owner as contemplated in Section 31 (2) read with section 52 (1) (a) of the Minerals Act, 1992 and therefore means, with reference to this Agreement, the agreed amounts payable by the Claim Holder to the Owner in terms of the provisions of clause

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REPUBLIC OF NAMIBIA
MINISTRY OF MINES AND ENERGY
Office of the Mining Commissioner

CERTIFICATE OF REGISTRATION OF MINING CLAIM(S)
 (Registered and issued in terms of Section 36(1)(a) and (c) of the Minerals (Prospecting and Mining) Act 1992, (Act 33 of 1992) ("the Act"))

Reference No.: **14/2/2/1/2/6966**

Registered holder of mining claims (full names): **DNHT INVESTMENTS (PTY) LTD**

Address: **ERF NO: 278, OKAKARARA**

Postal Address: **PO BOX 18, OKAKARARA**

Office: N/A	Home: N/A	Fax 067-317112	Cell: 0812929428
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Date of Registration: 28 OCTOBER 2015	Date of Expiry (after 3 years): 27 OCTOBER 2018
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PARTICULARS OF MINING CLAIM(S):

Ordinal No's	Registered No's	Date Pegged	Group(s) of/Mineral(s)
2	69555	07 AUGUST 2015	SEMI-PRECIOUS STONE
3	69556	07 AUGUST 2015	

PARTICULARS OF FARMS:

Name	No.	Owner	Reg. Division	Magisterial District	Region
OTJORUHARUI	251	MR J THIESEN	J	OKAHANDJA	OTJOZOND.

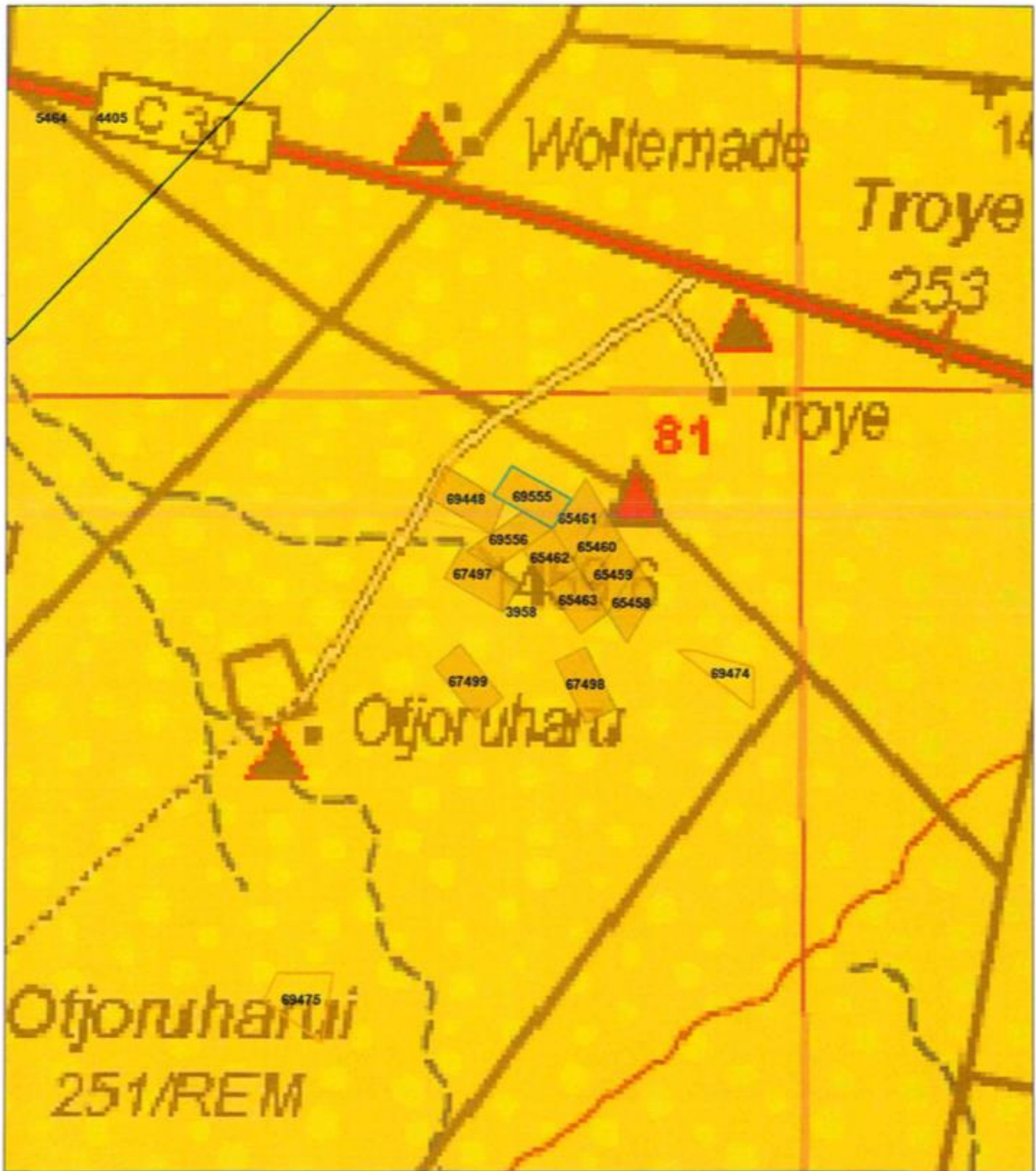
* Sketch map(s)/diagrams of the registered mining claims attached hereto.

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Code	Name	Parties	Type	Commodities	Status Group	Status	Application Date	Grant Date	Expiry Date	Map
6966	NEPL-6966	DNHT INVESTMENTS (PTY) LTD (100.00%)	NEPL		Active	Active		29/04/2015	28/04/2016	
69448	MC-69448	DNHT INVESTMENTS (PTY) LTD (100.00%)	MC	DS, SPS	Active	Active	05/03/2015 00:00:00	12/06/2015	11/06/2018	Nam Otjoz
69555	MC-	DNHT INVESTMENTS (PTY) LTD (100.00%)	MC	SPS	Active	Active	11/08/2015 00:00:00	28/10/2015	27/10/2018	Nam Otjoz
69556	MC-	DNHT INVESTMENTS (PTY) LTD (100.00%)	MC	SPS	Active	Active	11/08/2015 00:00:00	28/10/2015	27/10/2018	Nam Otjoz





MINISTRY OF MINES
 AND ENERGY
 MINING COMMISSIONER
 01 DEC 2015
 Private bag 13297
 F1 9000 WINDHOEK
 OFFICIAL



REPUBLIC OF NAMIBIA
MINISTRY OF MINES AND ENERGY

NON EXCLUSIVE PROSPECTING LICENCE

(Issue in terms of Section 21 of the Minerals (Prospecting and Mining Act, 1992 (Act 33 of 1992))

Non Exclusive Prospecting Licence Nr: **6966** Office Reference No. **14/2/1/1/6966**

1. LINCENCE is hereby granted to: **DNHT Investments (Pty) Ltd**

A company registered, in terms of Section 18 (2)(ii), with company registration Number **2013/1033** , and licensee details as follow:

Registered Address; Erf 278, Ketjijere St., Okakarara, Otjozondjupa, Namibia

Postal Address: P.O. Box 18, Okakarara, Otjozondjupa, Namibia

1st Tel no: **264812858024**, 2nd Tel No: **264812211492**, **264812929428**, Fax No: **26467317112**

Directors	Full Names	Nationality
1.	Unanisa Hei	Namibian
2.	Amanias Uahuhipirapi	Namibian
3.	Niclaas Merukiruamuani Kavetumunisa	Namibian
4.	Richard Tjizu	Namibian

- (i) to carry on, subject to the provisions of Sections 16(2)(a),(b), and Section 16(3), prospecting operations for any mineral or group of minerals (excluding source material in terms of Section 16(2)(f)), on any land other than land stipulated in terms of Section 16(2) (c), (d) and (c) and Section 122(1), and
 - (ii) subject to the provisions of Section 16(1)(b) and (c), and (5) to remove from such land any mineral or group of minerals from the place where it was found on incidentally won in the course of such prospecting operations,
 - (iii) subject further to the following terms and conditions:
 - (iv) The holder of this licence is entitled to peg claims in accordance with and subject to the provision of Section 25 and Part VI of the Minerals (Prospecting and Mining) Act, 1992.
2. This licence is valid for a period of **1 Year**, from **28 April 2016** to **27 April 2017** and shall not be transferred or renewed, nor shall any interest in the licence be granted, ceded or assigned to any other person whether in whole or in part.

Windhoek, at **28/04/2016**

.....
(DATE)






**REPUBLIC OF NAMIBIA
MINISTRY OF MINES AND ENERGY**

NON EXCLUSIVE PROSPECTING LICENCE

(Issue in terms of Section 21 of the Minerals (Prospecting and Mining Act, 1992 (Act 33 of 1992))

Non Exclusive Prospecting Licence Nr: **6966** Office Reference No. **14/2/1/1/6966**

1. LICENCE is hereby granted to: DNHT Investments (Pty) Ltd
A company registered, in terms of Section 18 (2)(ii), with company registration Number **2013/1033** , and licensee details as follow:
Registered Address: Erf 278, Ketjijere St., Okakarara, Otjozondjupa, Namibia
Postal Address: P.O. Box 18, Okakarara, Otjozondjupa, Namibia
1st Tel no: 264812929428 2nd Tel No: Fax No:


Director’s Name: Niclaas Kavetamanisa	Nationality: Namibian
Degree Uahipurapi	Namibian
Uananisa Hei	Namibian

- (i) to carry on, subject to the provisions of Sections 16(2)(a),(b), and Section 16(3), prospecting operations for any mineral or group of minerals (excluding source material in terms of Section 16(2)(f)), on any land other than land stipulated in terms of Section 16(2) (c), (d) and (c) and Section 122(1), and
 - (ii) subject to the provisions of Section 16(1)(b) and (c), and (5) to remove from such land any mineral or group of minerals from the place where it was found on incidentally won in the course of such prospecting operations,
 - (iii) subject further to the following terms and conditions:
 - (iv) The holder of this licence is entitled to peg claims in accordance with and subject to the provision of Section 25 and Part VI of the Minerals (Prospecting and Mining) Act, 1992.
- 2. This licence is valid for a period of 1 Year, from 11 August 2017 to 10 August 2018 and shall not be transferred or renewed, nor shall any interest in the licence be granted, ceded or assigned to any other person whether in whole or in part.**

Windhoek, at 11/08/2017
.....
(DATE)



APPENDIX C: EAP PROFILE & RESUME

PROFESSIONAL RESUME	
VILHO PANDEINGE MTULENI • ID: 701119 0034 4	
Profession: Environmental Assessment Practitioner Postal Address: P. O. Box 686 • Windhoek, Namibia, 9000 Mobile: +264 - 81 2326843 • Code B Drivers license • Single • No criminal record Email: vilhomsnake@gmail.com or vilho.mtuleni@sasscal.org	
	
EDUCATION BACKGROUND	
Full-time tertiary education: <ul style="list-style-type: none"> National Diploma in Project Planning and Management, 2013, Southern Business School National Diploma in Natural Resources Management, 2000, Polytechnic of Namibia (now Namibia University of Science and Technology) Matric (Grade 12 Certificate), 1995, Namibia College of Open Learning 	
Short-courses <ul style="list-style-type: none"> Ecological Modeling Course, 2009, Presented at the Polytechnic of Namibia by University of Potsdam (Germany) Safety and off-road driving Course, 2001, Amibis Driving Academy Basin Management Course (OmBMC), 2008, Southern African Institute for Environmental Assessments (SAIEA) Advance training on Facilitations Skills, 2006, Indigo – Monkeys Valley, South Africa^[1] SAFRINET Course in Entomology and Arachnology, 1997, Pretoria South Africa Air Sampling Course, 1996, NOAA – Climate Monitoring and Diagnostics Laboratory (NOAA/CMDL). Boulder, Colorado, United States of America Hands on Training on Fog Collection and constructing Fog collecting Units, 1996, La Serena Chile 	
RELEVANT WORK EXPERIENCE	
Position Held: Environmental Consultant Institution: Enviro Leap Consulting cc Year: Current, Part-Time	Role and Responsibilities: <ul style="list-style-type: none"> Coordinate Environmental Assessment projects, conduct filed studies and facilitate public consultation process Manage all administrative activities of project management components of the company Facilitate application for environmental Clearance Certificates
Position Held: Central Technician Institution: SASSCAL Year: 2010 to present	Role and Responsibilities: <ul style="list-style-type: none"> Planning and undertaking field trips, Download data from automatic weather station as well as soil moisture data loggers. Monitoring of environmental components which involve data collection, capturing and processing^[1] Basic Administration and budgeting, Maintenance of SASSCAL vehicle Fleet and other equipment, Participation in training, workshops and conferences.
Position Held: Central Technician Institution: BIOTA Southern Project Year: 2004 to 2010	Role and Responsibilities: <ul style="list-style-type: none"> Planning and undertaking field trips, Download data from automatic weather station as well as soil moisture data loggers. Monitoring of environmental components which involve data collection, capturing and processing^[1] Basic Administration and budgeting, Maintenance of BIOTA Vehicle Fleet and other equipment, Participation in training, workshops and conferences. Supervised subordinates (Junior research technician and Para-ecologists)

RELEVANT WORK EXPERIENCE continuous...

Position Held: Research Technician
Institution: Gobabeb Training and Research Centre
Year: 1995 to 2004

Role and Responsibilities:

- Coordinated the Long-term Ecological Research (Ecological Observatory Network-EON) research projects, conducted and maintained the Centre's research and research sites
- Represented the Centre at national and regional international Workshops, Conferences / Congress
- Corresponded with researchers both local and international (ref: data collection, sharing and implementation)
- Supervised subordinates (Junior research technician and Interns)

SKILLS

- Project Planning and Management (Incl. Proposal Writing, Budgeting and Basic Accounting, SIA / EIA Assessments)
- Problem analysis and scoping, project design, monitoring and evaluation, and professional report writing
- Leadership (supervision of sub-ordinates and leading project teams)
- Training, facilitation of collaborative and educational workshops
- Good communication in English (both written and verbal), basic spoken proficiency in four Namibian Languages
- Computer literate (Ms word, Excel, PowerPoint, Outlook, SPSS and basic GIS)
- Basic IT and server management, Basic electronics repairs
- Can work without or with little supervision

AWARD AND ACHIEVEMENTS

- Successfully completed First Aid advance Courses 2007^[1]_{SEP}
- National Science Award, Special Category: Research Assistant of the Year 2004
- Best poster presentation: Exploring fog as a supplementary water source in Namibia, St John's Canada, 2001

RECENT PUBLICATIONS AND REPORTS

Mtleni V (2017) Environmental Management Plan for the Operation of an Existing Seal Skin and Trophy Processing Plant in Luderitz, Karas Region, Namibia.

Mtleni V et al (2001) Exploring Fog as a supplementary water source in Namibia, Proceedings 2nd International Conference on Fog and Fog Collection St John's, Canada

Mtleni V et al (1998). Namibian Application of Fog-Collection System Harare, Environmental Round Table Series. ^[1]_{SEP}

Mtleni V et al (1998) Evaluation of Fog-Harvesting potential in Namibia. Proceedings, 1st International Conference on Fog and Fog Harvesting, Vancouver, Canada

REFERENCE CONTACTS

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