COMPETENT PERSON'S REPORT

On

THE KUNENE MOUTH DIAMOND PROJECT

(EPL2633)

For

NORTHERN NAMIBIA DEVELOPMENT COMPANY (PTY) LTD

As Requested By

Mr. QUINTON VAN ROOYEN

Prepared by:

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Geomine Consulting Namibia CC

23 July 2015

EXECUTIVE SUMMARY

I. Purpose **12.9(h)(i)**

The report was prepared for Northern Namibia Development Company (NNDC) and covers all exploration and prospecting work to date on EPL 2633, an Exploration Property, effective March 2015.

The objective is to give a comprehensive report of the exploration results to date, specifically the geological characteristics of the diamond resources within the property in order for potential investors to understand the asset value of the property, its investment potential and the possible pitfalls.

II. Project Outline **12.9(h)(ii)**

Northern Namibia Development Company (Pty) Ltd ("*NNDC*") is the owner of EPL2633, which according to very meager information was granted in 1998, assumed to be Avrill 66 as they were reported in Diamond Register as being the first to produce diamonds. The ownership, again as inferred from the Diamond Register, passed on to Blue Chip, then to Shelfco and then to NNDC.

The EPL, approximately 20 000 hectares in size, is located around 660km north of Swakopmund, in the north-western corner of Namibia's Skeleton Coast Park on the Namibia / Angolan border. Access to the EPL is attainable by 4x4 vehicles from Terrace Bay, over Möwe Bay, from there around 270km along the shoreline through the Skeleton Coast Park.

NNDC started their exploration program for diamonds in EPL2633 in 2001. Prior to 2001, there is very little documentary evidence about exploration in the EPL-area, as well as along the Skeleton Coast in general. In 2006, Next Investments (Pty) Ltd purchased the total issued share capital of NNDC. Exploration activities prior to 2006 were characterized by ad hoc pitting and trenching operation without any planning or geological considerations. Reference to verbal comments and rumors of pitting and trenching the Kunene River terraces, as well as of diving and pumping Kunene Gravels have been made, but no documentary evidence could be found.

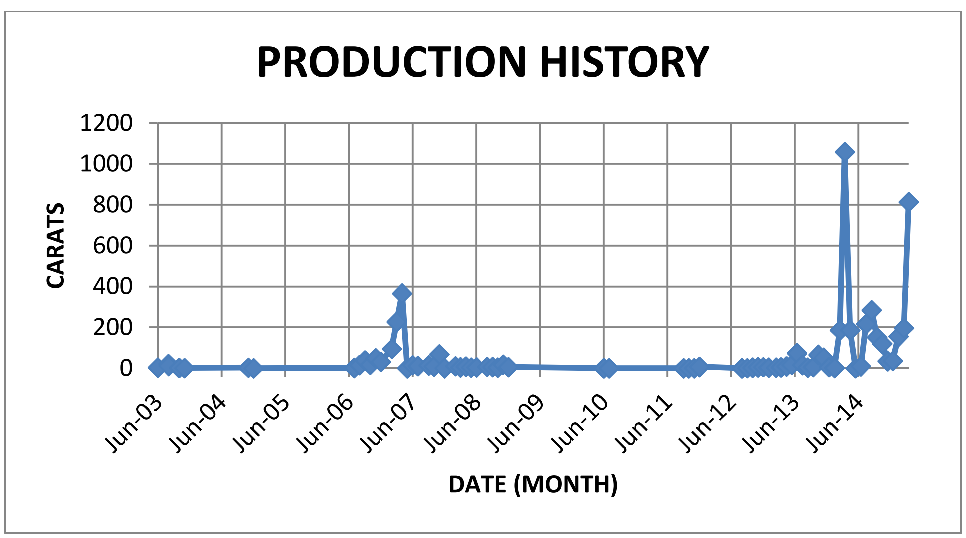
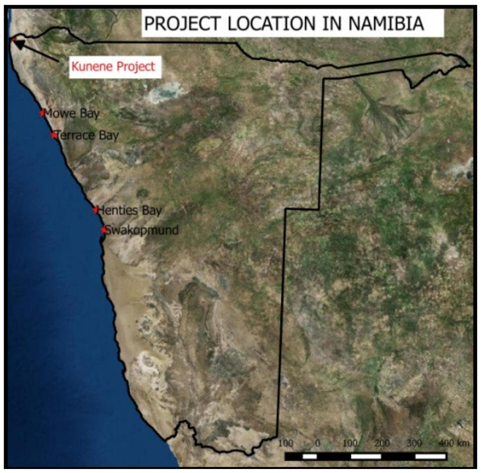


Fig 1: NNDC production history 2003 to 2014

In the exploration and prospecting program to date some 1587 bulk sample pits have been dug and processed, 57 232m of Ground Penetrating Radar surveys, 53 745m of ground EM surveys and 15 452m of ground magnetic surveys have been conducted. A further 280m of trenching for geological purposes was done.

To date some 4,833.68 carats have been produced from prospecting with a monthly breakdown as shown in the graph above (Fig 01).

III. <u>Location map indicating area of interest</u> **12.9(h)(iii)**



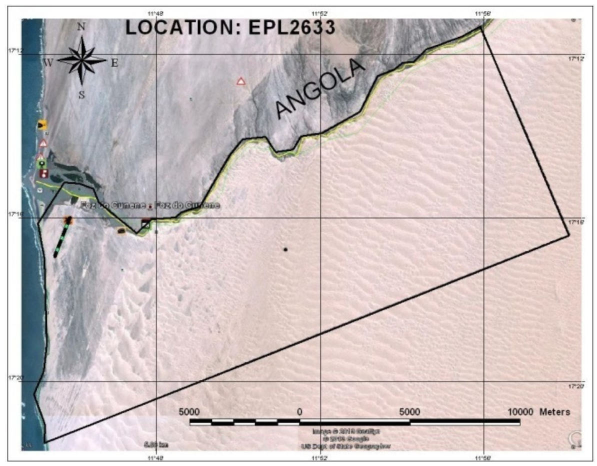


Figure 2: EPL 2633 - Project Location in Namibia & Layout

IV. <u>Legal aspects and tenure, including any disputes, risks or impediments</u> **12.9(h)(iv)**

The original mineral license was an Exclusive Prospecting License (EPL) EPL2633. It went through two amendment applications as the ongoing exploration work indicated different geological realities and the amendments had to cover the area of highest prospectivity at that time.

In 2008 a Mining License application was submitted based on the original EPL2633. This was again amended in 2014, as exploration up to then has shown that the 2008 application does not properly cover the areas with the best economic potential.

According to the latest mineral rights information from MME (Namibian Mining Cadastre, March 2015), the EPL2633 area is registered as a pending mining license, which relate to NNDC's mining license application, submitted in 2008. The application is registered / recognised as ML156.

V. <u>Geological setting description</u> **12.9(h)(v)**

The deposit is an alluvial diamond deposit that could be split into two main areas, the Gully Zone and the Proto-Kunene.

The Gully Zone is a huge area comprising some 2200ha of N-S trending gullies. Within this gully system some 667ha consists of gullies filled with very thin diamond-bearing gravels, the so-called Shallow Gravels. Another 346ha along the coast and above the high water mark consists of a deposit environment similar to the Shallow Gravels but covered by coastal dunes, the so-called Coastal Dune area. Between the Shallow Gravels and the Namib Sand Sea lies an area of some 1260ha, the so-called Rough Floor Gully Area, in which all gullies were denuded of gravels but diamonds are still found in cracks and fissures ("micro-traps") in the gully bed.

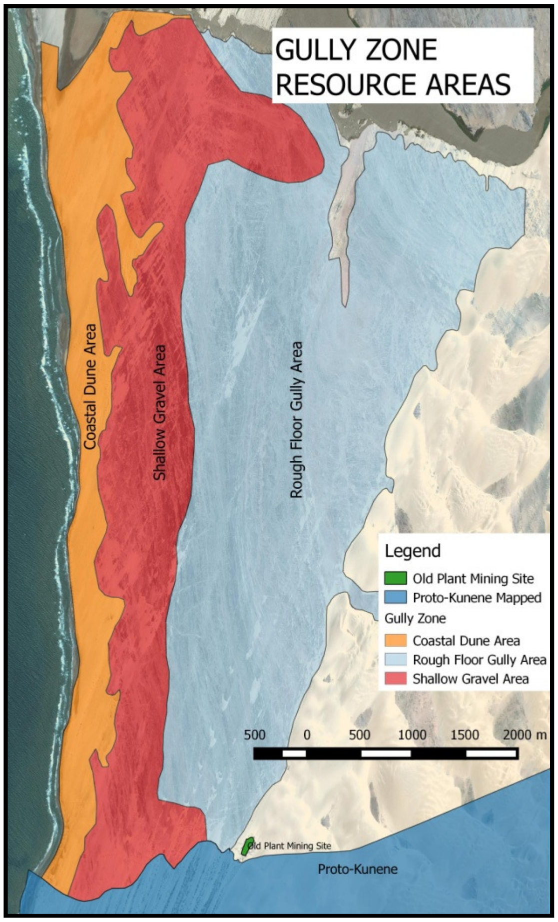


Fig 3: EPL 2633 – Resource Areas

The major feature on the project is a Dwyka-age glacier valley that pre-dates the present Kunene River, the so-called Proto-Kunene. It trends out of Angola some 30km inland and then curve down and around to the to the south west to cross the southern part of the project area where it is some 8000m wide.

All of the gullies drain southwards into this Proto-Kunene which is also the area of main economic potential. The original diamond-bearing material consists of the so-called Mega-Conglomerate which is a fluviatile sediment varying in thickness from 0.5m to 5m and consists of an unsorted mass that varies from fine sand to multi-ton boulders. It seems to have been deposited under conditions of extremely turbulent flow. The resource grade is very low and does not contribute much to the overall project resource.

The main deposit type within the Shallow Gravels is a marine-reworked sediment varying from 0cm to 50cm in which the diamonds seem to be concentrated at the base of the gravel layer. These Shallow Gravels have shown some very high-grade areas where the gravel is a very thin layer of only some 10-15cm. Grain size, although it varies from fine sand to course cobbles, it is typically more of a coarse gravel type.

The Pro-Kunene, as illustrated in Figure 3 above, has been investigated by geophysics (HLEM, GPR, magnetics) and confirmed by visual observation where the present Kunene River cuts through it.

All of the gullies drain into the Proto-Kunene and at least two diamond-bearing gravel deposition episodes have been recognised, the earliest being the deposition of the mega-conglomerate and the latest the erosion from the Gully Zone. It is assumed, but not yet proven, that a possible enrichment of diamonds from the northwards flowing longshore current may also have occurred as is common elsewhere along the coast.

Several alternating layers of gravel and sand are observed in the Proto-Kunene sedimentation and, like the Shallow Gravels, resource grade variations are large and occurs over very short distances.

Prospecting access is hampered by dunes in the eastern reaches and by very shallow groundwater in the west. Generally only the top 5-8m have been explored where accessible, although geophysics indicate a depth of some 300m.

VI. Exploration programme and budget **12.9(h)(vi)**

The exploration program started off with isolated sample pits scattered over the Shallow Gravels. A surface mapping program, aided by satellite image processing, was followed by a more structured sampling program.

The bulk sampling program remains on-going but focuses on the Proto-Kunene Area, which appears to offer the most economic potential, thus more important. This bulk sampling program is extended into sampling larger areas in SMU blocks of 10m x 10m. The larger blocks are necessitated by the abrupt grade variations and sampling larger areas would smooth out sample grade results to give more representative resource grade values.

Bulk sampling is done by conventional excavator and ADT transport and augmented by vacuum mining equipment to clean bedrock traps. Samples are screened to remove 8mm oversize and 1.2mm undersize. Concentration is done by DMS and recovery is through Flowsort X-Ray machines.

The current budget and expenditure is about N$1.8mill per month.

VII. Brief description of individual key modifying factors **12.9(h)(vii)**

The Techno-economic Study (including modifying factors) is at the conceptual level with the modifying factors in the process of being established mainly from the exploration program.

VIII. Brief description of key environmental issues **12.9(h)(viii)**

The project is located in the Skeleton Coast Park and compliance with Environmental Legislation is important. A valid Environmental Clearance Certificate is crucial for continued exploration and prospecting as it addresses all key environmental issues. The current Certificate is valid until 30 January 2016.

IX. Mineral Resource and Mineral Reserve Statement **12.9(h)(ix)**

The Inferred Diamond Resource Estimate is as follows:

AREA	**Area Size (ha)**	**Tons ('000)**	**Density Ton/M^3**	**Ct/100T Estimated**	**Ct Estimated**	**US$/Ct**
PK (Sub) Area	125	3,867	2.02	6.17	238,629	175
Coastal Dune Area	347	822	2.05	1.71	14,054	175
Shallow Gravel Area	667	4,035	2.05	2.34	94,357	175
Rough Floor Gully Area	1,260	18	2.05	7.70	1,383	175
TOTAL	***2,399***	***8,742***		***3.99***	***348,423***	175

The bottom screen cut-off is at 1.2mm.

The stones are uniformly small, varying around 0.15 ct/stone, with the following distribution statistics:

Data Source	n	Mean	Standard Deviation
Historical Monthly Production Records	59	0.16	0.08
Processed Bulk Samples and Historical Dumps	215	0.15	0.08

X. Reference to risk paragraph in the full Competent Person's Report **CPR Sec 6; 12.9(h)(x)**

The issue of RISK is qualitatively addressed in the CPR since the risk in dealing Inferred Resources overshadows almost everything else. However, some summary discussion here is warranted.

a. External Risks
- The most important is the confidence in the Resource Estimates. Due to extreme grade variations over short distances, reliable resource estimation is very difficult.
- The second-most important is climate. A climate with strong winds and high rust factor affects plant and equipment reliability and inhibits a regular work schedule for certain outdoor operations
- The third is logistics imposed due to the location of project, distance from support services and poor access roads

b. Internal Risks
- The most important risk is Cost: Operating and Capital
- The second important risk is staffing. Due to the isolated location the project requires competent staff that are psychologically suitable to work in isolation, single status with a 12 week on 2 weeks of rotation.

XI. Statement by the Competent Person that the summary is a true reflection of the full Competent Person's Report; and **12.9(h)(xi)**

I, the undersigned CP, consider this summary a true reflection of the full Competent Person's Report.

XII. With reference to paragraph IX above, the economic indicators of the estimated resource to date are: **12.9(h)(xii)**

Diamond Values:

NNDC's Run of Mine diamonds extracted to date (samples), was valued by Morse Investments Limited (Pty) Ltd, which is a licensed diamond cutting and polishing factory located Windhoek, as summarized in the Table below, assigning an average value per carat of US$175/ct.

DESCRIPTION	Carats	Clarity	Color Range	% of Parcel	Rapaport Price July 2015	Average Value US$/ct	Value US$
BIGGEST STONE FROM MINE	1.65	IF	D	0.04%	8,500	1,563	2,578.95
SIEVE -7 LOW COLOUR /MAKEABLES	52.94	SI+	K-	1.14%	380	78	4,129.32
SIEVE 7-9	753.81	VS+	J+	16.29%	765	98	73,873.38
SIEVE 9 MAKEABLES	468.52	VS+	J+	10.13%	855	108	50,600.16
SIEVE 10 SAWABLES	327.28	VS+	J+	7.07%	920	150	49,092.00

SIEVE 10 MAKEABLES	189.27	VS+	J+	4.09%	855	120	22,712.40
SIEVE 10 LOW COLOUR/MAKEABLES	116.58	VS+	K-	2.52%	580	90	10,492.20
SIEVE 11 MAKEABLES	99.69	VS+	J+	2.15%	1,020	120	11,962.80
SIEVE 11 LOW COLOUR/MAKEABLES	105.85	VS+	K-	2.29%	670	90	9,526.50
BROWNISH LOW COLOUR	131.77	VS-SI	LIGHT BROWN-CAP	2.85%	200	40	5,270.80
Sieve 13 SAWABLES	1,657.98	VS+	D-F	35.83%	980	250	414,495.00
Sieve 15 SAWABLES	180.18	VS+	D-F	3.89%	1,180	319	57,477.42
Sieve 17 SAWABLES	56.90	VS+	D-F	1.23%	1,300	664	37,781.60
FANCY YELLOW	172.60	VS+	FANCY YELLOW {mi	3.73%		312	53,851.20
REJECTIONS	312.31	SI1 to I2	k+	6.75%		20	6,246.20
TOTAL NNDC SAMPLE	**4,627.32**						**810,089.93**
Average Value (US$/Ct)							**175**

<u>Diamond Resource Estimation</u>:

NNDC's resource estimation falls within the Inferred Diamond Resources category, as summarised in the Table below, which is typical of alluvial diamond deposits globally, due to the geological setting of such deposits.

AREA	**Area Size (ha)**	**Tons ('000)**	**Density Ton/M^3**	**Ct/100T Estimated**	**Ct Estimated**
PK (Sub) Area	125	3,867	2.02	6.17	238,629
Coastal Dune Area	347	822	2.05	1.71	14,054
Shallow Gravel Area	667	4,035	2.05	2.34	94,357
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TOTAL	***2,399***	***8,742***		***3.99***	***348,423***

The bottom screen cut-off size is at 1.2mm.

The exploration results to date indicate that the Property hold sufficient economic potential, with high enough levels of confidence, to underpin the next phase(s) of the project development cycle i.e. improving the resource estimate to the indicated category, then the evaluation of all potential exploitation options, which should take all the modifying factors into consideration. To date, the resource estimate could be classified at the Inferred Diamond Resources category only.

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KUNENE MOUTH DIAMOND PROJECT

EPL2633

1.0 GENERAL

1.1 Purpose of Report

T1.1

The report was prepared for Northern Namibia Development Company (NNDC) and covers all exploration and prospecting work to date on EPL 2633, an Exploration Property, effective March 2015.

The objective is to give a comprehensive report of the exploration results to date, specifically the geological characteristics of the diamond resources within the property in order for potential investors to understand the asset value of the property, its investment potential and the possible pitfalls.

This Competent Person's Report has been compiled according to the guidelines suggested in the 2008 Edition, amended July 2009, of *The South African Code for Reporting of Exploration Results, DIAMOND RESOURCEs and Mineral Reserves (**The SAMREC CODE**)*.

1.2 Project Outline

T1.2

Northern Namibia Development Company (Pty) Ltd ("*NNDC*") is the owner of EPL2633, which according to very meager information was granted in 1998, assumed to one of three operators, namely Avrill 66, Blue Chip or Shelfco.

NNDC which is wholly owned by Next Investments (Pty) Ltd ("*Next Investments*"), started their exploration program for diamonds on EPL2633 in 2001. Prior to 2001, there is very little documentary evidence about exploration in the EPL-area, as well as along the Skeleton Coast in general. In 2006, Next Investments purchased the total issued share capital of NNDC. Exploration activities prior to 2006 were characterized by a total chaotic pitting and trenching operation without any planning or geological considerations. Reference through verbal comments and rumors of pitting and trenching the Kunene River terraces, as well as of diving and pumping Kunene River gravels have been made, but no documentary evidence could be found.

The Diamond Register refers to diamonds being produced on EPL2633 prior to NNDC's involvement by Avrill 66, Blue Chip and Shelfco, but there is no documentary evidence from where these diamonds were produced.

The EPL, approximately 20 000 hectares in size, is located around 660km north of Swakopmund, in the north-western corner of Namibia’s Skeleton Coast Park on the Namibia / Angolan border. Access to the EPL is attainable by 4x4 vehicles from Terrace Bay, over Möwe Bay, and from there for around 270km along the shoreline through the Skeleton Coast Park.

The project has been going since 1998 and was haphazardly prospected in the early years until the present ownership took over in 2001. The first systematic bulk-sampling program was conducted in 2008 but with no attempt at any geological mapping and no attention to the geology of the alluvial diamond deposits. In 2010, under the professional control of a new geosciences consultancy, the geology was systematically mapped and substantial amounts of geophysics conducted, mainly Ground Penetrating Radar (GPR) and Horizontal Loop EM (HLEM)

To date, some 158 bulk samples were taken.

The geology of the deposit is well understood but it is not yet clear what physically element of the deposit environment controls the diamond grade. It would seem to be a random process, with the mineralisation extremely variable over very short distances.

The main features of the geological setting are dominated by the so-called Proto-Kunene. This is a Dwyka-age glacier valley, some 8 km wide, coming out of Angola, some 30km inland and curves south-westwards to a position south of the present Kunene River. The present Kunene River is also a glacier valley but post-dates the Proto-Kunene by an unknown amount of time.

The basement rock consists mainly of orthogneiss, which dips prominently to the east and strikes rather prominently in the general direction of 348˚.

High volume turbulent-flow floodwaters rushing from north to south, carrying huge boulders have gouged out gullies in the bedrock, which is filled with diamondiferous gravels, the mega-conglomerate. These gullies debouch southwards into the Proto-Kunene.

Post-depositional erosion, seal level changes, etc have reworked, eroded and concentrated the original mega-conglomerate diamond-bearing gravels, which were fluviatile in origin, into a much higher grade marine gravel. the Shallow Gravels.

One or more erosion episodes have washed diamond-bearing gravels from these gullies into the Proto-Kunene, resulting in seemingly localised, but extremely high-grade areas.

Due to the ubiquitous Namib Sand Sea, only a relatively small area is not covered by thick dune sand and is accessible to prospecting. This is a triangular area of some 4 km wide in the north along the Kunene River, narrowing down to about a kilometer wide some 16 km to the south.

The amount of work, inclusive of geology, geophysics, image processing, sampling and processing done since 2008, as well as the understanding of the deposit geology, would suggest that this project can be classified as an advanced exploration project.

1.3 Project location and description

T1.5

The project is located in Namibia in the extreme north-western corner on the coast and just below the Namibia-Angola border.

Logistically, the closest city and supply and engineering support centre is Swakopmund, some 660km to the south. There are no roads that connect the project to the outside world and the road from Swakopmund stops at Möwe Bay, some 270km to the south. Fuel and minor supplies are available from Terrace Bay, a further 80km south.

There are no nearby workings of any kind, with the closest diamond prospecting operation (now defunct) at Rocky Point, some 200km to the south of the project. Another defunct uranium exploration project was located in the Engo Valley, some 100km to the south.

Currently there is no active onshore or offshore exploration project anywhere in the vicinity of the project area. There are a number of exclusive prospecting licenses near or adjacent to the project, but there is no active exploration or prospecting being undertaken.

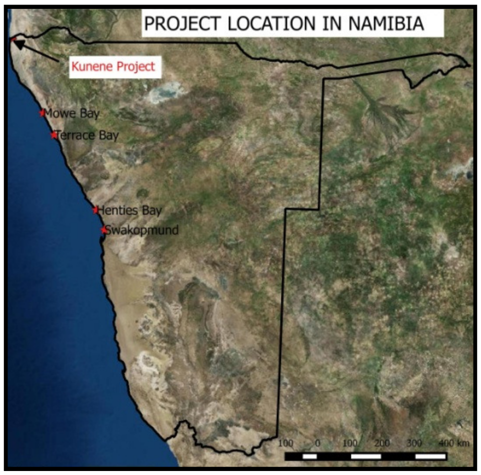


Fig 01: Project Location Map

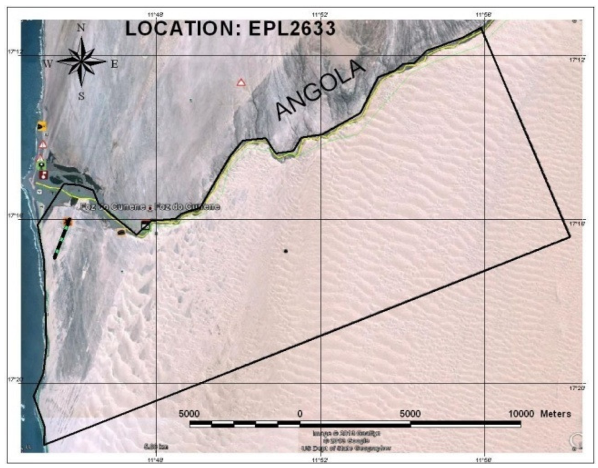


Fig 02: EPL 2633 Location Map

1.4 Topography and climate

T1.6

1.4.1 Topography

The Kunene project is located within the Kunene Region. The local topography at the prospect consists of a flattish area of eroded basement metamorphic rocks and meta-sediments. Into these, deep NS channels have been eroded.

There is currently a narrow coastal region 7km long in a southerly direction from the current Kunene River, by 2.5KM wide in the EW direction that is virtually devoid of dunes. To the east of this area an extensive dune field exists. It is within this area devoid of dune sand that most of the current exploration takes place. Future exploration will concentrate on the Proto-Kunene to the south of this area of exposed bedrock.

Elevations between the dune sea and the coastline are typically below 50m, and the general elevation rises steadily inland.

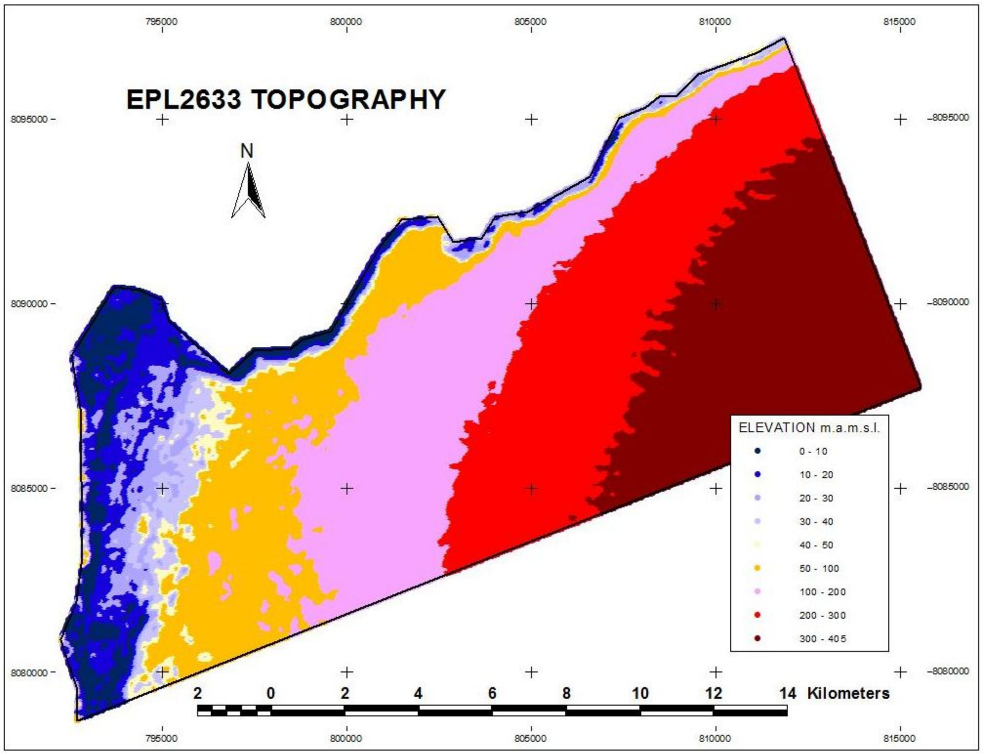


Fig 03: Elevation Contours

1.4.2 Climate

During winter, the weather is foggy and temperatures range from 9^{o}C to 14^{o}C. The wind blows virtually every day from 11am to 7pm a speeds up to 80km/h and sometimes for days and nights without end.

The cold Benguela current causes fog and inhibits rainfall. The project area receives rainfall of less than 50mm per annum.

During summer, the temperature can reach as high as 30^{o}C but averages ~ 24^{o}C. The days are mostly clear and the wind less ferocious with occasional calm days.

The wind direction is always from the SSW and causes the dunes to constantly shift and obliterate any traces of human activity overnight, all excavations, pits and trenches are completely covered by sand within days.

The major climatic impact on the project is from the southerly winds, which makes working conditions intolerable because of windborne sand and dust, limit visibility and fills up working pits and places very quickly with windblown sand.

On the other hand, the windblown sand is an environmental bonus as it fills pits and holes very quickly and, as long as there are no rock or spoils heaps, returns the area quickly to pre-digging status.

1.5 Key plan, Maps and Diagrams

T1.4

The primary features of the project area are the Proto-Kunene, Kunene River, Namib Sand Sea, Southern Embayment and the Gravel Gullies.

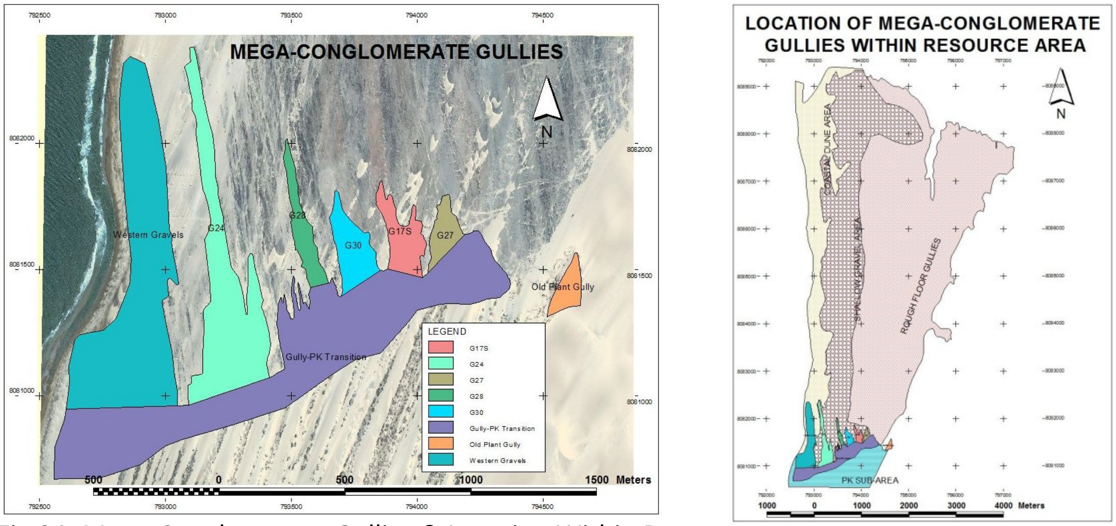


Fig 04: Mega-Conglomerate Gullies & Location Within Resource Area

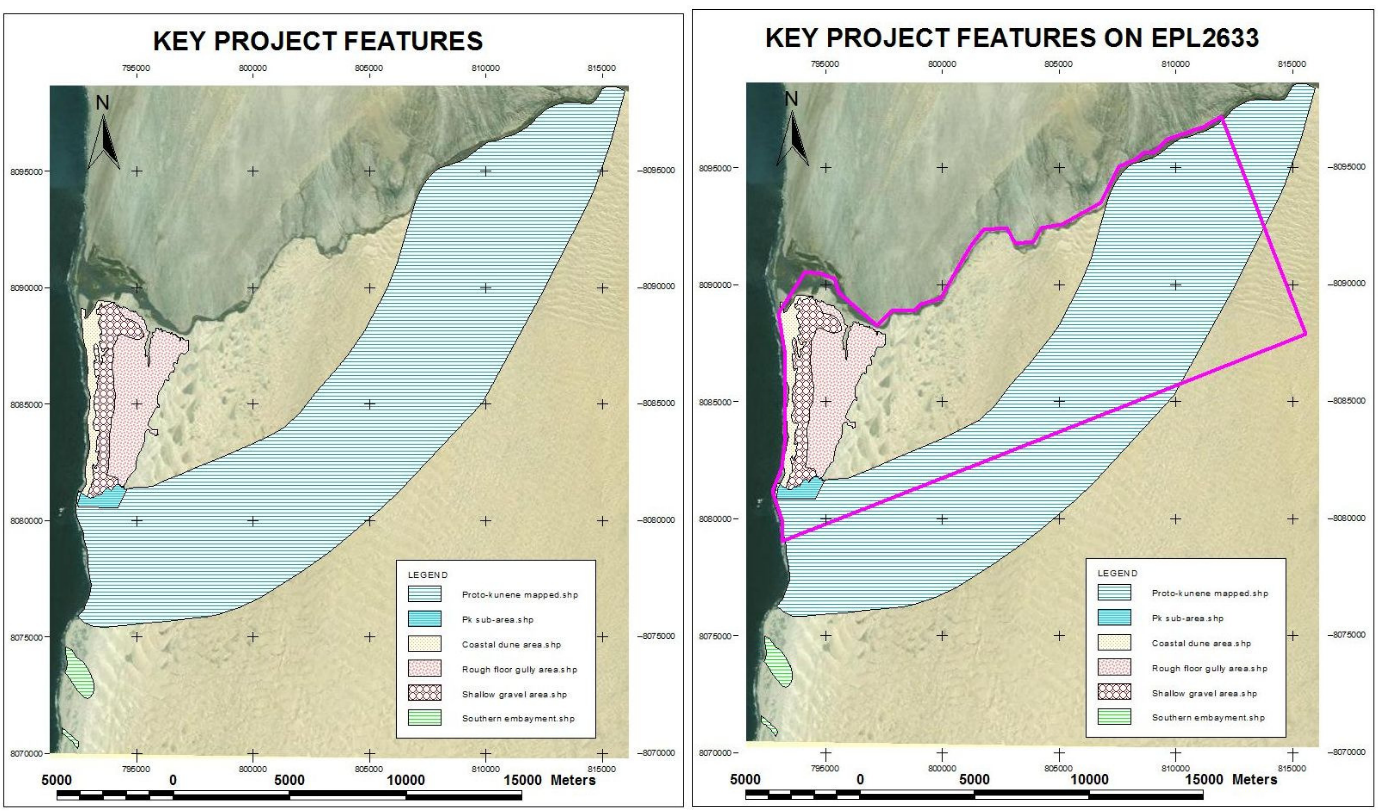


Fig 05: Project Key Elements & Relative to EPL2633

The Mega-Conglomerate Gullies was the first of the deposit features that were mapped and sampled. Eventually the Shallow (thin) Gravel Gullies were found and initially mapped on surface and later, once better understood, were more effectively mapped used high high-resolution satellite imagery.

The Mega-Conglomerate is only found in deeper, un-eroded portions of the gully system in the southern-most part of the system, and is the oldest of the diamond bearing gravels.

The Shallow Gravels were derived from the Mega-Conglomerate deposits by marine action.

1.6 Legal aspects and tenure

T1.7

The Exclusive Prospecting License (EPL) was originally shaped to cover a substantial area along the Kunene River, as that was considered the prospective area. Then, in 2012 the Proto-Kunene was considered a reality and the EPL was accordingly amended to cover this feature as it was thought of at the time to be of economic value.

However, as early as 2008 at the conclusion of the Geolab sampling program, a Mining License was applied for and was recorded as ML-156. However, the eventual discovery of the diamond-bearing Southern Embayment made it clear that the ML-156 was sub-optimally located. A mining license amendment was compiled and submitted in 2014, covering the best accessible parts below the dune sea and included the Southern Embayment as well.

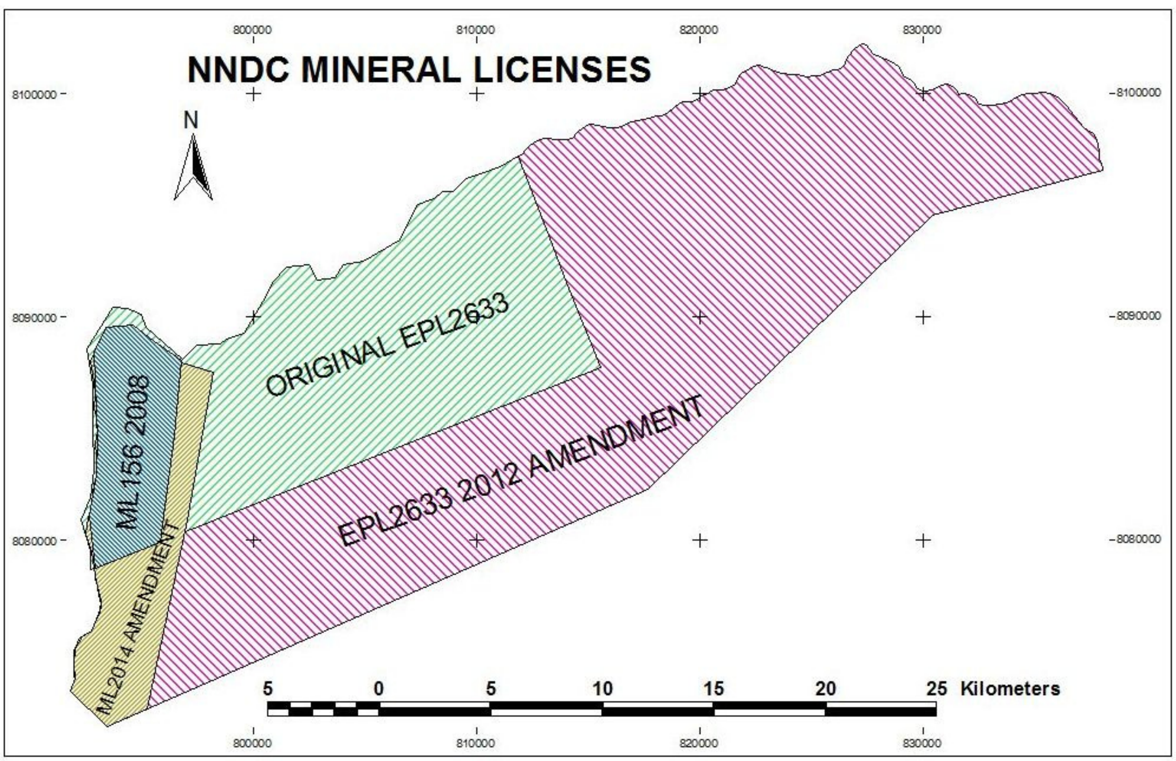


Fig 06: Exclusive Prospecting License, Mining License and Amendments

The Southern Embayment was found to be diamond-bearing, as were the high grade Shallow (thin) Gravel Gullies. The Proto-Kunene is now only considered to be the deposition feature were diamond-bearing gravels eroded from the initial Mega-Conglomerate gravels and later Shallow Gravels (marine gravels) were deposited, in addition to the earlier Mega-Conglomerate gravel itself.

In July 2014 both ML-156 and the original EPL2633 were listed as "*Pending*" which means that it is either still pending as to a decision on whether to grant or it is still pending a renewal. In December 2014 and March 2015, only ML-156 is listed as "*Pending*" with no mention of EPL-2633.

Equally important, and critical since the project is located within the Skeleton Coast Park, is a current legal issue of the Environmental Permit that explorers and prospectors must have to be allowed to operate. According to the Environmental Consultant, Dr Lima Maartens, this document is current and valid.

1.7 Project History

T1.3

The history of the project can be conveniently slotted into three periods, with the first of these from 1998 to 2001, prior to Next Investments acquiring ownership of NNDC, and thereafter between 2001 and 2010 during which time the main geosciences consultancy was Geolab Namibia (Pty) Ltd ("*Geolab*"). The third period is from 2010 to present, when the geosciences consultancy was taken over by Geomine Consulting Namibia cc ("*Geomine*").

The nearest other exploration activity was for uranium at the Engo Valley, some 120km south of this project, while the nearest diamond prospecting and mining activities were at Rocky Point, some 200 km to the south of the project area.

1.7.1 Period: 1998 - 2001

Anecdotal information from this initial period indicates that the ownership of the project was jointly Namibian/South African, with apparently alluvial diamond prospecting and mining expertise provided by the South Africans who hailed from the Western Transvaal alluvial diamond fields.

They have spent substantial time and effort testing largely barren, but attractive looking, present Kunene River gravels, both surface material and material recovered from the river bottom, without any success. Eventually they gave up working the Kunene River gravels and started "wildcatting" all over the gravel gullies to the south until they managed to start recovering diamonds from the area which is locally known as "*The Old Plant"* site. The Old Plant site is situated on the north bank of the Proto-Kunene where it disappears under the dune sea, and some 7km south of the Kunene River.

Apparently no geoscientific work was done during this period and no documentary information is available, apart from entries in the mandatory Diamond Register.

1.7.2 Period: 2001 - 2010

After the Next Investments takeover of NNDC in 2001, things continued initially much as before with haphazard "wildcat" prospecting and pitting. However, in time, Geolab Namibia was contracted to be the geosciences consultants, and they started a systematic bulk sampling program and recorded the data.

Geolab also focused initially on the Kunene Gravels and sampled gravels all along the Kunene River south bank inclusive of some river terraces exposed amongst the sand dunes some 9km inland.

Although Geolab did a systematic sampling job, they did not attempt any geological mapping of the gravel deposits.

The sampling results from the Geolab sampling program is given in the table below.

<u>TABLE 01: GEOLAB NAMIBIA SAMPLING RESULTS</u>

LONG	LAT	Source	Sample	Sand THK	Pit m^2	Gravel THK	Gravel m^3	Tons	Carats	Stones	Ave ct/stone	Gravel ctp100t
798502	8088145	Terr	Ter11	0.75	50	2	100	80	0	0	0	0
801539	8088220	Terr	Ter12	1.5	50	0.2	10	62	0	0	0	0
801576	8088295	Terr	Ter13	3.5	50	0	0	53	0	0	0	0
794062	8081608	MC	E1	6	400	2.3	920	240	2.02	19	0.11	0.84
793529	8089287	CD	G1	0	100	1.5	150	156	0.06	6	0.01	0.04
793355	8089395	CD	G2	0	100	3.5	350	64.5	0.27	2	0.14	0.42
793362	8088977	MC	G3	0	100	1.4	140	156	0.38	2	0.19	0.24
793464	8086703	MC	G4	0	225	1.2	270	219	1.29	10	0.13	0.59
793502	8081770	MC	G7	0	100	2.7	270	222	2.09	17	0.12	0.94
793537	8081592	MC	G8	0	100	1.2	120	49.5	0.4	2	0.2	0.81
792921	8081548	CD	G9	1.2	1750	1.5	2625	369	2.48	16	0.16	0.67
792886	8081690	CD	G10	1.3	1800	1.5	2700	391.5	2.08	15	0.14	0.53
793704	8081323	PK	A4	5	400	1.4	560	1780	20.71	145	0.14	1.16
793678	8081203	PK	A5	5.5	400	0.6	240	142.5	3.82	29	0.13	2.68
793641	8089227	CD	B1	0	100	0.9	90	114	0.31	3	0.1	0.27
794634	8088520	SG	B10	0	100	0.3	30	22.5	0	0	0	0
794732	8088409	SG	B11	0	100	0.96	96	127.5	0	0	0	0
794815	8088453	SG	B12	0	100	0.2	20	30	0.07	1	0.07	0.23
794771	8088303	SG	B13	0	100	1	100	114	0	0	0	0
794848	8088252	SG	B14	0	100	0.2	20	42	0	0	0	0
794911	8088352	SG	B15	0	100	0.4	40	21	0	0	0	0
794952	8088273	SG	B16	0	100	0.5	50	102	0	0	0	0
795005	8088309	SG	B17	0	100	0.75	75	78	0	0	0	0
795465	8088070	SG	B18	0	100	1.9	190	124.5	0	0	0	0
793794	8089297	CD	B2	0	100	0.95	95	97.5	0	0	0	0
794062	8088763	SG	B3	0	100	1	100	60	0	0	0	0
794127	8088785	SG	B4	0	100	1.1	110	123	0	0	0	0
794107	8088665	SG	B5	0	100	0.75	75	160.5	0	0	0	0
794102	8088559	SG	B6	0	100	0.6	60	75	0	0	0	0
794086	8088443	SG	B7	0	100	0.6	60	79.5	0	0	0	0
794170	8088473	SG	B8	0	100	0.9	90	103.5	0.15	1	0.15	0.14
794646	8088398	SG	B9	0	100	1	100	118.5	0	0	0	0
793545	8086457	SG	G5	0	225	0.6	135	156	0.06	1	0.06	0.04
793629	8086126	SG	G6	0	100	0.4	40	45	0.5	5	0.1	1.11

The three "Terr" samples are from the present Kunene River terraces, way inland.

A careful look at this program shows a major problem in that there is no indication of how a bulk density was arrived at, or whether it was just assumed to a certain quantity (most likely).

Back-calculating the density being used to convert cubic metres to tons, one finds that the calculated densities varies from as little as 0.14 tons/cubic metre to as much as 6.2 tons/cubic metre.

The results of the work done by Geolab are problematical as follows:

- the diamonds recovered is probably correct, even though diamonds are assumed to have been lost through an inefficient rotary pan extraction, compounded by stones lost and not recovered by the use of the excavator to dig the pits,
- the reported pit sizes and gravel thickness are most likely correct as some of these pit localities are still available and the sizes and gravel thickness could be verified
- the grade specification of carats/100tons as given in their table, is highly suspect as there does not seem to be a real and definite bulk density specification.

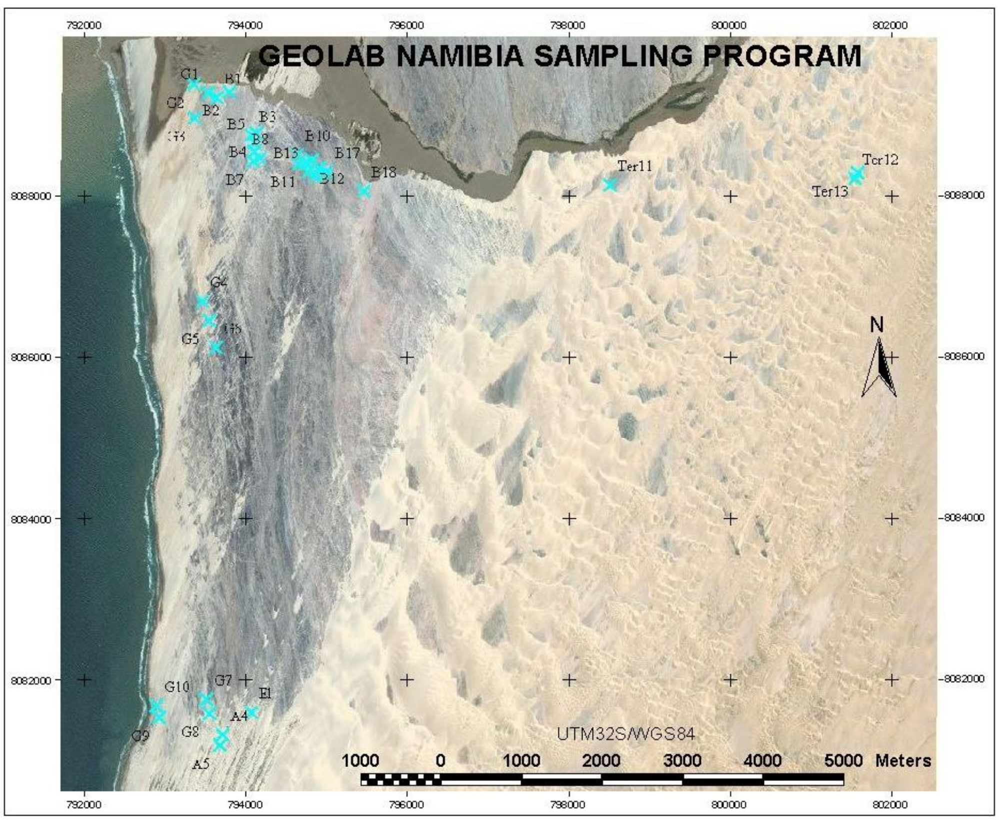


Fig 07: Geolab Bulk Sampling Pits

If the bulk density factor determined by Geomine is used to calculate samples tonnes and recalculate the diamond sample grade, the comparison is as shown in Fig 02 below.

Geolab concluded with the statement that, while the data does not allow a formal resource statement to be made, even of the Inferred class, they can nevertheless suggest 5.1 million tons at a global grade of 0.63 carats/100 tons.

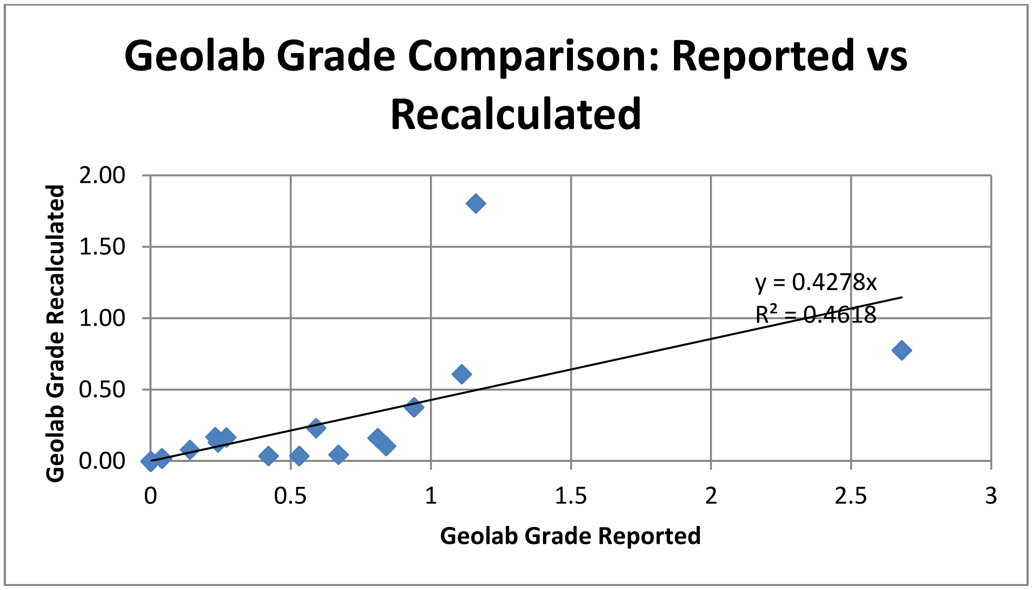


Fig 08: Geolab Sampling Program Grade Comparison (in ct/100t)

1.7.3 Period: 2010 - 2015

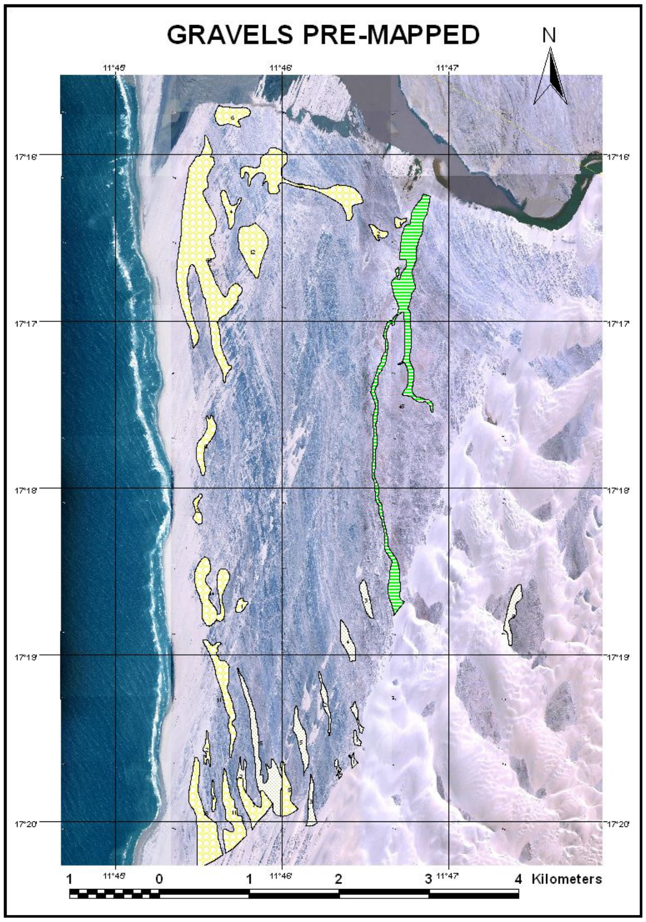
Geomine Consulting Namibia cc ("*Geomine*") was contracted as the geosciences consultancy in the beginning of 2010. It was an interesting time as Geomine inherited a project with sample results, although questionable, but no associated geology. Also at this time, it was generally believed that there are no diamonds on the NNDC exploration license at the Kunene Mouth and that all diamonds were being smuggled in from Angola.

1.7.3.1 Geomine Initial Phase

Geomine set out in the initial phase (2010) with two main objectives: (1) Formally prove that the diamonds that are reported are actually found on site, and (2) work at understanding the geology of the deposit. In addition to these crucial objectives, the feature now known as the Proto-Kunene glacier valley was hypothesized from visual evidence and it was thought necessary that it be formally investigated as well.

Using the Geolab sample coordinate data, a sample site was selected to prove Objective 1. In addition, exhaustive security measures were implemented, inclusive of video camera monitoring of the sample processing and diamond recovery process. While this was ongoing, each Geolab sample site was visited for clues to the deposit geology and resulted in proving the existence of north-to-south trending gullies that contain diamond-bearing gravels. These were mapped out from imagery created by mosaicing a large number of Google Earth images. A substantial number of possible gullies were identified and investigated by visual inspection and some pitting by excavator.

Initially the flat-lying gravel deposits in the north-western reaches of the exploration area (Fig 04) was considered separate and unique deposit, associated with the present Kunene River gravel terraces and designated the Western Kunene gravels and shallow gravel sheets. As the exploration proceeded, it became clear that these gravel bodies were part of the Shallow Gravel system that were covered by a variable thickness of much younger barren Kunene River gravels.



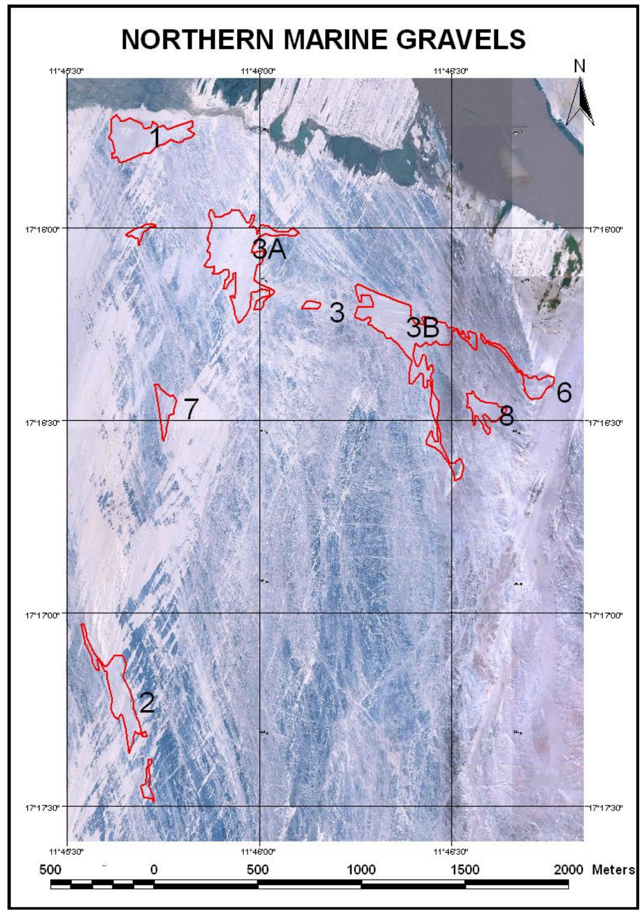


Fig 09: Potential Gravels Mapped from Google Earth Fig 10: Western Kunene Gravels & Shallow Gravel Sheets

NOTE: The Northern Marine Gravels is the original designation of what was eventually known as the Western Kunene Gravels & Shallow Gravel Sheets and is currently recognised as Shallow Gravels with a variable thickness of barren Kunene River Terrace gravels.

This initial phase was concluded by showing that the diamonds were proven to have been recovered from local sources without "salting" and gravel gullies were mapped and given a Gravel ID number. The resources at this time were considered to consist of the Mega-Conglomerate Gravel Gullies in the south and several flat-lying gravel terraces in the north, designated the Western Kunene Terraces. Geolab proved these to be diamond bearing, although of low grade.

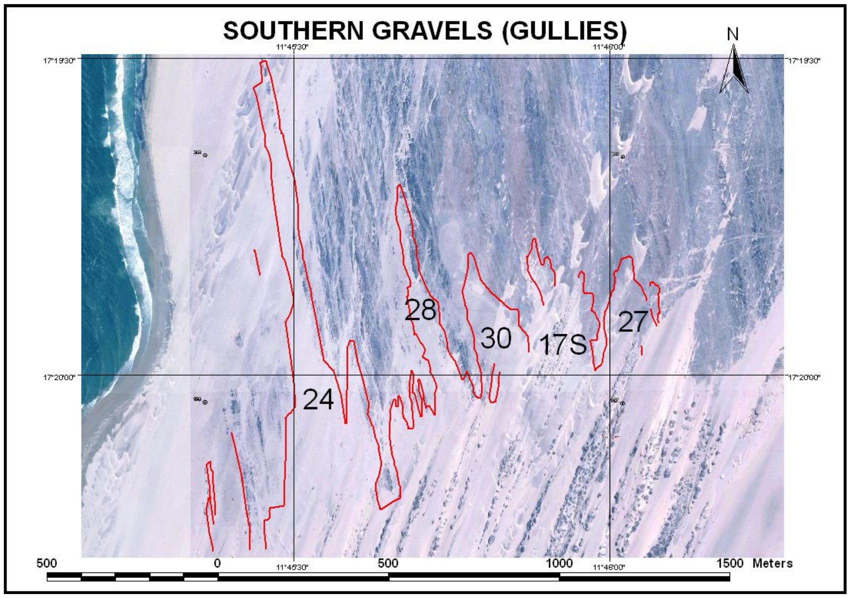


Fig 11: Gravels Mapped: Southern Gravel Gullies (Mega-Conglomerates)

1.7.3.2 Geomine Second Phase

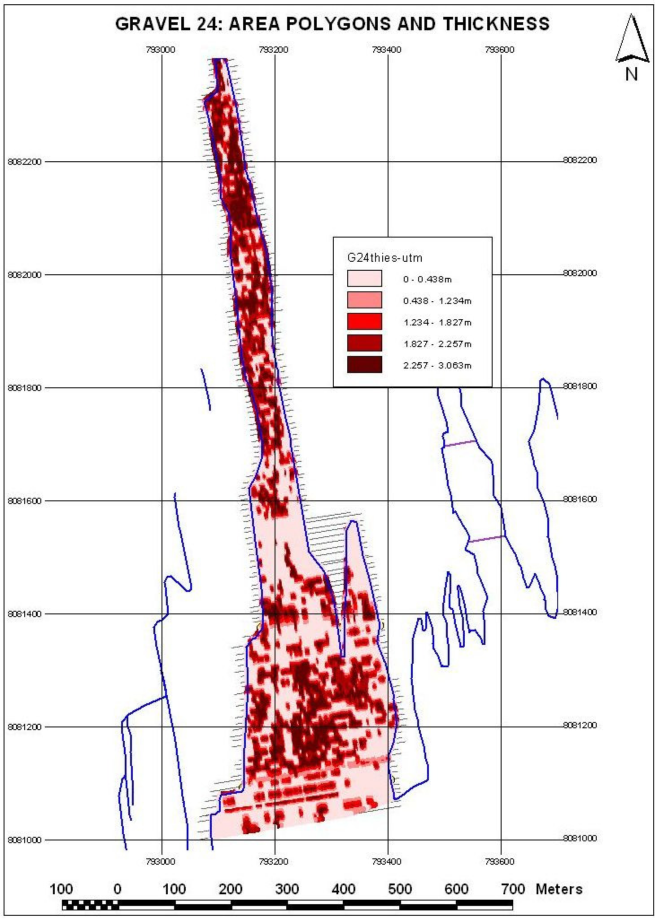
The next phase (2011) started with a reasonable understanding of the deposit geology, the surety that the area is indeed diamond-bearing and that the Proto-Kunene seems to be a reality with the gullies definitely draining southwards into it.

During this phase, a geophysics contractor, Earthmaps Consulting, was contracted to map out the extent of the Proto-Kunene using Horizontal Loop EM (HLEM). Since the Gravel Gullies were known and well mapped, at least where it was not covered by dune sand, it was decided to do a high-frequency Ground Penetrating Radar (GPR) survey over the southern gravel gullies (see Fig 11 above) to map out the gravel thickness as the basis for a resource estimation. BcoreX was contracted for this work.

The gravel thickness reported by BcoreX was not verified, but it seemed to pick up the gullies quite effectively as is shown by the GPR results over Gravel 28 where it clearly indicated the Geomine bulk sample trench, showing it as devoid of any gravel fill.

Then using the Geolab sample data selectively, i.e. those sample results that are within the gravel gully system, backed by the Geomine sampling to prove the existence of gravels on the property, and with the GPR gravel thicknesses, a early resource estimate was derived.

In both cases the grade distribution was determined by a multiple regression on Easting, Northing and Elevation. In the case of the Northern Gravels the gravel thickness was similarly derived. In the case of the Southern Gully Gravels the gravel thickness was derived from the GPR surveys, but this was not tested by excavation at one or more sites.



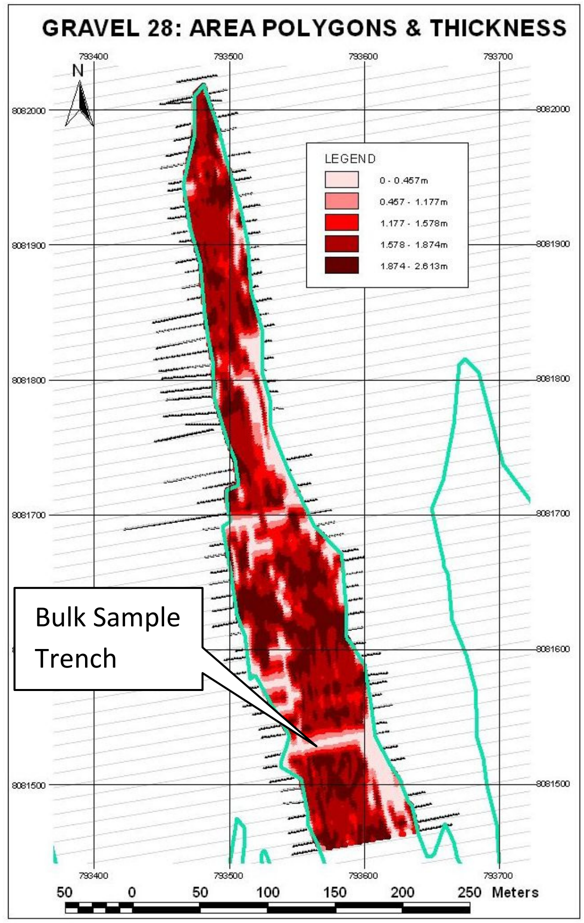


Fig 12: GPR results over Gravel24 & Gravel 28

TABLE 02: WESTERN KUNENE GRAVELS AND SHALLOW GRAVEL SHEETS

GRAVEL	Overburden	Gravel	T_Diamonds	Cp100Tons	OB m^3	Grav m^3	Grav Tons	Carats
GR01	0.0	1.0	171	0.01	0	50,206	100,413	13
GR02	0.5	1.2	4,724	0.40	20,098	50,915	101,830	411
GR03	0.2	0.9	125	0.07	508	2,249	4,499	3
GR03A	0.0	0.9	3,004	0.05	2,573	81,209	162,419	89
GR03B	0.3	0.9	3,136	0.12	26,090	88,007	176,015	220
GR06	0.7	0.8	1,019	0.10	10,106	11,695	23,391	23
GR07	0.0	1.2	96	0.22	0	14,096	28,193	61
GR08	0.4	1.0	457	0.17	6,312	15,264	30,529	51
			12,732	**0.14**	**65,687**	**313,641**	**627,289**	**871**

NOTE: The Western Kunene Gravels And Shallow Gravel Sheets are Shallow Gravels covered by a variable thickness of younger Kunene River Terrace gravels.

TABLE 03: SOUTHERN GULLY GRAVELS (MEGA-CONGLOMERATES)

GRAVEL	Overburden	Gravel	T_Diamonds	Cp100Tons	OB m^3	Grav m^3	Grav Tons	Carats
GR17	2.2	1.5	10,776	1.12	78,735	53,359	106,718	1,192
GR24	2.2	1.4	58,999	1.13	373,059	239,285	478,571	5,428
GR28	1.9	1.6	10,726	1.15	76,500	64,171	128,343	1,478
GR28ext	1.8	1.5	1,267	1.05	8,481	6,876	13,753	145
GR30	2.2	1.4	12,697	1.11	87,771	55,850	111,701	1,240
GR30ext	1.7	1.7	2,071	1.15	15,992	16,569	33,139	380
OldPlant	3.3	0.9	8,472	1.00	57,905	15,570	31,141	311
WG	2.1	1.5	66,729	1.18	405,124	292,380	584,760	6,922
WGext	1.6	1.6	28,232	1.12	174,341	173,977	347,954	3,910
			199,969	**1.14**	**1,277,908**	**918,037**	**1,836,080**	**21,006**

1.7.3.3 Geomine Third Phase

The Geomine Third Phase (2012-2015) was an eventful period in the project lifecycle, as a number of important events occurred.

1.7.3.3.1 Discovery of the Shallow Gravel Gullies

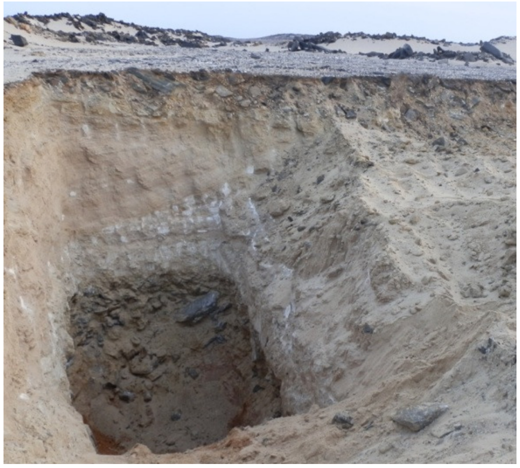
All gullies were identified during the initial Geo-Eye satellite image mapping (***see** **1.7.3.3.6 Mapping Satellite Imagery***). However, prior to Phase Three, the only diamond-bearing gravels actually recognised as such were the highly distinctive fluviatile lower grade *Mega-Conglomerate Gravels* in the southern-most, deeper and most reconisable parts of the gully system.

A careful reconsideration of the entire depositional environment showed that the gully system does not pinch out northwards where the Mega-Conglomerate gravels terminate, but continues as a system of younger marine-reworked gravels (Shallow Gravels) in gullies containing extremely shallow (thin) gravels, varying from 50cm to 10cm.

These shallow gravel gullies were initially called "*Blind Gullies*" as they mostly do not debouch into the Proto-Kunene, but pinches out against an E-W basement high, some 300-500m north of the Proto-Kunene.

It became clear that in these Shallow Gravels (marine-reworked gravels) the diamonds are preferentially concentrated at the base of the gravel body, right on top of the bedrock. The implications were twofold: (a) the thickness of the individual gravel body (or lens) does not correlate with the diamond grade within that gravel, (b) mining these thin gravels by excavator was sub-optimal, as the excavator rips up the bedrock, allowing the diamonds to fall into the cracks and fractures so created and are not recovered, and (c) the excavator cannot effectively scoop up gravels that are thinner than the length of the teeth on the excavator bucket.

Also, since the thickness of the gravel is not important, the thinner gravels are actually the higher grade ones. Statistics suggested that that gravel thickness is inversely proportional to the diamond grade, and this resulted in the discovery of the *Rough Floor Gullies*.



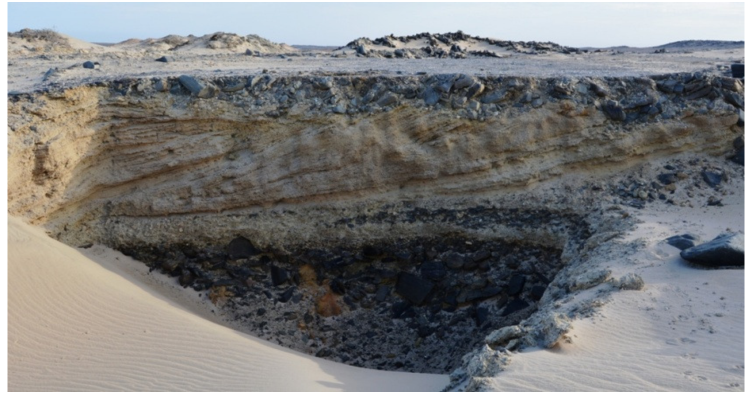


Fig 13: S21 Sample Pit (View N)

The sample pit S21 shows the Mega-Conglomerate at the bottom (~1.75m), capped by a grit/conglomerate layer (~0.4m), which is in turn capped by a thick sequence (~1.5m) of sand washed in from the north with final surface capping of Shallow Gravels (~0.35m). The Mega-Conglomerate lies directly on a Red Sand bed.

Fig 14: Shallow Gravels (0.20-0.35m) at S06

The Geo-Eye imagery was re-interpreted and all possible Shallow Gravel Gullies were identified and mapped. (***see*** ***1.7.3.3.6 Mapping Satellite Imagery***).

About 34% of the area hosting the gravel filled gullies (Shallow Gravels) are covered by the coastal dunes and more difficult to evaluate.

1.7.3.3.2 Discovery of the Rough Floor Gullies

The investigation of the Shallow (thin) Gravel Gullies showed that the diamonds are mainly concentrated at the base of the gravel body, right on the bedrock. This suggested that gullies with very rough "floors" or gully beds should still contain diamonds in cracks and fissures even though the gravel filling or capping had been eroded.

Fig 15: Rough Floor Gully at P472

During the ground-truthing following the initial Geo-Eye processing and mapping, several localities were noted where a gully was clearly visible, but had no gravel filling. It was however noted that these gullies had very rough gully beds ("floors"). It was also noted that these Rough Floor Gullies gave the same spectral response in the Geo-Eye classification process as the gullies containing gravels. Following this argument, and using Vacuum Mining machines, two gully locations were sampled at random and both contained diamonds with results as below.

TABLE 04: ROUGH FLOOR GULLY SAMPLE RESULTS

NAME	Cts	Stones	GravThick	PitSQM
PIT472	1	9	0	370
PIT495	0.42	2	0	1249.2

1.7.3.3.3 Discovery of Micro-Traps in bedrock

The initial Geo-Eye mapping was reviewed in order to map out all possible gullies, whether they contain gravels or not, and in the subsequent ground-truthing, it was noted that the basement bedrock separating the indentified gullies filled with Shallow (thin) Gravels is not barren, but contains abundant "micro-traps'. These "micro-traps" are small, varying from centimeters to tens of centimeters, but they do contain gravel material exactly the same as those in the Shallow Gravel gullies proper.

Fig 16: Micro-traps in bedrock

These zones of micro-traps have not been tested by Vacuum Mining Machines, but by the same argument used and proven for the Rough Floor Gullies, should also contain diamonds.

1.7.3.3.4 Discovery of the Southern Embayment

During the visual reconnaissance of the area, a feature was noted with some of the attributes of the Proto-Kunene and located some 1.5km south of the Proto-Kunene South Bank.

This feature is now known as the Southern Embayment ("*SEB*"), since it was initially thought to be a shallow embayment on the coast, but it was eventually recognised as part of the glacier gouging that formed the Proto-Kunene. A HLEM survey over the SEB indicated a depth of 17m below surface.

Gravels similar to those found the Shallow (Thin) Gravel Gullies was recognised on the north bank of the *SEB* and eventually two sample pits dug in SEB were both found to contain diamonds.

Fig 17: Shallow Gravel (equivalent) at SEB north bank

<u>TABLE 05: SOUTHERN EMBAYMENT SAMPLE RESULTS</u>

Pit	Stones	Carats	Ave. Size	Biggest Stone
SEB-E	37	5.07	0.14	0.31
SEB-W	7	0.76	0.11	0.22

1.7.3.3.5 Exploration of the Proto-Kunene by Geophysicists (GPR, HLEM, Magnetics)

The Proto-Kunene is the most significant feature, not just on the EPL, but also in the general area.
Horizontal Loop EM (HLEM) as well as surface magnetics and deep sounding Ground Penetrating Radar were employed to map the Proto-Kunene in some detail.

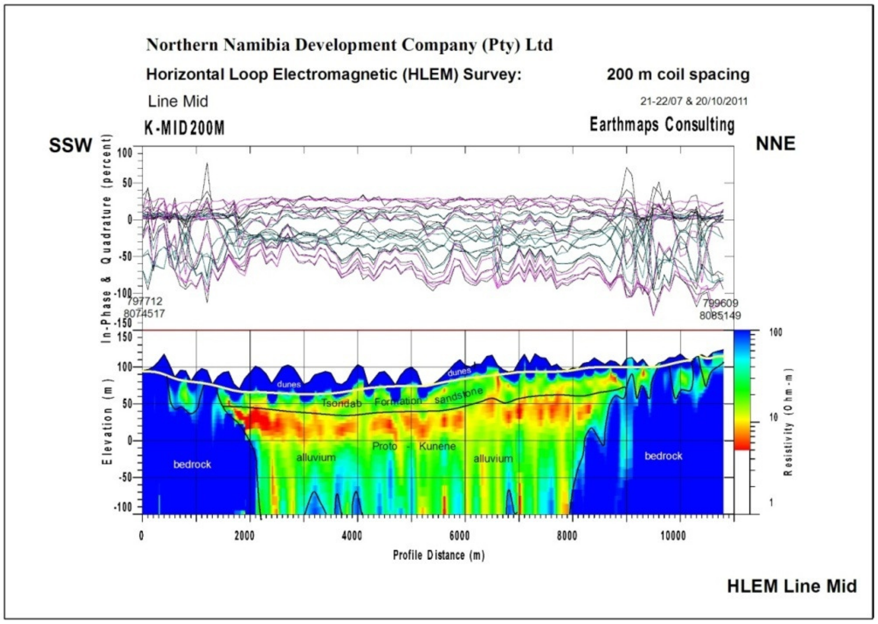


Fig 18: HLEM Profile - Mid Line

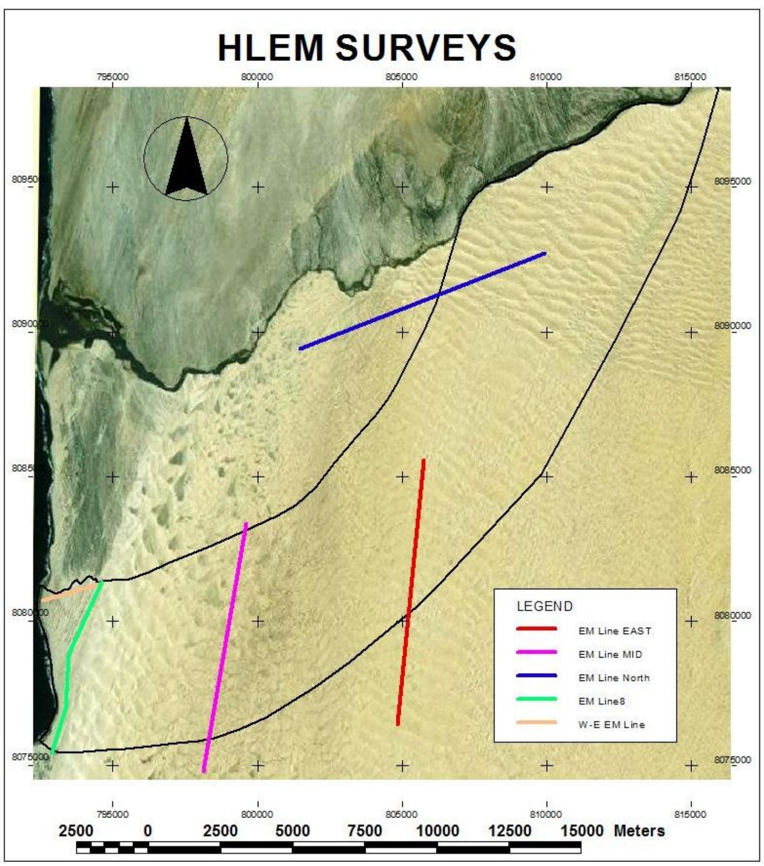
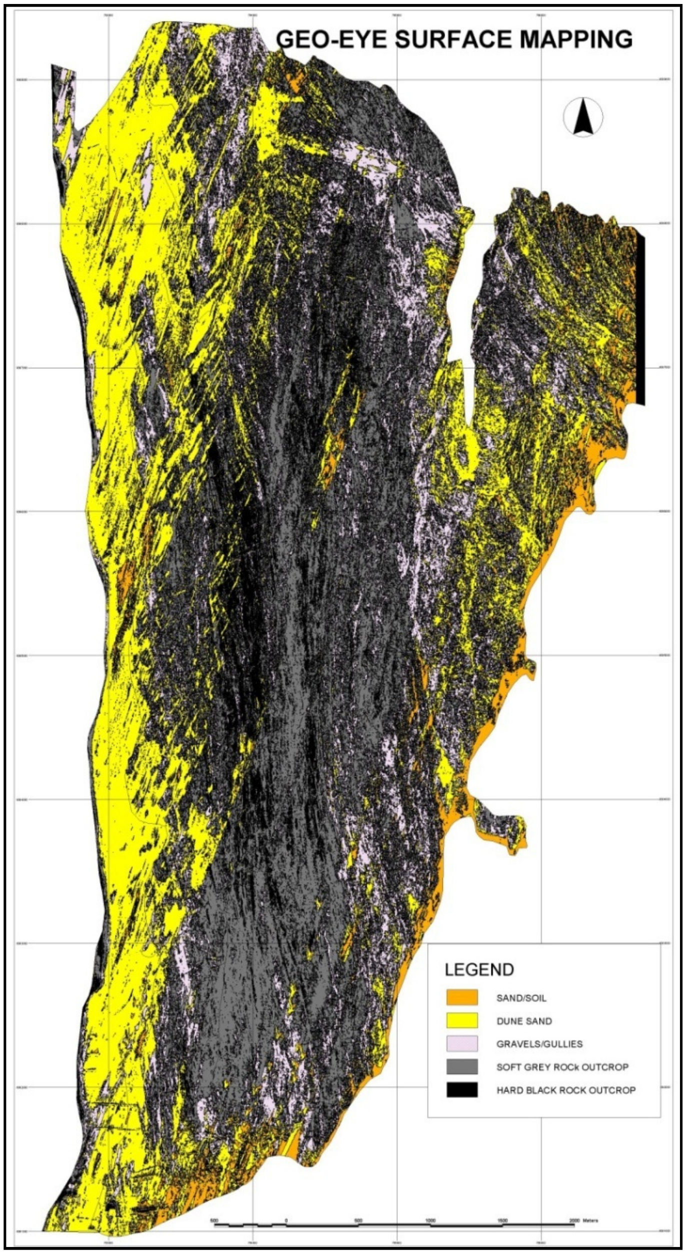


Fig 19: HLEM Survey Lines of Proto-Kunene

The general outline of the Proto-Kunene was well established by these survey lines, and field trips along the south bank of the Kunene River eventually found the succession of Dwyka Fm sediments some 30km inland where the younger Kunene River intersects the older Proto-Kunene. These EM lines across the Proto-Kunene showed that the hypothetical Proto-Kunene does exist, is some 8000m wide and possibly some 300-350m deep.

1.7.3.3.6 Mapping by Satellite Imagery

The accessible area not covered by dune sand is roughly 14km^2 in size, and although it is not sand covered, apart from the coastal dune area, it is a rough terrain for vehicles. In addition, it is more cost-effective to have targets to investigate rather than just covering an area that size blindly.



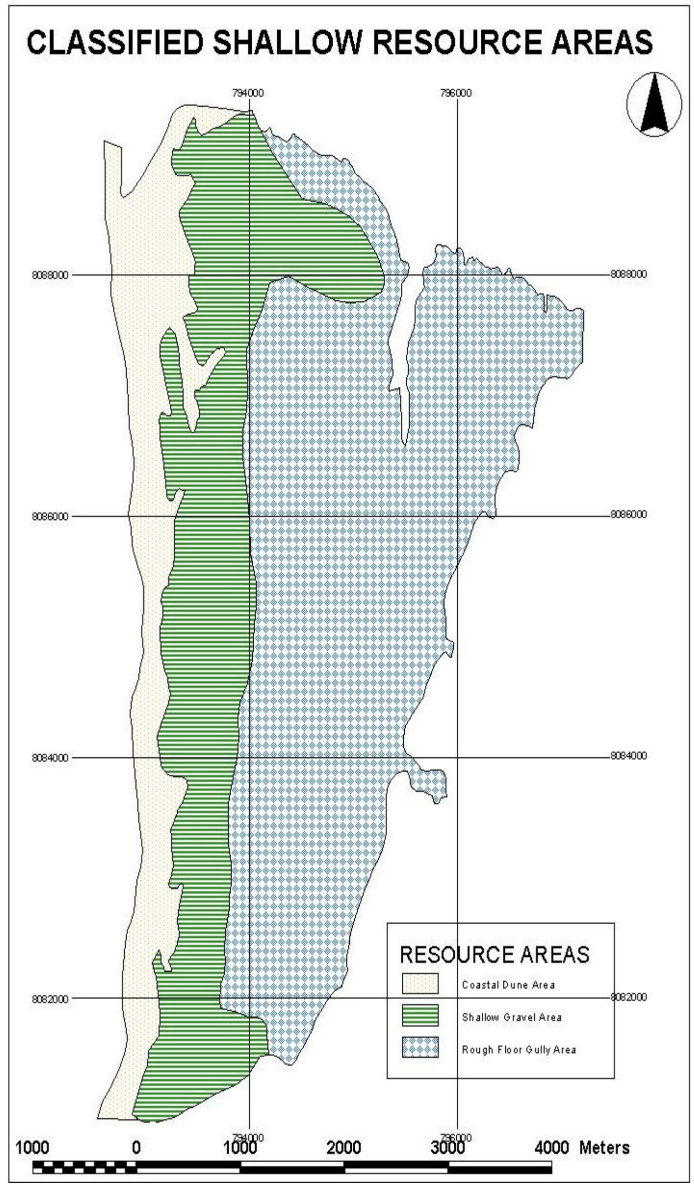


Fig 20: Final Mapping

Fig 21: Resource Location Areas

In certain areas, it is easy to map out the gravel filled gullies, the bedrock with micro-traps and the rough floor gullies. However, that is not the case throughout the Shallow Gravel domain as gravel gullies reduces to gullies with gravel remnants, so distributed that it is almost impossible or impractical to map. The mapping effort has therefore been relegated to using the GeoEye imagery to map out the gullies, with ground truthing to determine whether they contain gravels or not.

Accordingly, a set of high resolution Geo-Eye images were acquired. These were processed using ENVI V5.0 and the main technique was to employ an Unsupervised Classification to discriminate amongst surface features. Several runs were done, each with a different Class Number specification, from 5 classes to 10 classes.

The classification into 5 classes seems to delimit the gravels and rough floor gullies the best. If more classes were specified, the distinction between gravels, soil and dune sand starts to show up better but adds another level of complexity that will require more processing and ground truthing without adding substantially to the interpretation.

ENVI allows the creation of an outline of all classes in the form of a shape-file vector layer, which in turn can be loaded into any GIS system to extract whatever classes may be required to represent the classification of interest.

In the case of the 5-class unsupervised classification, Class #3 best represented the known gravel bodies. However, there is still some uncertainty as to whether Class #3 actually captured all of the outcrop areas with the extensive micro-trap development, or for that matter, all of the possibly diamond-bearing rough floor gullies as well. This is due mainly to the ubiquitous windblown sand cover.

In order to get rid of small erroneous pixels in the selected Class #3 shapefiles, all small areas less than 50 sq.m. in size was removed and the remainder buffered with a two meter buffer area.

The resultant buffered shapefile can be expected to largely contain the diamond-bearing areas of interest.

1.7.3.3.7 Deployment of Vacuum Mining Machines

The high grade Shallow Gravel sample S44 (see data below) was dug by excavator, and substantial diamonds recovered. However, it was observed that the excavator disturbed the bedrock excessively, and the assumption was that some diamonds were not recovered due to being lost in excavator-created cracks in the bedrock. A small demonstration scale vacuum sampler was on-site and it was used to vacuum the sample pit. Several more diamonds (30) were now recovered which would otherwise have been lost.

It was also observed that the excavator did not extract all gravels from a sample pits (eg S12), possibly leaving recoverable diamonds behind.

Fig 22: Gravel on pit floor (S12) not extracted during excavation & S44 After vacuuming

TABLE 06: S44 SAMPLE INFORMATION

Sample	LONG	LAT	Sand THK	Gravel THK	Gravel M^3	Tons	Carats	Stones	Gravel Ctpht
S44	11.763260	-17.319970	0	0.16	38.98	79.9	48.94	318	61.24

The demonstrated benefit of using vacuum suction mining machines was clear and two full-scale mining models were commissioned.

1.7.3.3.8 Conceptualising the Garnet Project and *Spectral Geology* Mapping Project

The Shallow (thin) Gravel Gully and Rough Floor Gully areas are very large and it is known that diamonds can be found almost everywhere, but there has been no visual evidence that can distinguish a high grade area from a low grade area and thus no easy way to identify and model a resource grade distribution.

However, it was qualitatively observed that higher diamond grades are typically associated with higher garnet concentrations, and the concept of the Garnet Project was conceived. The idea was that if it was possible to quantitatively link the garnet concentration with the diamond grade, then one can systematically sample for garnets, do a garnet distribution map and derive a diamond grade distribution map. Taking a single sample for garnets would be much faster than painstakingly sample 10m x 10m sample blocks by Vacuum Suction Mining machine at an average of 168m^2 per day.

The painstaking process required to separate out the heavy minerals (>2.75 g/cc) put paid to this approach.

Next, a hyperspectral airborne survey was considered to map out garnet concentrations, but the cost and concerns about effectiveness made this a less attractive proposition.

Finally, it was argued that since there are no physically observable phenomena that can separate high-grade shallow gravels from low-grade shallow gravels, this distinction may be subtle in that the concentration process may show mineralogical differences, either as deposited or from mineral decomposition, weathering, geochemical processes, etc.

It was therefore hoped that spectroscopic mineral mapping based on ASTER multispectral imagery would allow unique spectral trends to be correlated with diamond resource grade.

The ASTER Images were acquired and the processing done, but no clear correlation between spectral signatures and diamond resource grade could be found. This was thought to be partly due to the very coarse pixel size of the ASTER imagery (15m to 90m).

1.7.3.3.9 GPR Equipment Testing

It is a necessity to be able to get a good idea of the subsurface geology, especially the bedrock configuration and specifically in the Proto-Kunene environment. Ground Penetrating Radar was considered to be the best, quickest and cheapest of the non-invasive exploration tools to achieve that objective as the previous GPR work seemed to give reliable results (see 1.7.3.2 Geomine Second Phase).

An evaluation program was therefore commissioned to evaluate GPR equipment with a wide variety of antenna frequencies.

Several survey test lines were selected and such that one set was over known subsurface geology and the other set over unknown subsurface conditions.

Fig 23: GPR Test Surveying: Medium Frequency (100MHz) and High Frequency (900MHz)

The following frequencies were tested, ranging from poor penetration with high detail to deep penetration with low detail:

i. 900MHz: Least depth penetration but maximum detail
ii. 400MHz
iii. 270Mhz
iv. 250MHz
v. 100MHz
vi. 50MHZ
vii. 25MHz: Best depth penetration but little detail.

The GPR worked well in dune sand and bedrock, but performed very poor in gravels. None of these frequencies managed to reproduce the known subsurface geology below gravel and soil cover and none managed to give any useful subsurface information that would support the cost and effort in acquiring and using this technology.

It is assumed that the high $CaCO_3$ content plus the relatively high salinity was detrimental to the proper propagation of the radar waves through the unconsolidated surface cover.

1.7.3.3.10 Bulk Density Determination

The bulk density determination was conducted at several localities in several litho-types. Two techniques were used as follows:

Cemented Grit

In several localities in the Proto-Kunene cemented grit lenses are found. The bulk density of these were determined by weighing in air and in water (Archimedes method) and calculating the bulk density (BD).

BD = Material Mass/(difference in air weight and water weight)

Immersing the chunks of grit in water on a fine fishing line for weighing also indicated that it is solid with no obvious internal porosity as no bubbles were observed coming out of the material.

TABLE 07: CEMENTED MATERIAL BULK DENSITY

Material	Bulk Density (Tons/m^3)
PK Cemented Grit/Gravel	2.35

(See also useful website ***http://hyperphysics.phy-astr.gsu.edu/hbase/pbuoy2.html***)

Unconsolidated Material

The unconsolidated material was tested in-situ by the following process:

a. Smooth and level the test sample surface
b. Dig a smooth hole and carefully place material in container with known weight
c. Weigh container1 plus lithological material and subtract empty weight
d. Line the test sample hole with very thin and soft plastic material
e. Fill container2 with clean water and weigh (Start Weight)
f. Fill hole in ground from container2 until level with surface
g. Weigh container2 again (End Weight)
h. Subtract End Weight from Start Weight to get Water Weight poured in hole
i. Kg water weight in hole = Litres water in hole
j. Bulk Density = Lithological Mass/Litres of Water.

Testing several sites and lithologies gave the following results:

TABLE 08: UNCONSOLIDATED MATERIAL BULK DENSITY

Material	Bulk Density (Tons/m^3)
PK SurfaceSand & Gravel	1.89
PK Upper Gravel	2.07
PK Gravels	2.07
PK Sand	2.01

Shallow Gravels	2.05

The bulk density of the Mega-Conglomerate gravels could not be determined as there is no weighing system to accommodate a decent sample size such as a truckload, and the methods employed in the finer-grained material could not be used due to the excessive grain size.

Using a volume-based grade specification (ctp100m^3) rather than a mass-based specification (ctp100t) would alleviate this problem where gravel thickness can be measured.

1.7.3.3.11 Geomine Bulk Sample Program

Geomine started a bulk sampling program in 2013 with the initial intention to (a) use a basic sample block size of 10m x 10m, extending it by 10m x 10m blocks should a single block not yield enough sample volume, and (b) to locate the sample block(s) based on Ground Penetrating Radar (GPR) surveys.

To this end a GPR Unit was acquired from Utsi Electronics in the UK and was brought on-site together with the designer/builder. Survey areas were planned to cover visible Shallow Gravel gullies, and grids were laid out from gully-edge to gully-edge (W-E) and some 30m wide. The expectation was that the GPR would show the configuration of the gully bed ("floor") and sampling could be done over various gully bed configurations to determine the relation between gully bed configuration and sample grade.

This approach was abandoned as Mr. Utsi could not get his machine to work at all, and sample blocks were laid on a 10m x 10m basis in an ad-hoc fashion based on visual inspection, as the expected GPR guidance was not available.

The results of this sampling program is shown in the table below.

TABLE 09: GEOMINE BULK SAMPLE PROGRAM

Sample	Source	LONG	LAT	Sand THK	Gravel THK	Gravel m^3	Tons	Carats	Stones	Gravel cpht
PK1	PK	11.769718	-17.333688	2.7	0.2	13.8	28.3	2.12	18	7.49
PK2	PK	11.767466	-17.332744	2	0.25	21.2	43.5	1.57	12	3.61
S01	SG	11.759217	-17.28468	0	0.12	26.15	53.6	0.23	2	0.43
S02	SG	11.760271	-17.286607	0	0.63	80.07	164.1	0.23	2	0.14
S03-Trench	CD	11.75803	-17.295813	0.81	0.44	26.62	54.6	0.52	3	0.95
S04	SG	11.760911	-17.313112	0	0.04	14.11	28.9	0.52	14	1.8
S04NN	SG	11.761008	-17.31209	0.42	0.16	9.2	18.9	0.27	1	1.43
S05N	SG	11.760475	-17.307257	0	0.12	34.51	70.7	2.08	16	2.94
S06	SG	11.761578	-17.321248	0	0.47	88.11	180.6	1.26	9	0.7
S07	MC	11.757983	-17.32733	0.61	0.08	16.65	34.1	0.22	1	0.64
S08	SG	11.762655	-17.329803	2.08	0.15	16.5	33.8	0.07	1	0.21
S09FW	MC	11.758467	-17.333925	0.68	0.63	80.04	164.1	0.28	2	0.17
S09W	MC	11.758607	-17.333869	0.55	0.2	21.17	43.4	0.39	2	0.9
S10	SG	11.76144	-17.33345	0	0.45	94.5	193.7	1.61	10	0.83
S12	CD	11.757301	-17.302433	0.92	0.03	6.46	13.2	0	0	0
S13E	MC	11.761255	-17.328903	0	0.47	86.39	177.1	0.25	1	0.14
S13W	MC	11.761053	-17.328937	0	0.29	56.48	115.8	0.07	1	0.06
S15	SG	11.766838	-17.331588	2.43	1.05	59	121	2.29	16	1.89
S16	SG	11.759872	-17.330402	0	0.1	29.76	61	0	0	0
S18	SG	11.763268	-17.332432	0.93	0.55	59.13	121.2	0.59	6	0.49
S19	SG	11.760994	-17.335028	0	0.52	120.11	246.2	0.32	3	0.13

S20	SG	11.761206	-17.332252	0	0.32	108.91	223.3	4.17	31	1.87
S21	SG	11.764965	-17.330855	0	0.4	40	82	1.64	12	2
S22	SG	11.760876	-17.332176	0	0.09	25.24	51.7	0.21	1	0.41
S23	MC	11.75945	-17.333044	0.2	0.17	29.72	60.9	0	0	0
S24	MC	11.758617	-17.332613	0.67	0.2	23.16	47.5	0	0	0
S25	MC	11.758627	-17.331412	0.62	0.3	59.85	122.7	0	0	0
S26	SG	11.760437	-17.329229	0	0.17	47.29	96.9	0.85	7	0.88
S27	MC	11.758231	-17.329494	0.76	0.35	65.86	135	0.07	1	0.05
S28	SG	11.760806	-17.329991	0.37	0.67	145.45	298.2	1.06	9	0.36
S29	SG	11.761166	-17.335838	2.58	0.25	18.06	37	0.13	1	0.35
S30	SG	11.761698	-17.326782	0	0.44	136.5	279.8	0	0	0
S31	SG	11.762211	-17.324644	0	0.37	114.84	235.4	8.23	53	3.5
S32	SG	11.762006	-17.324755	0	0.45	89.75	184	0.44	3	0.24
S33	SG	11.76188	-17.323213	0.7	0.14	136.5	279.8	2.42	13	0.86
S35	SG	11.760569	-17.314814	0	0.13	51.14	104.8	1.33	9	1.27
S36	SG	11.762059	-17.300011	0	0.3	67.18	137.7	1.38	12	1
S37E	SG	11.76175	-17.294434	0	0.2	20.74	42.5	1.8	13	4.23
S37W	SG	11.761687	-17.294579	0	0.34	73.62	150.9	4.52	27	2.99
S38	SG	11.761355	-17.322741	0	0.12	24.9	51	0.24	2	0.47
S39	SG	11.760882	-17.319984	0	0.47	90.04	184.6	1.4	7	0.76
S40	SG	11.761237	-17.319826	0	0.47	87.52	179.4	3.18	17	1.77
S41	SG	11.761434	-17.319814	0.13	0.14	29.34	60.1	1.47	8	2.44
S42	SG	11.762125	-17.319507	0	0.15	45.28	92.8	1.24	8	1.34
S43	SG	11.762511	-17.319537	0	0.11	23.79	48.8	1.43	3	2.93
S44	SG	11.76326	-17.31997	0	0.16	38.98	79.9	48.94	318	61.24
S45	SG	11.762382	-17.317182	0	0.08	10.73	22	7.31	49	33.23
S46	SG	11.761179	-17.318463	0.8	0.09	23.19	47.5	2.19	16	4.61
S47	SG	11.763055	-17.319458	0	0.09	27.82	57	8.84	60	15.5
S48	SG	11.76088	-17.29031	0	0.35	47.11	96.6	0.32	2	0.33
S49	SG	11.76182	-17.290252	0	0.3	52.28	107.2	0.22	1	0.21
S50	SG	11.761032	-17.289107	0	0.12	34.78	71.3	0.97	5	1.36
S51	SG	11.761729	-17.288619	0	0.3	50.24	103	1.1	6	1.07

The Geomine bulk sampling program suffered from the following deficiencies:

i. All samples were dug by excavator and none were vacuum-cleaned apart from S44 that was partially vacuumed. The samples that did not have any diamonds may therefore not be barren, although it would be low grade.
ii. At the time that these pits were dug, the Shallow (thin) Gravel Gullies were very poorly understood. Some sample pit material was only partly processed, as some of it did not look like typical Kunene diamond-bearing gravels were *expected* to look.
iii. Not all sample pits were properly surveyed using the Trimble DGPS, as it was out of commission for some time.
iv. Sample pits that were not immediately surveyed, could not be surveyed at a later date, as the unceasing southern wind caused the pit to be filled up with dune sand within a week or so.

1.7.3.3.12 NNDC Bulk Sample Program

Following the Geomine bulk sampling program, NNDC continued their own sampling program making careful use of excavator and vacuum mining machines, backed by field technicians with exploration and prospecting experience and trained in the use of the Trimble DGPS.

The results of the NNDC sampling program is shown in the table below.

TABLE 10: NNDC BULK SAMPLE PROGRAM

NAME	Source	X	Y	Grav THK	Pit m^2	Dens	M^3	Tons	Stones	Carats	Ct/100sqm	Ct/100ton
EG1	PK	793830	8081297	1.73	553.6	2.02	954.0	1927.1	1291	197.58	35.83	10.25
EG1A	PK	793818	8081294	0.38	313.8	2.02	118.1	238.6	10683	1617.57	520.51	678.08
EG1B	PK	793778	8081350	0.19	1067.6	2.05	200.9	411.8	383	53.72	5.08	13.05
EG2A	PK	793867	8081246	3.00	244.2	2.02	729.8	1474.2	38	4.87	2	0.33
EG4AO	PK	793779	8081405	0.30	590.6	2.02	175.5	354.4	-99	-99	-99	-99
EG4A-OLD	PK	793780	8081405	0.78	573.0	2.05	445.2	912.7	-99	-99	-99	-99
EG4C	PK	793830	8081268	2.34	107.2	2.02	249.9	504.8	126	18.68	17.49	3.7
EG5A-OLD	PK	793703	8081501	0.35	1088.9	2.05	379.7	778.3	-99	-99	-99	-99
EGB2	PK	793867	8081268	2.31	172.0	2.02	395.7	799.4	-99	-99	-99	-99
PK03	PK	794168	8080769	2.64	137.5	2.02	913.5	733.6	11	1.3	0.94	0.18
PK04	PK	793823	8081047	0.74	59.0	2.02	43.2	87.2	4	0.56	0.96	0.64
PK05	PK	793899	8081255	2.76	204.4	2.02	559.2	1129.6	8	0.77	0.38	0.07
PK06	PK	794398	8081150	3.30	159.6	2.02	521.7	1053.8	22	2.21	1.4	0.21
PK07A	PK	793848	8081269	1.52	94.6	2.02	142.4	287.7	1010	157.38	167.98	54.71
PK07B	PK	793840	8081277	1.31	89.6	2.02	115.1	232.5	282	45.38	51.66	19.52
PK07C	PK	793849	8081278	1.63	81.9	2.02	132.3	267.3	3160	467.83	576.37	175.05
PK07D	PK	793858	8081277	3.77	89.4	2.02	334.7	676.2	1339	205.17	231.08	30.34
PK07E	PK	793839	8081268	2.99	85.8	2.02	254.2	513.4	1069	169.82	199.77	33.07
PK07F	PK	793858	8081267	4.40	93.2	2.02	408.4	824.9	324	56.93	61.34	6.9
PK07G	PK	793839	8081259	3.44	80.1	2.02	270.8	547.0	243	35.99	45.72	6.58
PK07H	PK	793849	8081259	2.27	77.7	2.02	175.1	353.8	101	15.22	19.73	4.3
PK07 L001	PK	793839	8081250	3.10	79.0	2.02	243.0	490.8	110	17.62	22.48	3.59
PK07 L002	PK	793847	8081249	2.94	104.1	2.02	303.9	613.9	183	27.47	26.57	4.47
PK07 L003	PK	793857	8081249	2.96	110.0	2.02	322.5	651.4	107	15.27	14.02	2.34
PK07 L004	PK	793859	8081287	2.60	100.5	2.02	258.5	522.2	309	44.5	44.76	8.52
PK07 L005	PK	793849	8081288	1.12	94.8	2.02	103.9	209.9	639	88.57	95.48	42.2
PK07 L006	PK	793840	8081288	0.80	96.2	2.02	76.8	155.2	155	22.06	22.97	14.22
PK07 L007	PK	793859	8081298	1.53	94.6	2.02	143.3	289.5	91	12.33	13.17	4.26
PK07 L008	PK	793849	8081298	1.09	99.0	2.02	106.9	216.0	156	23.3	23.75	10.79
PK07 L009	PK	793840	8081298	0.67	90.0	2.02	59.8	120.8	96	14.65	16.41	12.13
PK07 L010	PK	793858	8081307	2.27	85.6	2.02	192.3	388.4	59	8.05	9.5	2.07
PK07 L011	PK	793849	8081308	1.13	92.5	2.02	103.7	209.5	77	13.34	14.54	6.37
PK07 L012	PK	793839	8081308	0.59	102.0	2.02	59.6	120.3	42	6.3	6.24	5.24
PK07 L013	PK	793859	8081317	2.70	70.0	2.02	187.5	378.8	50	6.55	9.43	1.73
PK07 L0014-L0015	PK	793845	8081318	1.36	214.7	2.02	289.2	584.2	96	14.9	7.01	2.55
PK07I	PK	793857	8081258	2.96	79.4	2.02	233.0	470.7	103	15.49	19.68	3.29
PK08	PK	794290	8081168	2.96	68.0	2.02	199.1	402.2	100	14.74	21.91	3.66
PK11	PK	793666	8081144	4.70	48.5	2.02	470.6	950.7	56	8.24	8.23	0.87
PIT472	RFG	794535	8083635	0.00	370.0	2.05	0.4	0.8	9	1	0.27	133.33
PIT495	RFG	794706	8083422	0.00	1249.2	2.05	1.2	2.5	2	0.42	0.03	16.54
SG11	SG	793643	8081737	0.20	318.5	2.05	63.1	129.4	9	1.04	0.33	0.8

SG1A	SG	793689	8082974	0.10	817.5	2.05	81.0	166.0	65	9.23	1.14	5.56
SG1B	SG	793712	8082934	0.10	912.9	2.05	90.4	185.4	1703	237.7	26.29	128.24
SG1C	SG	793682	8083010	0.10	877.5	2.05	86.9	178.2	126	16.17	1.86	9.08
SG1D	SG	793688	8082931	0.10	1869.0	2.05	185.1	379.5	271	37.73	2.04	9.94
SG1E	SG	793632	8083036	1.00	886.0	2.05	877.5	1798.8	22	3.02	0.34	0.17
SG1F	SG	793653	8082973	0.27	2055.4	2.05	552.8	1133.2	-99	-99	-99	-99
SG28	SG	793626	8081900	0.15	1803.5	2.05	267.9	549.2	136	15.95	0.89	2.9
SG2A	SG	793508	8083011	0.15	419.7	2.05	62.3	127.8	37	4.19	1.01	3.28
SG3A	SG	793561	8082593	0.75	357.0	2.05	265.1	543.4	20	2.63	0.74	0.48
SG4A	SG	793599	8082453	0.50	177.0	2.05	87.7	179.7	83	11.45	6.53	6.37
SG4B	SG	793606	8082420	0.40	232.2	2.05	92.0	188.6	27	3.37	1.47	1.79
SG5A	SG	793585	8081678	0.30	2850.2	2.05	846.7	1735.6	296	43.5	1.54	2.51
SG5B	SG	793607	8081663	0.30	2390.9	2.05	710.3	1456.2	214	30.69	1.3	2.11
SG5C	SG	793627	8081654	0.30	1350.7	2.05	401.3	822.7	46	5.22	0.39	0.63
SG5D	SG	793644	8081647	0.20	842.2	2.05	166.8	342.0	-99	-99	-99	-99
SG5E	SG	793569	8081680	0.20	218.1	2.05	43.2	88.6	6	0.78	0.36	0.88
SG5F	SG	793624	8081606	0.20	1205.6	2.05	238.8	489.5	8	1.11	0.09	0.23
SG6A	SG	793641	8083199	0.10	3594.8	2.05	356.0	729.8	472	68.16	1.91	9.34
SG7A	SG	793686	8081513	0.30	1421.3	2.05	422.3	865.7	41	5.23	0.37	0.6
SG8A	SG	793625	8082247	0.15	694.3	2.05	103.1	211.4	45	7.23	1.05	3.42
SG8B	SG	793622	8082287	0.15	558.0	2.05	82.9	170.0	16	2.91	0.53	1.71
SG8C	SG	793617	8082326	0.15	632.6	2.05	94.3	193.3	9	1.41	0.22	0.73
SG8D	SG	793609	8082362	0.15	819.6	2.05	121.5	249.2	-99	-99	-99	-99
SG9A	SG	793891	8081737	0.25	648.7	2.05	161.0	330.0	71	8.71	1.35	2.64
SG10	SG	793736	8082829	0.05	732.9	2.05	36.3	74.4	13	1.68	0.23	2.26

(Missing data coded -99)

The NNDC bulk sampling program suffered from the following deficiencies:

i. Due to staff problems pertaining to the field technicians, not all pits were properly surveyed and in the case of the deeper Proto-Kunene pits, were not properly face-mapped
ii. In some cases, pit sample material was stockpiled and only partly processed, again as some of it did not look like typical Kunene diamond-bearing gravels were *expected* to look. Grades shown therefore must be considered minimal and not properly representative.
iii. Sample pits that were not immediately surveyed, could not be surveyed at a later date, as the unceasing southerly wind caused the pit to be filled up with dune sand within a week or so.

1.7.3.3.13 Formal Resource Estimation work (Phase I)

T1.3 (i)

A formal Resource Estimation attempt was made in 2014 but under special conditions.

a. In the Proto-Kunene where pit depth and gravel thickness exceeded 0.5m with two or more lenses of unconsolidated material (sand and gravel), grades were calculated and reported in the standard Carats per 100tons.
b. In the Shallow (thin) Gravel Gullies, and the Rough Floor Gullies, grades were converted to and reported as Carats per 100m^2. It was not always possible to formally measure a gravel thickness, as (i) in the Rough Floor Gullies where there are diamonds but no measurable gravels, and (ii) the bedrock with micro-traps between the individual gravel-bearing gullies, where it was also not possible to measure a gravel thickness.
c. Using Carats per 100m^2 as a grade specification circumvented the bulk density problems associated with the reported Geolab sampling results. (See 1.7.2 Period: 2001 - 2010).

This formal Resource Estimation suffered from the following conditions.

a. The Shallow (thin) Gravel Gullies were sampled in a narrow N-S zone (see Fig 24 below)
b. The Rough Floor Gullies were only sampled at two localities (see Fig 24 below)
c. The bulk sample results are extremely variable over very short distances
d. The Coefficient of Variation (CoV) has a value of 3.09 for some 103 bulk samples in the Shallow Gravels. For any dataset with a value for the CoV exceeding 2.0, it will be difficult to effectively use geostatistics to estimate resource grade.

However, an estimation process was attempted, using Inverse Distance Weighted (IDW), and a Trend Surface (polygonal) estimate. A kriging estimation process (KB2D) was also tried.

None of these approaches gave satisfactory results, as conditions mentioned above required extrapolation, which results in high grade estimation variances. The results are summarised in the table below.

The Coastal Dune area is just a sand-covered Shallow Gravel area and the amount of carats and grade were pro-rata derived from the Shallow Gravel estimates. The estimates for the Rough Floor Gully area seems excessively high.

TABLE 11: RESOURCE ESTIMATION RESULTS SUMMARISED - 2014

Estimation Process	**Area**	**Carats**	**ctp100sqm**
Pro-Rata	Coastal Dune Area	11,804	1.22
KB2D	Shallow Gravels	34,717	1.22
KB2D	Rough Floor Gullies	81,985	1.50
Estimation Process	**Area**	**Carats**	**ctp100sqm**
Pro-Rata	Coastal Dune Area	26,819	2.76
Interpolation: IDW^2	Shallow Gravels	78,879	2.76
Interpolation: IDW^2	Rough Floor Gullies	405,014	7.41
Pro-Rata	Coastal Dune Area	37,093	3.82
Interpolation: Quadratic Polynomial	Shallow Gravels	109,097	3.82
Interpolation: Quadratic Polynomial	Rough Floor Gullies	50,093	0.92

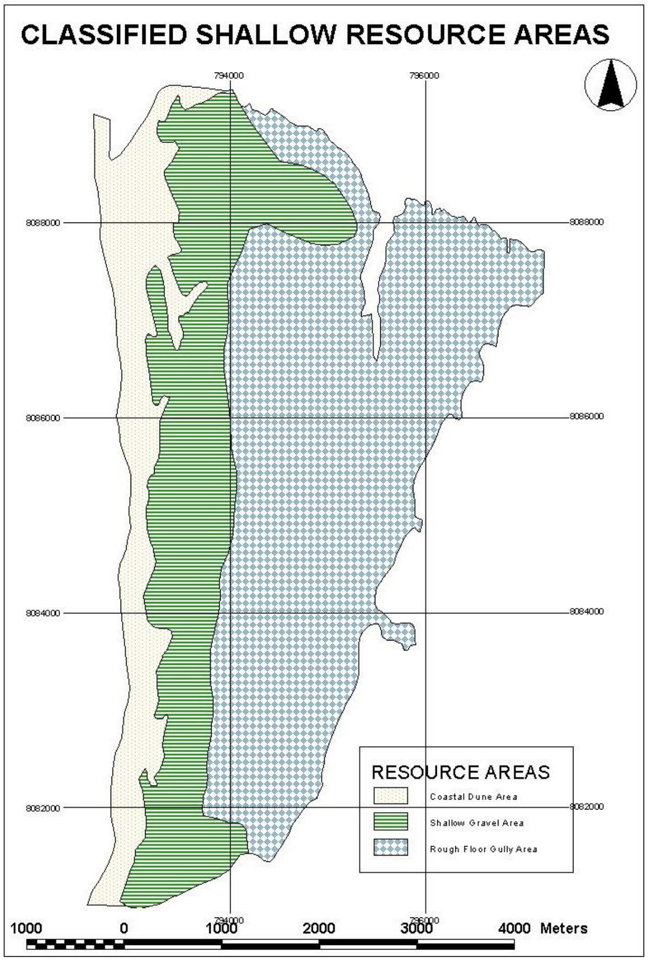


Fig 24: Classified Resource Areas

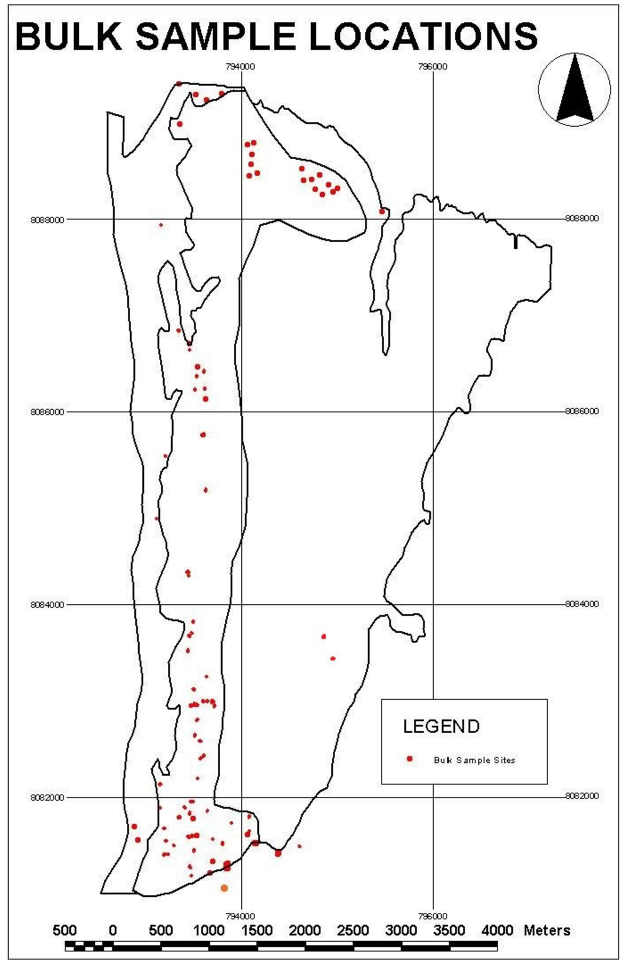


Fig 24: Bulk Sample Sites

1.7.3.3.14 Formal Resource Estimation work (Phase II)

T1.3 (i)

The literature on Geostatistical Resource Estimation suggests that under the conditions listed above, there may be three geostatistical approaches that will give results that are more reliable. These are the non-linear Multiple Indication Kriging (MIK) and Multi-Gaussian Simulation (MG) and the third is a simpler co-kriging process where more representative secondary data in is used to condition the sparse primary data.

NNDC Executive Management requested that all diamond grades are reported as carats per 100 tons. In the case of a gravel thickness too thin to be measured, it was assumed that the gravel thickness is a uniform 0.001m over the area.

All gullies have been mapped by satellite imagery and eventually grouped into two groups, (a) gravel-bearing gullies and (b) rough floor gullies (gullies with no gravel but containing diamonds) which is a special case in which the gravels have been eroded and washed into the Proto-Kunene. The Coastal Dune area is similar to the Shallow Gravels with the exception that it is covered by low coastal dunes. Indeed all Shallow Gravels strike NNW and disappear under the coastal dune belt.

The new resource estimation process involved the following:

i. Assume a gravel thickness of 1mm where it is not physically measurable
ii. Model gravel thicknesses in the Shallow (thin) Gravel Gully area from the bulk sample data
iii. Convert all bulk sample data to carats per 100tons (Geolab data were be recalculated using their pit dimensions, reported gravel thickness and the Geomine bulk density data)
iv. Determine indicator variograms for the gullies (from the Geo-Eye mapping)
v. Determine variograms for the diamond grade distribution
vi. Co-krig the resource grade with the gully indicator variography

See also 4.2 Estimation and modeling techniques for detail of the estimation process.

2.0 PROJECT DATA

2.1 Data management and database

T2.1

The volume of resource data produced by the project is quite small, eg, 158 bulk sample pits since 2008. This data volume makes simple Excel-based recording processes feasible and easy to manage.

The exploration process is quite simple as well, with bulk sampling the major activity. There is no complex geology to manage, no adverse geochemistry or metallurgy and the project employs a very small staff complement. The general resource thickness of maximum 0.5m in the Shallow (thin) Gravel gullies allows for an effective 2D resource evaluation process, while the greater depth of the Proto-Kunene will eventually require a 3D resource data management and modeling system. Now however, all operations within the Proto-Kunene area a have shallow depth of currently maximum 8m and make an Excel process still feasible.

The major administrative burden is the logistics, which given the location of project and its access routes are very complex and challenging.

The project maintains two backup storage facilities, being an encrypted backup data drive on-site and master backup data drive, also encrypted, at NND Head Office, both of which contains a complete copy of the Project Data as it exists on the consultant's back-up storage as well as the active directories.

2.2 Spatial data

T2.2

Spatial data have been obtained by a variety of processes:

<u>BULK SAMPLING</u>

I. Pre DGPS

a) Sample blocks were pre-planned in 10m x 10m units and the corner coordinates loaded into an ordinary handheld GPS
b) These coordinates were then located in the field and adjusted for positioning to cover the sample location more effectively. Block corner positions were adjusted by measuring tape to be exactly in 10m x 10m increments and rectangular.

c) At the completion of the pit sampling, the gravel thickness were measured by tape/ruler on all four sidewalls and averaged over the 10m x 10m block
d) Sketch maps of the actual pit as dug, was made with dimensions measured by tape whether beyond or inside the planned boundaries.
e) Volumes were calculated by hand and confirmed by GIS Raster Volume calculations using differences in surfaces (GLOBAL MAPPER, QGIS, SAGA, SURFER).

II. DGPS deployed - Gravel Gullies

a) Sample blocks were pre-planned in 10m x 10m units and the corner coordinates loaded into an ordinary handheld GPS
b) These coordinates were then located in the field and adjusted for positioning to cover the sample location in the gully more effectively. Block corner positions were adjusted by measuring tape to be exactly in 10m x 10m increments and rectangular.
c) These positions were then accurately surveyed by DGPS
d) Pre-pitting surface was surveyed by DGPS at several localities within the pit area, extending to some 2m outside of the pit boundary
e) At the completion of the pit sampling, the gravel thickness were measured by DGPS at several points all four sidewalls as well as several locations within the pit.
f) Survey data was used in a GIS system to create two raster surfaces, a pre-pit surface and a pitted surface and pit sample volumes calculated by GIS Raster Volume functions using differences in surfaces (GLOBAL MAPPER, QGIS, SAGA, SURFER).

III. DGPS deployed - Proto-Kunene

a) Sample blocks were pre-planned in 10m x 10m units and the corner coordinates staked by DGPS.
b) Pre-pitting surface was surveyed by DGPS at several localities within the pit area, extending to some 2m (or more) outside of the pit boundary
c) At the completion of the pit sampling, the pit outline was surveyed by DGPS.
d) At several locations on the pit sidewalls the sedimentary succession was mapped using a tape and were correlated across the pit and named uniquely. At each of these measuring locations, the position was surveyed by DGPS.
e) The pit floor was surveyed at several locations within the pit, if on bedrock.
f) All of these data were loaded into a GIS system to create a number of raster surfaces, and individual sedimentary volumes were calculated by GIS Raster Volume functions using differences in surfaces (GLOBAL MAPPER, QGIS, SAGA).

SURVEY CONTROL

There are no formal Survey Control Beacons that are tied into the Namibian Cadastral System within at least a 100km from the site.

The operational process was therefore to erect a fixed control beacon at the DGPS base station site and all surveys were done relative to this beacon. The elevation, in metres above mean sea level (a.m.s.l.) was determined by actually surveying points on the beach at low tide and at high tide and average the elevations to obtain a working mean sea level elevation.

This elevation was linked to the Control Beacon at the base station. The normal DGPS easting and northing values (in UTM32S/WGS84) were accepted as suitable.

MAPPING

Mapping was done normally using a hand-held GPS where surface mapping was necessary. The bulk of the mapping was done from geo-referenced satellite imagery, mainly Geo-Eye.

2.3 Geological data

T2.3

The deposit is an alluvial diamond deposit that could be split into two main areas, the Gully Zone and the Proto-Kunene.

The Gully Zone is a huge area comprising some 2200ha of N-S trending gullies. Within this gully system some 667ha consists of gullies filled with very thin diamond-bearing gravels, the so-called Shallow Gravels. Another 346ha along the coast and above the high water mark consists of Shallow Gravels covered by coastal dunes, the so-called Coastal Dune area. Between the Shallow Gravels and the Namib Sand Sea lies an area of some 1260ha, the so-called Rough Floor Gully Area, in which all gullies were denuded of gravels but diamonds are still found in cracks and fissures ("micro-traps") in the gully bed.

The major feature on the project is a Dwyka-age glacier valley that pre-dates the present Kunene River, the so-called Proto-Kunene. It trends out of Angola some 30km inland and then curve down and around to the south-west to cross the southern part of the project area, and there it is some 8km wide.

All of the gullies drain southwards into this Proto-Kunene which is also the area of main economic potential. The original diamond-bearing material consists of the so-called Mega-Conglomerate which is a fluviatile sediment varying in thickness from 0.5m to 5m and consists of an unsorted mass that varies from fine sand to multi-ton boulders. It seems to have been deposited under conditions of extremely turbulent flow. The grade is very low and does not contribute much to the overall project resource.

The main deposit type within the Shallow Gravels is a marine-reworked sediment varying in thickness from 0 cm to 50 cm in which the diamonds seem to be concentrated at the base of the gravel layer. These Shallow Gravels have shown some very high-grade areas where the gravel is a very thin layer of only some 10-15cm. Grain size, although it varies from fine sand to course cobbles, it is typically more of a coarse gravel type.

All of the gullies drain into the Proto-Kunene and at least two diamond-bearing gravel deposition episodes have been recognised, the earliest being the deposition of the mega-conglomerate and the latest the erosion from the Gully Zone. It is assumed, but not yet proven, that a possible enrichment of diamonds from the northwards flowing longshore current may also have occurred as is common elsewhere along the coast.

Several alternating layers of gravel and sand are observed in the Proto-Kunene sedimentation and, like the Shallow Gravels, resource grade variations are large and occurs over very short distances.

Prospecting access is hampered by dunes in the eastern reaches and by very shallow groundwater in the west. Generally only the top 5-8m have been explored where accessible, although geophysics indicate a depth of some 300-350m.

The fluviatile phase (the Mega-Conglomerate) in the southern reaches of the gullies directly overlies the much older bedrock non-conformably and in the far southern reaches of these gullies overlies a massive silty/clayey red to yellow-coloured sand with no signs of bioturbation - the "*Red Sand*". This "*red sand*" in turn overlies the bedrock non-conformably.

The Mega-Conglomerate horizon eventually grades into a finer grained gritty sediment southwards, away from the Proto-Kunene north bank (see figure below). This grit may be well cemented in places with varying amounts of fossil shell material.

The contact between the Red Sand and the overlying coarse sediments, whatever it may be, can be complex, as is shown in the photo of PK06 below.

Fig 25: PK06 Red Sand - Grit Contact

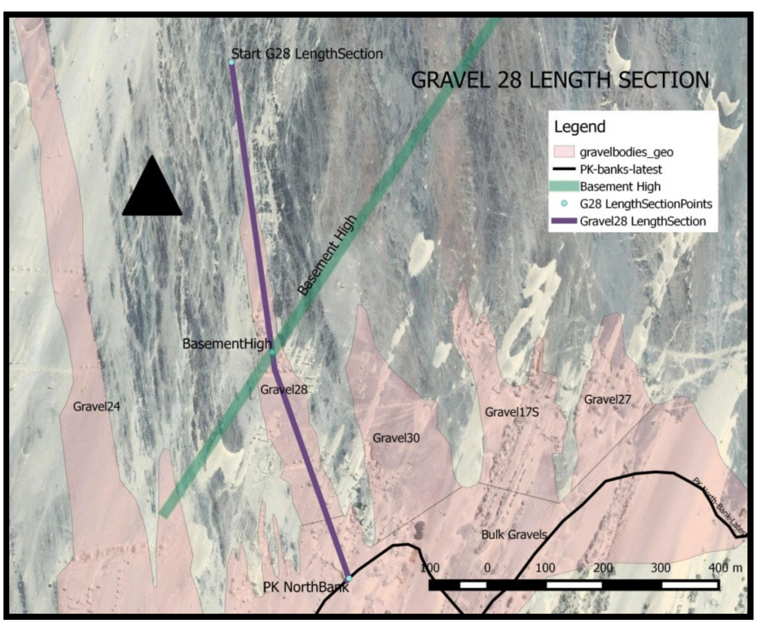


Fig 26: Basement Topography - Mega-Conglomerate Gullies (Refer Fig 04 for location)

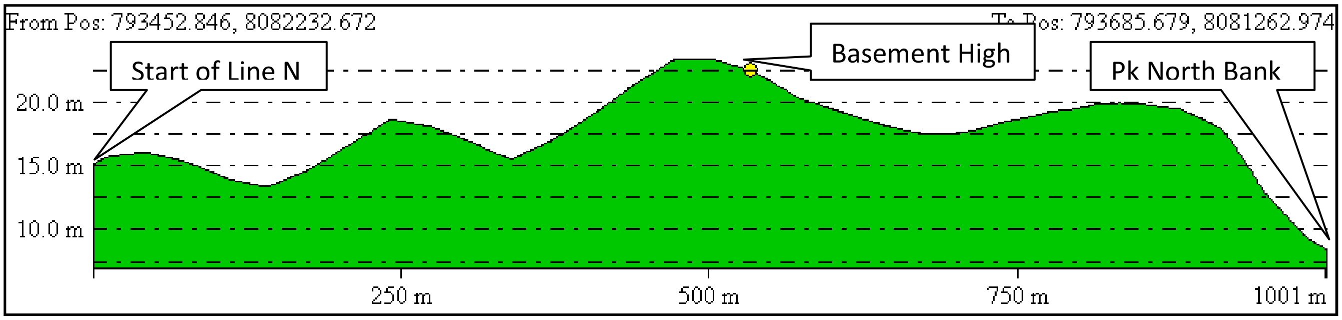


Fig 27: Elevation Profile - Gravel28 Length Section: N to S

The deposition of the Mega-Conglomerate seems to pre-date the crustal buckling as it was clearly buckled together with the bedrock.

The primary characteristic of the fluviatile phase (Mega-Conglomerate) is the grain size distribution, which varies from multi-ton rounded boulders to fine sand. There is no indication of stratification, or of imbrication, and it seems clear that this sediment was deposited under conditions of extreme turbulent flow, such that the turbulence created a dense transport medium in which the big boulders could be easily transported in the confining channels of the gullies.

Fig 28: Mega-Conglomerate & Close-up

Fig 29: MC Boulder

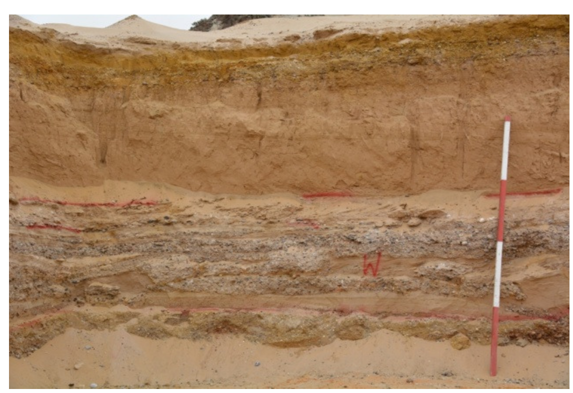


Fig 30: PK08 Pit - West Sidewall

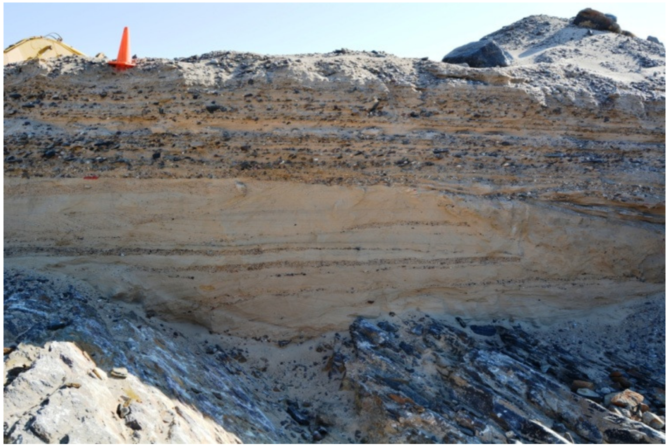


Fig 31: EG1C Pit North Sidewall

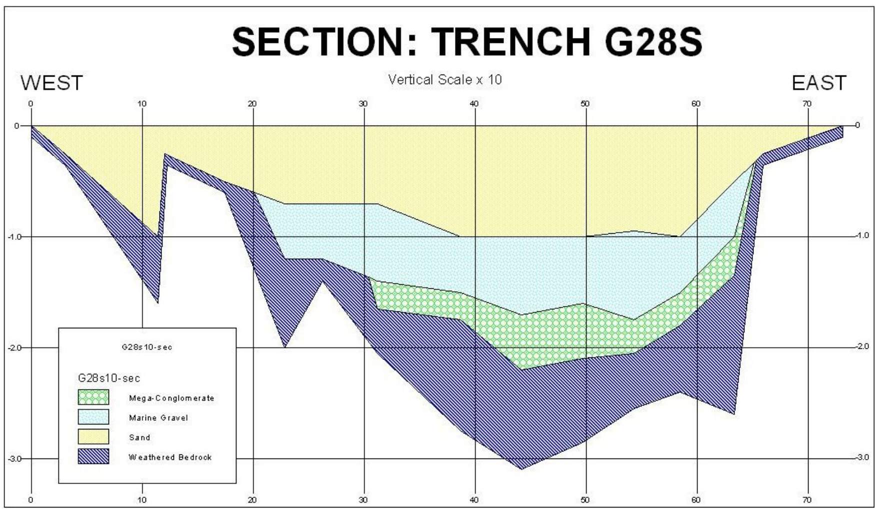


Fig 32: Section W-E through MC Gully (Gravel 28 - 11.76161E/17.33123S)

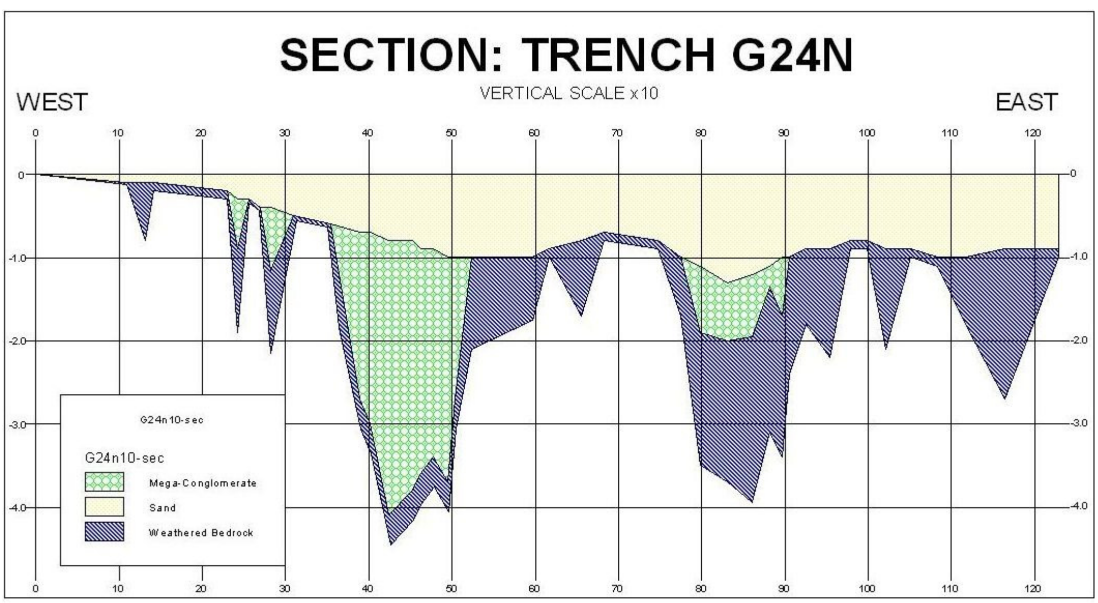


Fig 33: Section W-E through MC Gully (Gravel 24 - 11.75903E/17.330407S)

Stratigraphy is indicated in the schematic N-S Section below

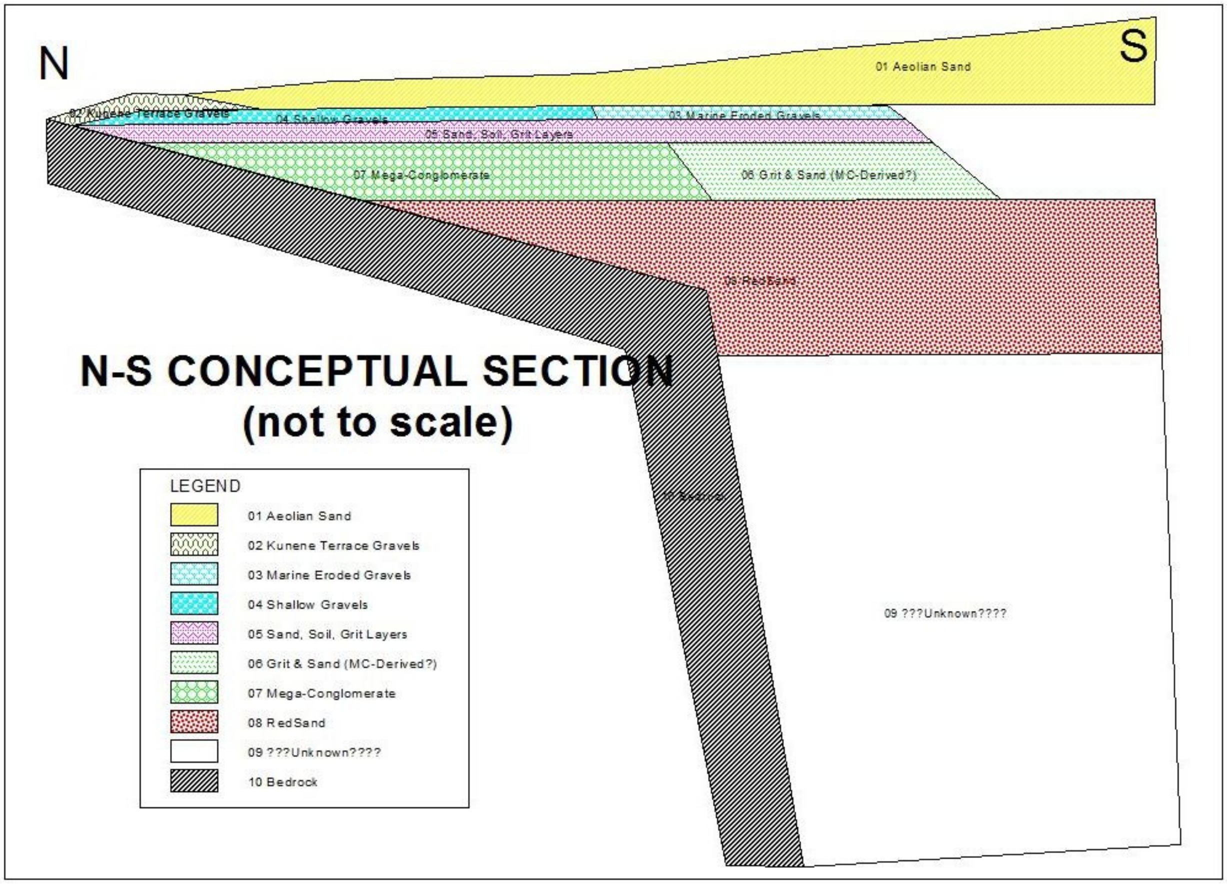


Fig 34: Stratigraphy (Conceptual Section)

One suggestion is that the Red Sand correlates with the Tsondab Fm, in which case the age of the (mega-conglomerate) fluviatile deposit age is less than 30Ma. On the other hand, it had to be old enough for the bedrock to have undergone some buckling to create the basement high shown in Fig 26 above. A section line through Gravel 28 from north to south shows that the base of the Gravel 28 gully (with contained gravel) runs uphill to the basement high, the bedrock rising some 5m and then falls down again to the Proto-Kunene. The G28 profile section above derives the elevations from an ASTER DTM, but it has been confirmed by actual DGPS surveying. If the Mega-Conglomerate deposit predates this, then it would be exceeding 90Ma.

Another major gravel gully east of Gravel 28 and parallel to it terminates against the basement high and then eventually continues on the other side as Gravel 30.

One mechanism for tremendous freshwater floods would be a melting glacier and one for continental edge buckling would be continental breakup such as the Gondwana breakup some 120Ma ago.

2.4 Specific gravity and bulk tonnage data

T2.4

The initial working assumption for bulk density was 2.0t/m^3 and this was not too far off. All of the shallow gravels, in fact all of the unconsolidated resource material, were either just less or just more than this initial assumption of bulk density (see 1.7.3.3.10 Bulk Density Determination).

The gravels in the Shallow (thin) Gravel Gullies varies considerably, depending on the actual composition (fine material and coarse material content) and the amount of windblown sand cover. The determination of the gravels in the Shallow (thin) Gravel Gullies were therefore conducted at five (5) localities and the resulting result oscillated around 2.05t/m^3.

The determination of the PK Surface Gravel was conducted at 3 localities with the average as given above. The other localities where this material could be found was at PK02 and the Old Plant site, but were under a considerable thickness of dune sand.

The other PK densities, lower sand and lower gravel lenses were done at the PK07 pit at two localities each by removing an amount of overlying material on the pit sidewall to expose enough level surface for the small pit to be dug.

Results are as given above (see 1.7.3.3.10 Bulk Density Determination).

Given the nature of the unconsolidated resource material, and uncertainties in the grade specification, these results can be considered quite adequate.

For the consolidated gritty material, three chunks were taken, one from the Old Plant Site. and two from the PK07 pit site. Again, results can be considered quite adequate.

TABLE 12: BULK DENSITY DETERMINATION

Sample No	Sample	GPS Ref	Sample Type	Sample Kg	Litres	Density (Ton/m^3)	Effective
1	S33	D001	Gravel	19.09	11.64	1.64	
2	S06	D002	Gravel	26.53	12.74	2.08	2.08
3	S39	D003	Gravel	19.07	11.23	1.70	
4	S40	D004	Gravel	21.68	10.88	1.99	1.99
5	S41	D005	Gravel	21.36	10.85	1.97	
6	S42	D006	Gravel	19.49	9.29	2.10	2.10
7	S43	D007	Gravel	19.48	9.77	1.99	1.99
8	S47	D008	Gravel	20.54	9.82	2.09	2.09
9	PK05 S	D009	Surface Gravel	18.48	10	1.85	1.85
10	PK05 W	D010	Surface Gravel	14.33	7.42	1.93	1.93
11	PK07 B W	D011	Upper Gravel	18.83	9.08	2.07	2.07

3.0 SAMPLING

3.1 Sampling governance

T3.1

The main concern with the sampling was that the sample size should be adequate for the Kunene Project, ideally at least 50 tons or roughly $25m^3$. Of the Geolab samples, 91% exceeded that requirement. In the Geomine case, 74% of the samples exceeded that requirement.

It is to be expected that in a lower- grade area, the bigger the sample should be to actually be successful in getting a stone in the sample. This was not really borne out by the actual sample results, given poor positive correlation between number of stones and sample size.

The expected correlation between sample size and stones recovered did most likely not realise because of diamonds (and gravel) not recovered due to the use of the excavator to dig the sample pit and then, even if the excavator did pick up the diamonds, it was lost through the assumed low recovery efficiency of the then rotary pan utilised. Finally, in a hand-sorting process, it is quite possible that stones were missed.

Geomine started using "tracers" in the jigging process to ensure that stones are not lost. These tracers were just white painted garnets. The process was that a specific quantity of "tracers" was put in jigging feed stream and this exact quantity is expected to be recovered on the sorting table. NNDC is using more modern and custom manufactured tracers to monitor the efficiency of the DMS plant.

Finally, using vacuum suction mining machines ensure that a maximum possible stones are recovered from the sample pit.

The sample processing was biased in some of the Geolab and Geomine samples because portions of the sample were considered not to be diamond-bearing because it did not look like the expected diamond-bearing gravels and were therefore not processed.

Sorting was by hand, but in the Geomine case, was monitored by Security staff and video cameras. The NNDC samples were initially hand-sorted under the same conditions but the sorting process was improved and automated by installing automatic x-ray sorters.

3.2 Sample method, collection, validation, capture and storage

T3.2

The sampling method was partly described above (see *BULK SAMPLING* under 2.2 Spatial data above).

3.2.1 Shallow (thin) Gravel Gullies

The excavator was used to dig the thin gravels and in most cases the operator went too far into the bedrock, digging out an unnecessary amount of bedrock material (~40%) which had to be transported and processed. In other cases the excavator did not extract all of the visible gravels and the basal portions of the gravel lens remained in the pit. This basal portion is expected to be the main diamond bearing portion of the gravel.

It was not possible to selectively sample horizontal layers within these thin gravel lenses (<50cm) with the excavating equipment available.

3.2.2 Proto-Kunene

The Proto-Kunene sedimentation is more complex than the shallow gravels with several distinct deposition phases consisting of alternating layers of sand (both wind- and water transported) and grits. Initially it was attempted to scoop up only a certain layer at a time, thereby attempting to determine the layers in which the diamonds were best concentrated. This was abandoned quite quickly as it (a) was not possible, given the size of the excavator bucket, to dig out separate layers and (b) it seriously extended the sample processing time, as the system is "cleaned" between samples to prevent contamination. Splitting a single sample into several different sub-samples made the processing time unacceptably long. In addition, even if it the sampling splitting was feasible, actual mining would not effectively extract the individual thin layers.

Initially sample processing was done sub-optimally by selecting which material was sent to the plant based on visual inspection, but eventually this was stopped and the whole sample sent for processing as diamonds were found in material that were not considered to be diamond-bearing from prior experience.

A major issue is the representativity of the individual samples regarding the whole deposit. In the shallow gravels, each gravel gully may be unique and may be different from another. This was not tested or evaluated. The extreme grade variation even in the same gully without any visible physical cause may suggest however that differences from gully to gully may be subsumed in the variation within the same gully.

In the Proto-Kunene, differences in sedimentation over very short distances, on a scale of metres in some cases would present the same argument as the differences between gullies and the variations within a gully.

3.3 Sample preparation

T3.3

Sample processing consists of screening out the over-size and undersize (sand fraction). As the material is generally unconsolidated, no crushing was necessary. Typically, the screening would start with a grizzly feed to screen out the >200mm rocks (mainly bedrock ripped up by the excavator). Then it would be fed into the plant where the -1.2mm sand fraction and the +8mm coarse fraction were screened out. This material is then fed into the DMS to concentrate the heavy fraction and from there through the x-ray sorting machines to recover the diamonds. Tracers are regularly used to check the concentration and recovery circuit.

All diamonds are recorded every day and entered into the Register, which is checked against the physical stones by staff from the office of the Diamond Commissioner. The well-cemented grits and conglomerates found occasionally in the PK area were not processed as there were no crusher on site at the time to crush these for sample processing.

3.4 Sample analysis

T3.4

Sample analysis is simply done by diamond recovery in the processing plant, and as is mentioned earlier, the plant itself is continuously monitored by feeding and recovering tracers.

4.0 INTERPRETATION/MODELING

4.1 Geological model and interpretation

T4.1

The geology was reliably mapped from satellite imagery (see 1.7.3.3.6 Mapping by Satellite Imagery above). The main features as it pertains to this report are the gully systems which are either filled with older fluviatile sediments (*the Mega-conglomerate*), or younger marine sediments (*the Shallow Gravels*) or from which the filling has been eroded leaving a bare gully with diamonds in the cracks and fissures in the gully bed (the Rough Floor Gullies).

The southwards draining gully system has caused these sediments (discussed above) to be transported into the Proto-Kunene. The last erosion phase that also partly or completely removed the diamond-bearing marine gravels from the gullies, have caused it to deposited as thin gravels beds on or near surface in the Proto-Kunene, on top of the earlier deposits.

Each marine re-work phase has caused the remaining sediments to be re-concentrated, so that the marine sediments (Shallow Gravels), derived from the fluviatile Mega-Conglomerate, are of much higher grade, while the very young material washed into the Proto-Kunene, has the highest grade of all.

However, since no sampling has penetrated deeper than about 10m into the Proto-Kunene, it is not known whether there are earlier diamond-bearing sediments deposited at deeper levels, as is expected.

4.2 Estimation and modeling techniques

T4.2

The small number of relatively sparsely distributed bulk sample pits suggested that additional data should be used to ensure a best possible estimate.

4.2.1 Gravel Thickness Estimation

T4.2 (i)

The estimation process started off with an initial phase where the distribution of gravel thickness was estimated on a 10m x 10m grid. Since the gravel-bearing gullies were mapped out in some detail using high-resolution Geo-Eye imagery, this mapping data was exported at the Geo-Eye resolution (0.5m pixel size) and then reduced to a 10m grid where each grid point presented uniquely one of five (5) surface lithology types, namely: Gully, Soft Bedrock, Hard Bedrock, Sandy Soil or Dune Sand. The Gully data set was again split up into two unique data sets, namely: "Gully with Gravel" and "Gully without Gravel". The two bedrock types were combined into a single Bedrock dataset. Each of these datasets were given an "***Indicator"*** attribute

The Gully dataset were given a Gully-Indicator value of 1 (coding the datapoint as being within a mapped gully) and the Bedrock dataset was given a Gully-Indicator value of 0 (coding the datapoint as NOT being within a mapped gully).

The Gravel sub-dataset were given a Gravel-Indicator value of 1 (coding the datapoint as being within a mapped gravel-bearing gully) and the remainder of the Gully dataset was given a Gravel-Indicator value of 0 (coding the datapoint as NOT being within a mapped gravel-bearing gully).

The two indicator datasets, the Gravel-Gully subset and complete Gully dataset were subjected to variography using SGEMS, with the following results.

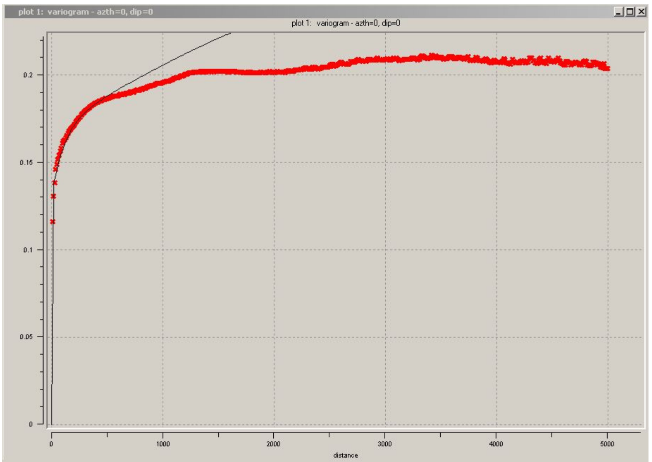


Fig 35: Semi-Variogram Gully Indicator (Long Range)

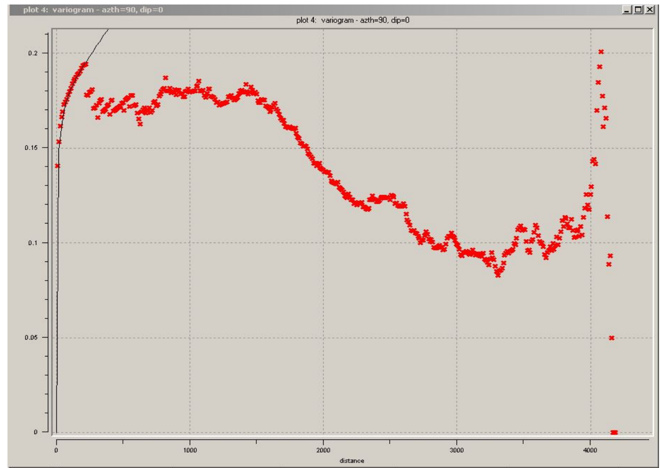


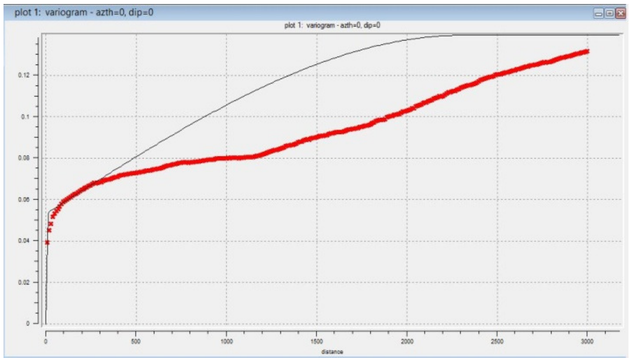
Fig 36: Semi-Variogram Gully Indicator (Short Range)

The actual semi-variogram ("*the variogram*") definition was derived from the modeling in SGEMS for the Gully Indicator data as follows:

TABLE 13: VARIOGRAPHY RESULTS - GULLY INDICATOR

Gully Indicator Variogram			
Population variance	0.25		
CoV	0.56		
	LONG Range		***SHORT Range***
Nugget (C_0)	0.13		
Struct 1		Struct 1	
Exponential		Exponential	
Direction		Direction	
Azimuth	0˚	Azimuth	90˚
C1	0.04	C1	0.04
Range	330	Range	100
Struct 2		Struct 2	
Spherical		Spherical	
Direction		Direction	
Azimuth	0˚	Azimuth	90˚
C1	0.08	C1	0.08
Range	3200	Range	1000

The Gravel-Indicator dataset has the following *variograms*:



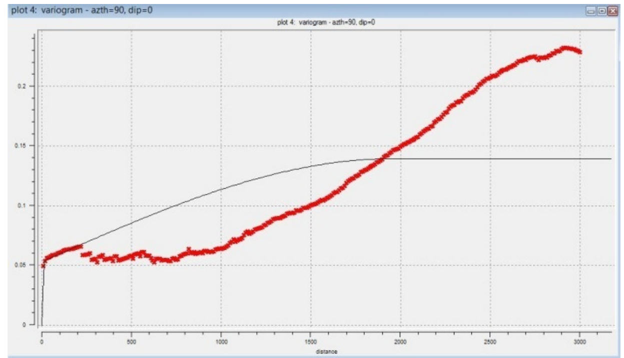


Fig 37: Semi-Variogram Gravel Indicator (Long Range) Fig 38: Semi-Variogram Gravel Indicator (Short Range)

The actual semi-variogram ("*the variogram*") definition was derived from the modeling in SGEMS for the Gully Indicator data as follows:

TABLE 14: VARIOGRAPHY RESULTS - GRAVEL INDICATOR

Gravel Indicator Variogram			
Population variance	0.14		
CoV	0.83		
	LONG Range		***SHORT Range***
Nugget (C_0)	0.03		
Structure 1		Structure 1	
Exponential		Exponential	
Direction		Direction	
Azimuth	0˚	Azimuth	90˚
C1	0.02	C1	0.02
Range	85	Range	40
Structure 2		Structure 2	
Spherical		Spherical	
Direction		Direction	
Azimuth	0˚	Azimuth	90˚
C1	0.09	C1	0.09
Range	2310	Range	1950

Finally, the Bulk Sample Gravel Thickness dataset was subjected to variography with the following results.

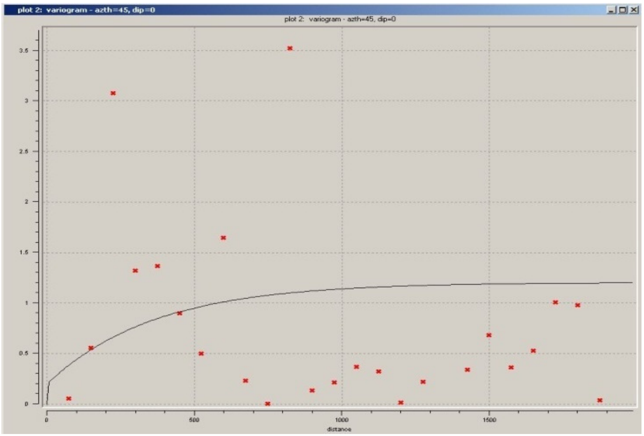


Fig 39: Semi-Variogram Gravel Thickness (Long Range)

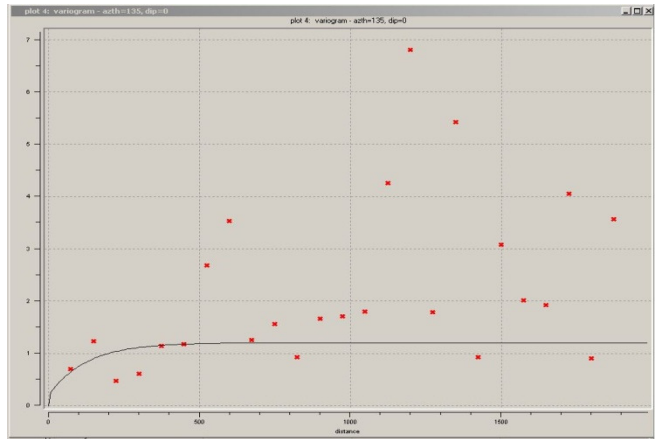


Fig 40: Semi-Variogram Gravel Thickness (Short Range)

The actual semi-variogram model definition was derived from the modeling in SGEMS for the Gully Indicator data as follows:

TABLE 15: VARIOGRAPHY RESULTS - GRAVEL THICKNESS

Gravel Thickness Variogram			
Population variance	1.21		
CoV	1.35		
	LONG Range		***SHORT Range***
Nugget (C_0)	0.20		
Struct 1		Struct 1	
Exponential		Exponential	
Direction		Direction	
Azimuth	45˚	Azimuth	135˚
C1	1.01	C1	1.01
Range	1100	Range	375

These variograms were used to estimate the gravel thickness over the gravel-bearing gullies using (1) the Kriging functon in SGEMS and (b) using the Co-Kriging function in SGEMS.

In both cases, the input data was the measured Bulk Sample Gravel Thickness and the Gravel Indicator Grid.

In the Kriging case (a) the gravel thickness was estimated at every point in the Gravel Indicator Grid where the grid point is located within a mapped gravel bearing gully. In the Co-Kriging case (b) the gravel thickness was estimated at every point in the Gravel Indicator Grid where the grid point is located within a mapped gravel bearing gully, but now conditioned by the Gravel Indicator dataset.

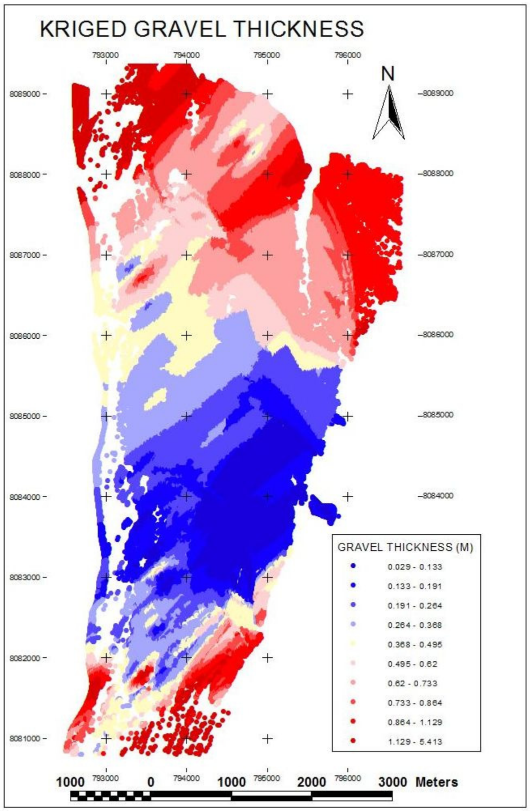


Fig 41: Kriged Gravel Thickness (m)

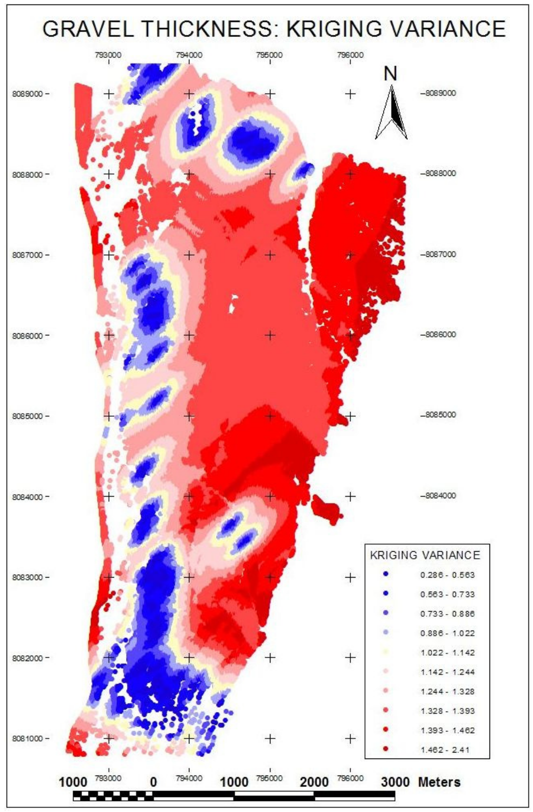


Fig 42: Kriged Gravel Thickness Variance

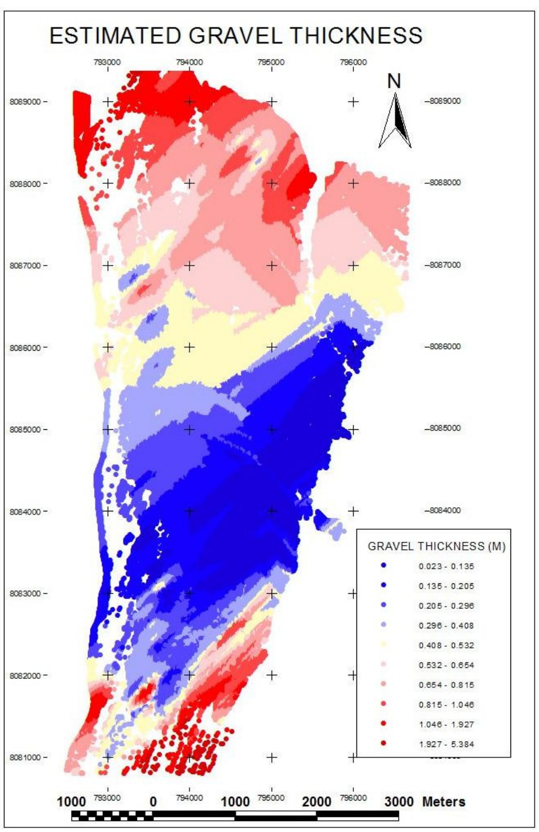


Fig 43: Co-Kriged Gravel Thickness (m)

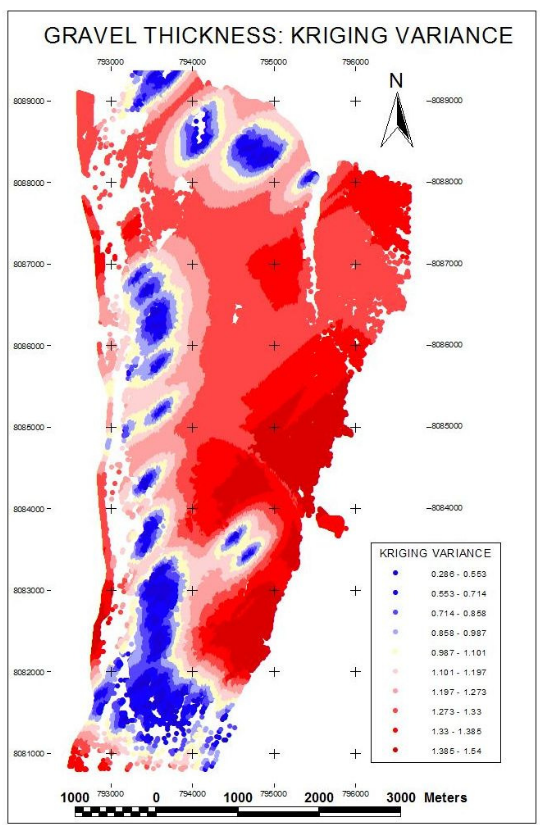


Fig 44: Co-Kriged Gravel Thickness Variance

Snapshots of the estimated gravel thickness over the project area are shown above. Note that increasing variance (more red) implies decreasing confidence in the estimate and indicates areas which should be sampled/prospected.

In order to fully assess the resource within the boundaries of the bulk sampling localities, it was necessary to determine the likelihood of a gully (either gravel filled or not) to be present at any given estimation point falling on sand and/or soil cover.

This was done by Indicator Kriging in SGEMS using the Gully Indicator dataset to determine the probabilities of gullies being present at every sample point within the Sand and Soil cover.

The snapshot below shows the estimated probability of finding a gully below the sand/soil cover. Generally the warmer colors (orange-red) implies a better than 50% probability for finding a gully beneath the sand/soil cover.

In this particular case, the higher probability estimation points, ≥70%, was added to the Gully- and Gravel Indicator datasets.

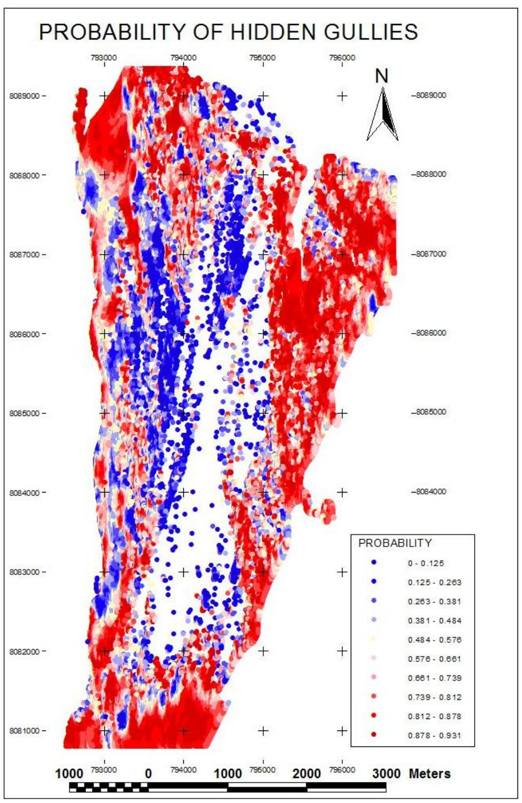


Fig 45: Probability of Gullies under Soil/Sand Cover

It is known that there are no shallow bedrock occurrences in the area of the Proto-Kunene where sampling have been done, and that gravels are found everywhere, even though it may be covered by sand and soil. Therefore all sample points within the Proto-Kunene estimation grid subset were positively Indicator coded as having containing gravels, independent of what the satellite image mapping may suggest.

The final Gravel Indicator dataset were subjected to a thickness estimation process. This dataset is also the one that were used in estimating resource grades (carats/100sqm and carats/100ton).

4.2.2 Resource Estimation

T4.2 (i)

The bulk sample pits initially dug by both Geomine and NNDC in the Proto-Kunene was done purely to get an idea of the subsurface geology, and the sample processing was done sub-optimally by deciding from visual inspection that certain portions of the sample volume is not expected to contain diamonds and would therefore not be processed. Recent experiences in the Proto-Kunene, particularly in the PK07 and EG01 sample areas, have shown that selectively processing only portions of the samples in the Proto-Kunene based on experience in the Shallow Gravels is not correct. NNDC has started to process the sample remainders still at the sample sites, and even with this program far from finished, has almost doubled the number of stones recovered per sample and have improved the sample grade significantly.

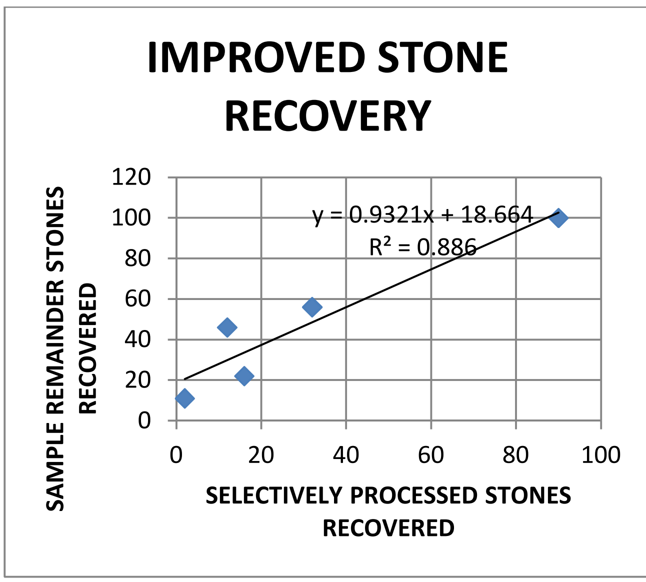


Fig 46: Improved Stone Recovery

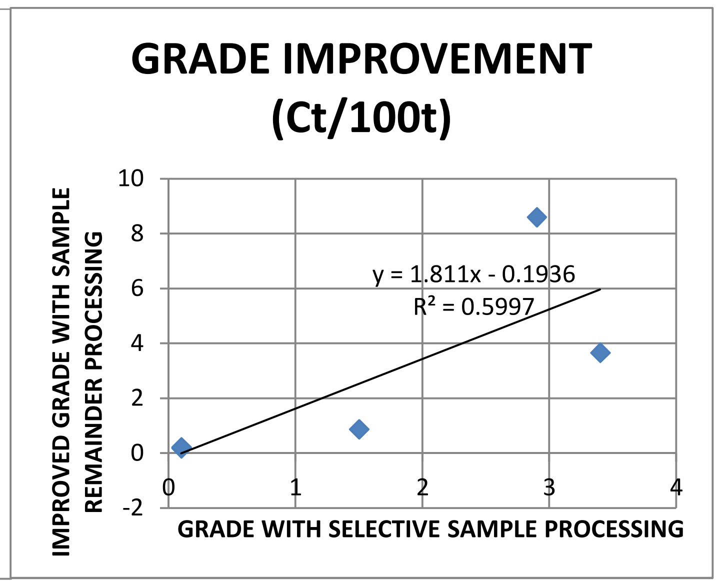


Fig 47: Improved Sample Grade

The actual estimation process was based on raw data reported (a) as carats per 100sq.m (ct/100sqm) and (b) as carats per 100tons (ct/100t).

The extreme variation in sample grades necessitated the removal of outliers that causes the statistical variation to show extreme values. The Coefficient of Variation has used been to winnow out the outliers by dropping the high values until the CoV reduces to a manageable value. It should ideally be less than one (1) and approaching unity, but the dataset could not also be too small, otherwise the variography would be meaningless. In this particular case, all sample values exceeding 8 ct/100sqm or 8 ct/100ton were dropped out of the variography datasets.

TABLE 16: STATISTICS TO DETERMINE OUTLIER DISCARDS

Ct/100sqm

MAX	N	%Data Discard	MEAN	STDEV	CoV
576	143	0	17.17	70.71	4.12
100	138	3.5	5.5	13.04	2.37
50	135	5.6	4.08	8.49	2.08
25	130	9.1	2.86	5.62	1.97
10	118	17.5	1.22	1.97	1.62
9	116	18.9	1.07	1.66	1.55
8	115	19.6	1.01	1.53	1.51
7	114	20.3	0.96	1.42	1.48
6	111	22.4	0.81	1.11	1.37

Ct/100ton

MAX	N	% Data Discard	MEAN	STDEV	CoV
678	143	0	11.87	60.45	5.09
100	139	2.8	4.19	9.31	2.22
50	137	4.2	3.35	6.20	1.85
25	134	6.3	2.64	3.92	1.48
10	125	12.6	1.82	2.39	1.31
9	122	14.7	1.63	2.09	1.28
8	119	16.8	1.46	1.81	1.24
7	119	16.8	1.46	1.81	1.24
6	115	19.6	1.28	1.56	1.22

The resulting variograms for the ct/100sqm grade specification were as follows:

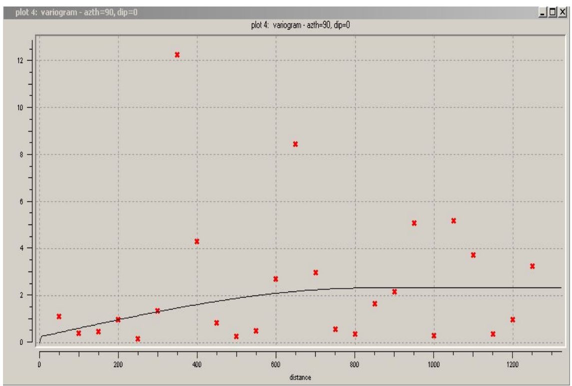


Fig 48: Semi-Variogram ct/100sqm (Long Range)

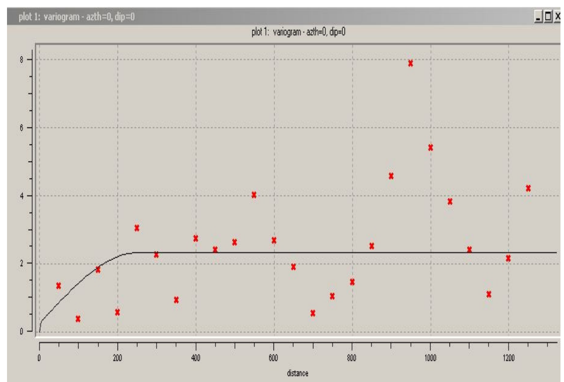


Fig 49: Semi-Variogram ct/100sqm (Short Range)

The fitted variogram model for the ct/100sqm grade specification were as follows:

TABLE 17: VARIOGRAPHY RESULTS - CT/100SQM

Ct/100Sqm Variogram			
Population variance	2.3338		
CoV	2.3		
	LONG		***SHORT***
Nugget (C_0)	0.25		
Struct 1		Struct 1	
Spherical		Spherical	
Direction		Direction	
Azimuth	90	Azimuth	0
C1	2.0838	C1	2.0838
Range	837.5	Range	250

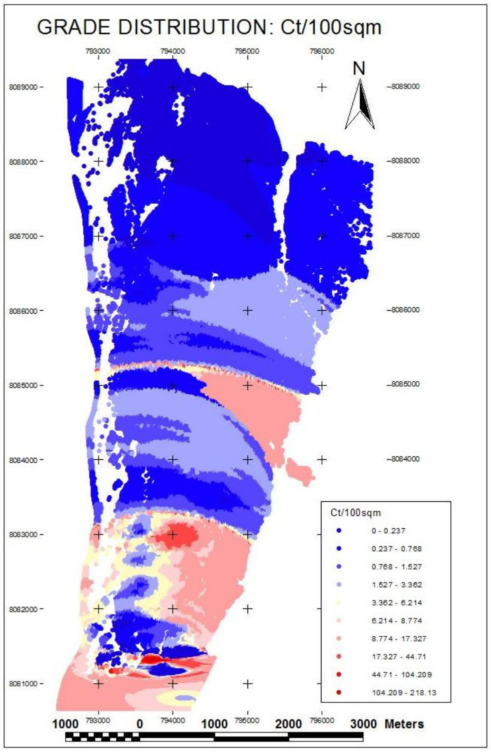


Fig 50: Final Co-Kriged Grade Distribution ct/100sqm

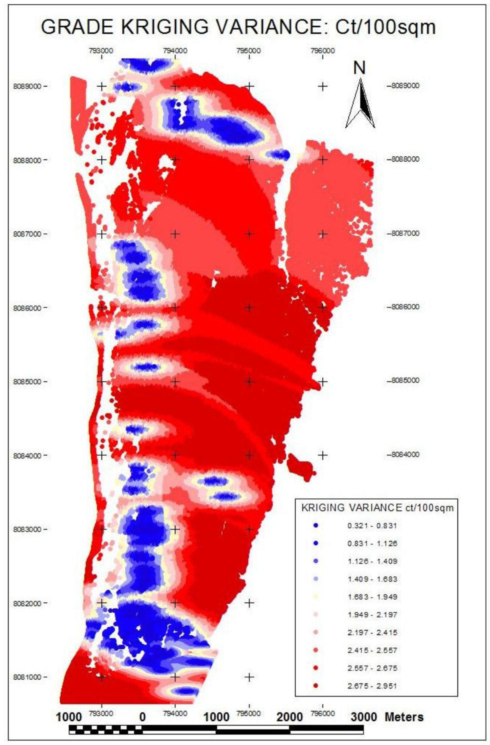


Fig 51: Final Co-Kriged Grade Distribution Variance

Variography on the ct/100ton dataset resulted in the following variograms:

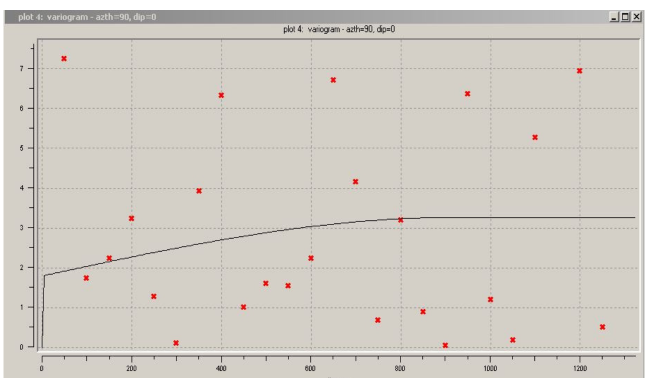


Fig 52: Semi-Variogram ct/100ton (Long Range)

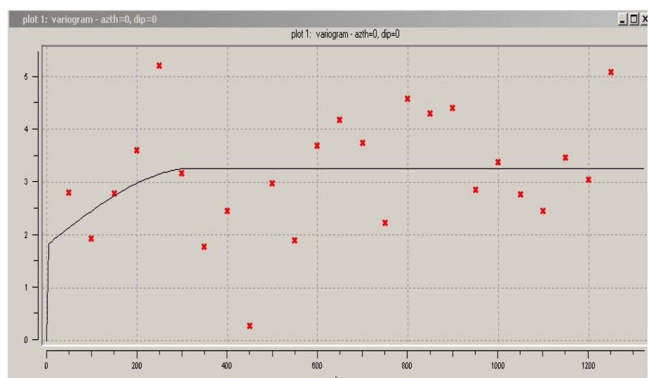


Fig 53: Semi-Variogram ct/100ton (Short Range)

The fitted variogram model for the ct/100ton grade specification were as follows:

TABLE 18: VARIOGRAPHY RESULTS - CT/100TON

Ct/100Ton Variogram			
Population variance	3.2641		
CoV	2.23		
	LONG		***SHORT***
Nugget (C_0)	1.8		

Struct 1		Struct 1	
Spherical		Spherical	
Direction		Direction	
Azimuth	90	Azimuth	0
C1	1.4641	C1	1.4641
Range	912	Range	325

It is clear from variography results shown in Figs 52 & 53 above, that the grade variation is in reality almost a random process (pure nugget), given the small number of data points.

Any directional variogram is therefore almost a matter of personal choice and different practitioners will almost certainly derive different directional variograms from the given data, provided that they can derive directional variograms at all. (see 10.3 Software below).

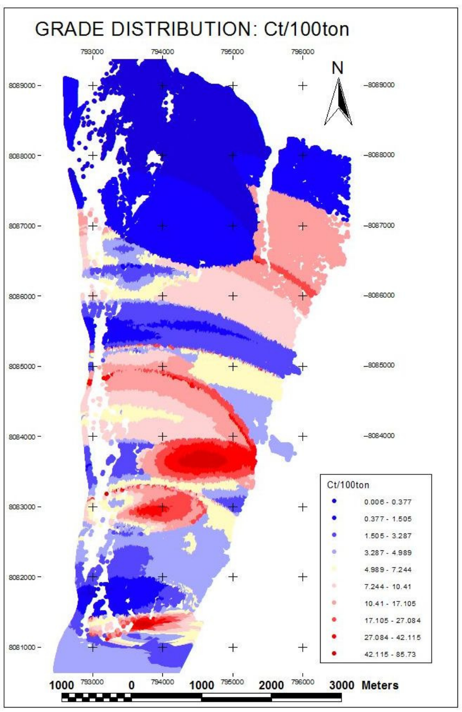


Fig 54: Final Co-Kriged Grade Distribution ct/100ton

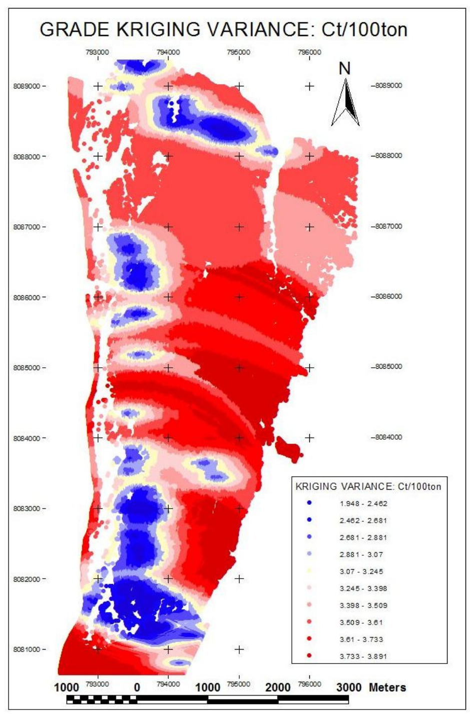


Fig 55: Final Co-Kriged Grade Distribution Variance

There are two main issues that has a bearing on the results, and that is (a) the extremely high sample variance in the grade specification, whether area based (ct/100sqm) or mass-based (ct/100ton), and (b) the lack of domaining.

In order to reduce the Coefficient of Variation (CoV) to at least a manageable figure, some 20% of the already sparse data had to be discarded. Doing variography on sparse data is a difficult process at best with no guarantee that useful or meaningful directional variograms can be obtained.

Furthermore, there was no attempt at domaining as the already sparse data just could not be practically split up and assigned to different domains. In this particular situation, the bulk of the sample data was located within with Shallow (thin) Gravel domain, with only two samples in the Rough Floor Gullies, eight in the Coastal Dune domain and a number, generally clustered together, in the Proto-Kunene area.

Out of this sparse distribution, the majority of samples discarded were from the Proto-Kunene sample set as they had the biggest sample population variation.

The result was that the directional variograms from either the ct/100t or ct/100sqm dataset are not very clear nor well behaved and that the resulting resource estimate in general has a very high kriging variance, indicating a generally low confidence in the estimate.

The grade estimation (ct/100ton) shows a high value grade area at PK07, EG01 but low grades everywhere else, mainly due to incomplete sample processing. Similarly, the Estimation Variance is low in the general area of PK07/EG01 because of the relatively high number of samples there, and very high elsewhere where sampling density is poor.

The decision to make use of geostatistics and specifically co-kriging was made because it is the only estimation tool available in the software systems at hand that can actually give an indication of how reliable the estimate may be. Given the extreme variability of the resource grade over short distances it is doubtful whether any other estimation process would be able to do any better. As it is, the various estimation processes (see 7.1 Estimated Resources) varies around the geostatistical estimation for both the Coastal Dune and Shallow Gravel areas, while overestimating the Rough Floor Gully resource considerably.

4.2.3 Software Systems

T4.2 (iv)

Throughout the life of the project, the following software systems were used:

4.3.3.1 GIS

Three GIS systems were used: QGIS v2.8.1, Global Mapper v15.2.3, ArcView v3.2

4.3.3.2 Geostatistics

Only one system was used: SGeMS v2.1

4.3.3.3 Image Processing

Two Image Processing systems were used: ENVI v5.0, ERMapper v7.1

T4.2 (iv)

4.2.4 Data Location

All NNDC Project data is located under a unique NNDC Directory at the following places:

i. Geomine desktop NNDC working directory
ii. Geomine NNDC backup directory

iii. NNDC backup hard disk drive at NNDC Head Office
iv. NNDC backup hard disk drive at NNDC Site Office

5.0 TECHNO-ECONOMIC STUDY (INCLUDING MODIFYING FACTORS)

5.1 Govermental

T5.1

The core issues pertain to the statutory requirements from the various Line Ministries and Departments.

5.1.1 Ministry of Mines and Energy

5.1.1.1Directorate of Mines

The Directorate of Mines requires the following reports:

a) Quarterly Status Reports - reported quarterly and up to date
b) Annual Prospectivity Reports - reported and up to date
c) Annual Income-Expenditure Reports - reported annually and up to date

The Directorate of Diamond Affairs has the following requirements:

a) Security Plan - In place (without such NNDC will not be allowed to operate)
b) Access Permits to Diamond Exploration/Mining Areas - In place (without such NNDC will not be allowed onto the EPL)
c) All Diamond Recoveries to be recorded in the Diamond Register - up to date and checked by Protected Resources Unit (PRU) staff
d) All entries in the Diamond Register to be physically verified against the recorded entries - up to date and verified by Protected Resources Unit (PRU) staff

5.1.2 Ministry of Environment and Tourism

The Ministry has the following requirements:

a) Access permits to all staff, contractors, visitors to the Skeleton Coast Park area - In place (without such NNDC will not be allowed into the Skeleton Coast Park)
b) EIA, EMP reports - up to date as reported by the Environmental Consultant
c) Environmental Permits to continue prospecting/mining (bi-annually renewed) - up to date and valid as reported by the Environmental Consultant

5.1.3 Ministry of Water, Agriculture and Rural Development

5.1.3.1Directorate of Water Affairs

The Directorate of Water Affairs has the following requirements:

a) Potable water usage reported on a monthly basis - up to date as reported from minesite

5.2 Environmental

T5.2, T5.2A(i)

The project is located in the Skeleton Coast Park and compliance with Environmental Legislation is important. A valid Environmental Clearance Certificate is crucial for continued exploration and prospecting as it addresses all key environmental issues. The current Certificate is valid until 30 January 2016.

5.3 Social

T5.3

This project is probably the most isolated one in Namibia, and does not impact on any social grouping or community, except of course that of the staff members and their families, which is an internal NNDC affair and of no concern to any outsider.

There is no mandatory social program to be approved.

5.4 Mining

T5.4

A Mining License with Amendment is pending.

Current primary production constraining parameters for the two main production areas (Shallow Gravels and proto-Kunene) are as follows:

1. Shallow Gravels: 2 x Vacuum Units @ 50t/day = 100t/day
2. Proto-Kunene Mining: 300 tons/day
3. Accessible gravel resources not under dune sand in the Proto-Kunene

The DMS units have more than enough capacity to handle this production which works out at some 160t/day gravel plant feed as determined from the grain size distribution that was done in 2010 on Mega-Conglomerate material.

TABLE 19: GRAIN SIZE DISTRIBUTION IN MEGA-CONGLOMERATE

Size Fraction	Size	Av	Std
Oversize	+5.6mm	17.07	4.4
Gravel	5.6-1.2mm	43.48	9.25
Sand	-1.2mm	39.46	5.42

Mining will be most affected by the following factors:

a) Dune -, and Sand cover, especially in the Coastal Dune area and the Proto-Kunene.
b) Near-Surface groundwater, especially the western portion of the Proto-Kunene system, where groundwater has made it as yet impossible to obtain a sample

The sampling process in the Proto-Kunene does not yet allow the determination of where the diamonds in general actually occurs: Surface, Near Surface, a certain depth below surface, etc.

The dunes in the Proto-Kunene have been mapped and the thickness covering the resources modeled, but in the Coastal Dune area there is less information to do so effectively. If the dunes have to be moved, the underlying resource must be able to support the cost, but it is currently difficult to sample below the dunes.

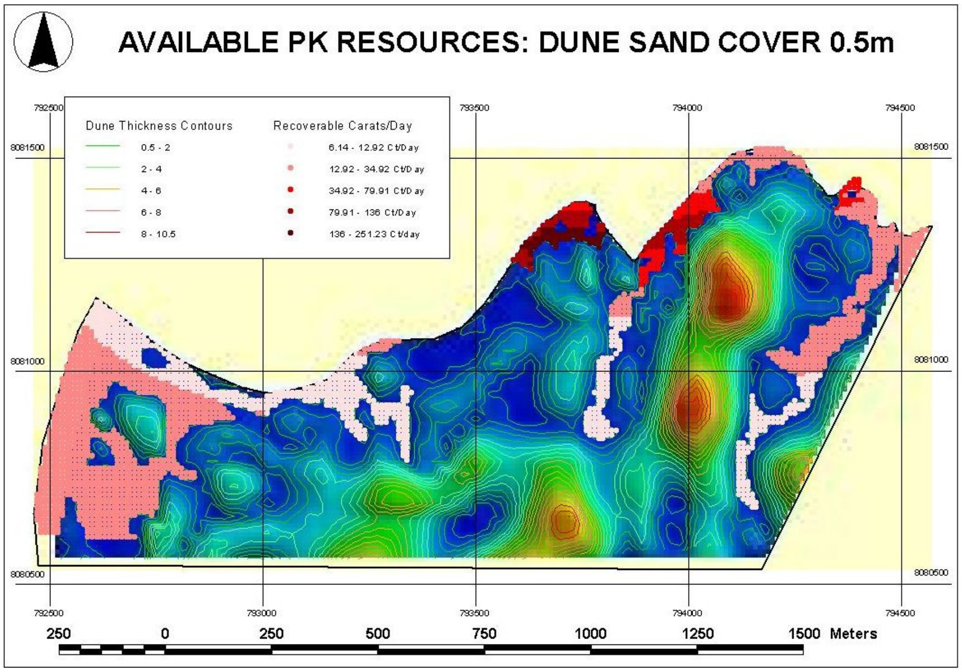


Fig 56: Resources Available under 0 - 0.5m Dune Sand Cover

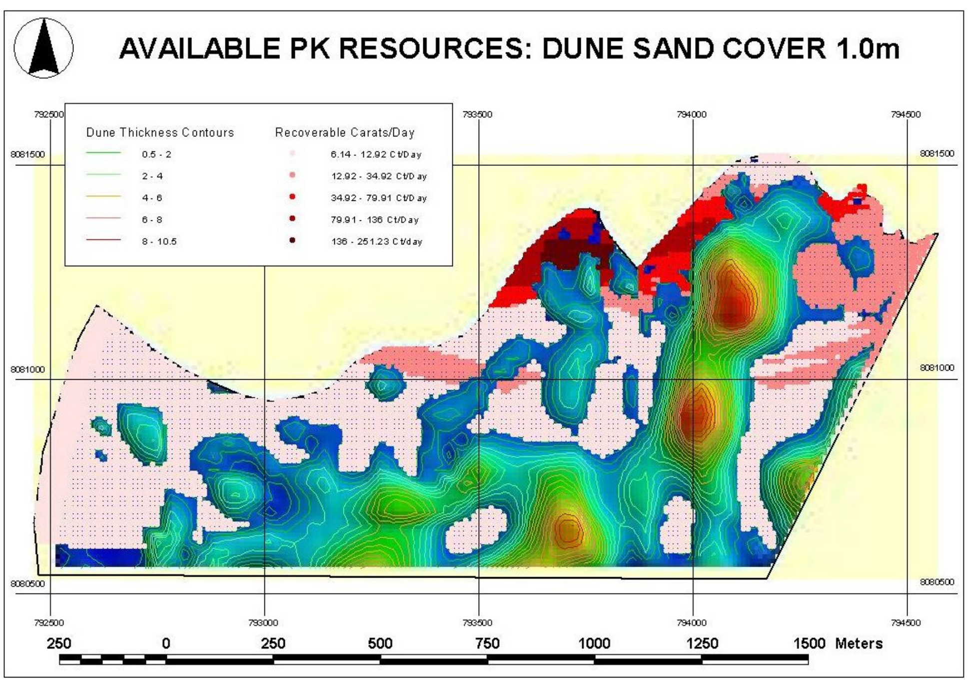


Fig 57: Resources Available under 0 - 1.0m Dune Sand Cover

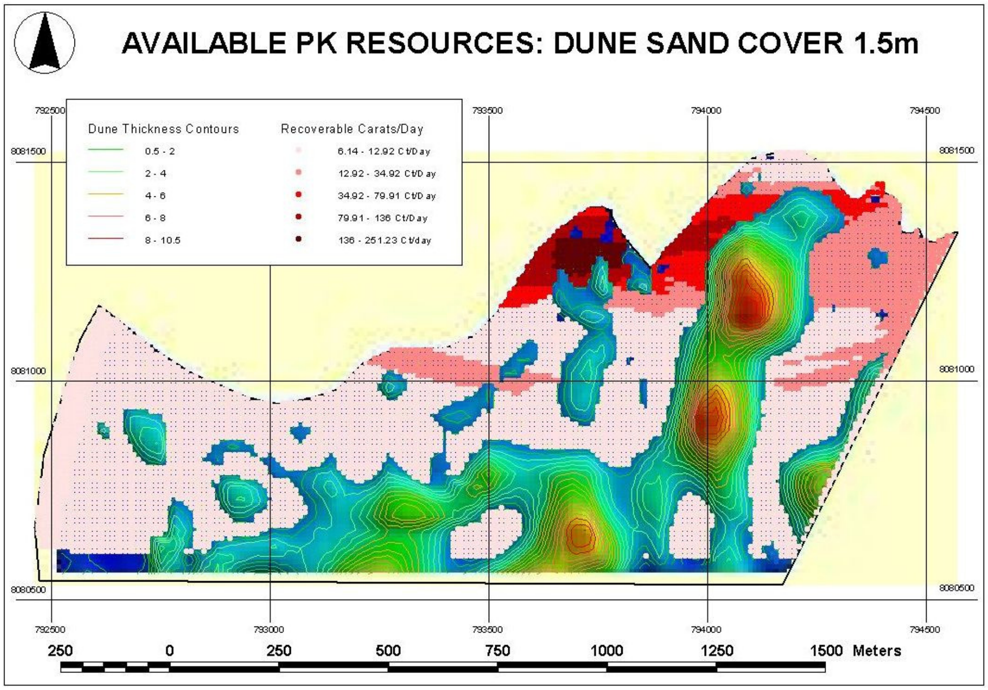


Fig 58: Resources Available under 0 - 1.5m Dune Sand Cover

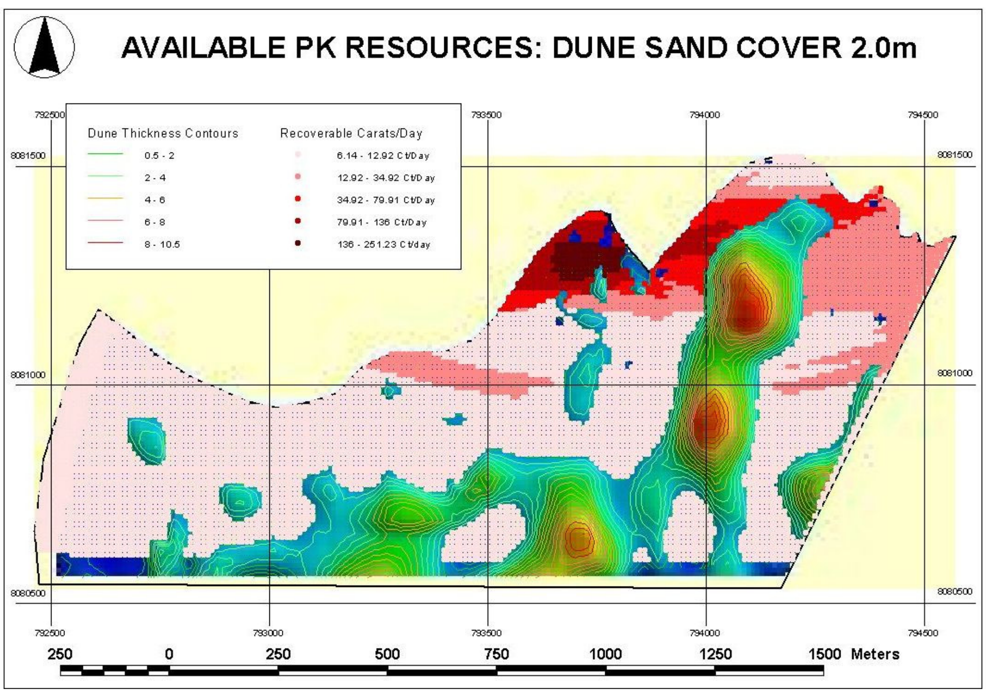


Fig 59: Resources Available under 0 - 2.0m Dune Sand Cover

The resource estimation was done on a block size of 10m x 10m which can be deemed the Selective Mining Unit (SMU) for the Kunene Project. This block size has proven to be the ideal one in the gully system as experienced during the bulk sampling program. A vacuum mining unit can do a 10m x 10m block in one working day in the Shallow Gravels, while in the Proto-Kunene a mining block of 10m x 10m x 1.5m can be done in one day.

The study must be considered as conceptual with mining parameters discussed above derived from the bulk sampling program.

T5.4B(i)

5.5 Treatment/Processing

T5.5

Processing is a straightforward alluvial diamond plant with grizzly and pre-screening to remove over- and undersize material, which is then fed into a DMS plant. The output from the DMS is routed through an automatic X-ray sorter to recover the diamonds.

Quality control is achieved by special tracers which are fed into the processing stream. If all tracers are recovered, the processing plant is deemed to operate faultlessly and a minimal fraction of diamonds may be lost.

In cases of doubt, plant tailings are put through the circuit to check for unrecovered diamonds.

There are two major problems experienced in the plant: (a) The processing of the marine gravels with a high percentage of fossil shells causes problems throughout the whole process and requires extra care to be taken, and (b) large amounts of fine sand that have to be screened out.

TABLE 20: PLANT AND EQUIPMENT

N°	Equipment Description	Remarks
	Articulated Dump Trucks	
1	Bell B30 ADT	
2	Bell B25 ADT	
3	Bell B40 ADT	
	Excavators	
4	CAT 330BLN	
5	CAT 330CLM	
6	Komatsu PC300	
7	Komatsu PC300	
	Front End Loaders	
8	CAT 966 FEL	
9	CAT 950 FEL	
10	Bell L2206 FEL	
11	Bell L2606E FEL	
12	Bell TLB	Digger Loader
	Bulldozers	
13	Komatsu D85A	
14	CAT D8K Bulldozer	
	Trucks	
15	Powerstar 10t 6x6 with Palfinger crane	Logistics
16	Powerstar 10t 6x6 with Palfinger crane	Logistics
	Powerstar 10T 6x6 with Palfinger crane	Logistics
17	MAN 8t 4x4	Service truck
	Light Vehicles	
18	Toyota Hilux Raider D4D 4x4 D/C 3.0TD	Manager
19	Toyota Hilux 4x4 D/C 2L Petrol	General use
20	Toyota Hilux SRX 4x4 D/C 2.5TD	Production Manager
21	Toyota Hilux SRX 4x4 D/C 2.5TD	Logistics
22	Toyota Hilux SRX 4x4 D/C 2.5TD	Processing

23	Toyota Hilux SRX 4x4 D/C 2.5TD	Mining
24	Toyota Hilux SRX 4x4 D/C 2.5TD	Maintenance
25	Toyota Hilux Raider 4x4 D/C 3.0TD	Manager
	Generators	
26	Perkins 350KVA	Plant
27	Volvo Penta 220KVA	Plant - Standby
28	Deutz Air Cooled 40KVA	Camp
29	Cummins 100KVA	In field screening plant
30	Deutz Air Cooled 27KVA	Standby Camp
31	Deutz Air Cooled 27KVA	Mobile unit for maintenance
32	5.5KVA Petrol	Mobile unit for maintenance
	Plant and Processing	
33	Extec Turbo Mobile screen	Infield screening (scalping & sizing)
34	Dabmar double deck screen 80tph	Infield screening (sand screen)
35	150tph Scalping Grizzle	+50mm scalping
36	Double Deck Sizing Screen (Wet)	-1.2mm+8mm sizing
37	Double Deck Sizing Screen (Wet)	-1.2mm+8mm sizing
38	Sand Screen (Wet)	Wash out -1.2mm fines
39	16tph DMS	
40	50tph DMS	Arrived - to be installed in next few months.
41	Final Recovery with 3 x Single Stage Flow-Sort Diamond Recovery Machine	
42	Sort House comprising dryers, glove box and safes	

Fig 60: Panorama View of Processing Plant

The study must be considered conceptual with processing parameters discussed above derived from the bulk sampling program.

T5.5B(i)

5.6 Infrastructure

T5.6

Infrastructure, project location and the consequential logistics are the main issues of concern due to the isolation and indifferent access routes.

A. Processing Plant

The processing plant is a standard alluvial diamond processing and extraction plant, with the necessary grizzly, wet screening systems, DMS concentration plant and a final automatic X-Ray sorting system.

B. Waste dumps

Waste dumps are located near the processing plant on sterile exposed bedrock.

C. Road

There is no road for a distance of some 270km. This is a current consequence of operating within the Skeleton Coast Park.

D. Power supply

Power supply is by onsite diesel generators that supply both the processing plant and the office/housing/workshop complex.

E. Offices

Offices for management, technical staff and security are at the main camp/accommodation site.

F. Maps showing locations of facilities

Fig 62: Aerial View of Admin/Accommodation/Workshop Facilities

G. Housing

Suitable housing is available at the main camp/admin site.

H. Security

Security is an important aspect of any diamond operation, and security services are supplied independent of NNDC, and are typically in regular communication with the Office of the Diamond Commissioner at the Ministry of Mines and Energy as well as the Protected Resources Unit (PRU) of the Namibian Police.

I. Resource sterilization testing

Suitable care was taken not to locate the plant, waste and tailings dump on any part of the diamond resource.

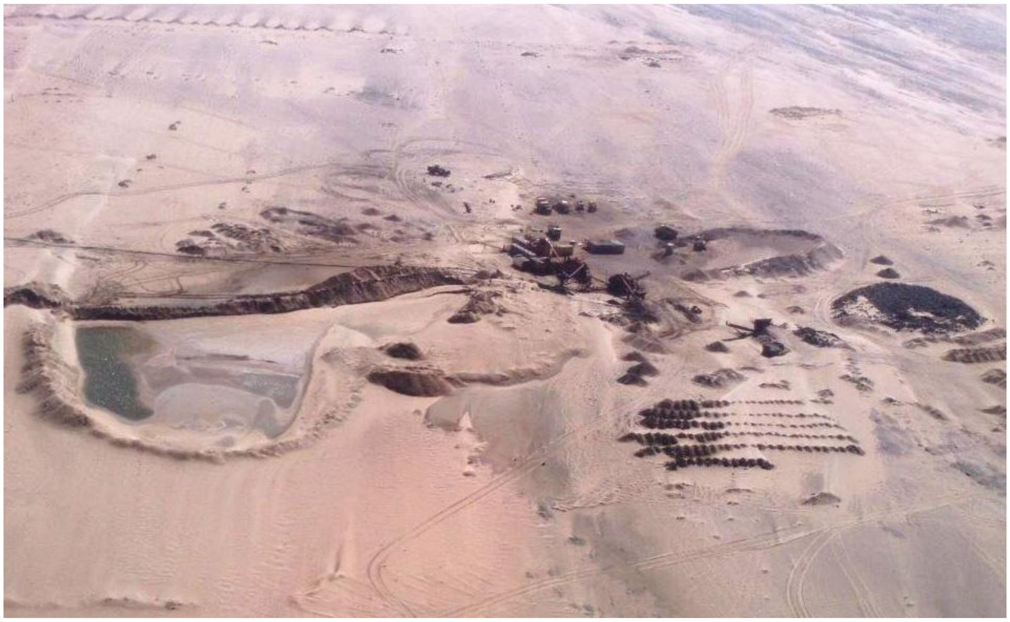


Fig 63: Aerial View of Processing Plant, Waste Dump, Tailings Dam, Feed Stockpiles

J. Ownership, type

NNDC is wholly owned by Next Investments (Pty) Ltd.

K. Extent and condition of plant and equipment.

The west coast of Namibia is hard on equipment and facilities because of a very high rust factor. This is complicated at the project site where wind strengths up to 80km/h play havoc with staff, equipment and facilities.

However, most of the plant is either new or newly refurbished, and a major maintenance program ensures availability as best as circumstances allow.

5.7 Economic criteria

T5.7

The diamonds are generally small, at around 0.15 ct/stone and the upper screen size has been set at 8mm (coarse fraction) while the lower screen size has been set at 1.2mm (sand fraction). This gets rid of a lot of unwanted material, but at the same the project may lose a lot of very small diamonds in the sand fraction.

The Kunene Project is economically complex in that it actually consists of two integrated mining environments: (a) the Shallow Gravels which are easily accessible, mined by Vacuum Mining Machines at a rate of some

50t/machine/day, and (b) the Proto-Kunene which is less accessible and mined at a rate of some 300t/day in a more conventional way using the excavator to dig, ADT's to load-haul-dump and an additional near-site screening plant to remove both oversize and undersize. However, from time to time an excavator has to be assigned to the Shallow Gravels to loosen the surface so that the micro-traps are accessible. Similarly, within the Proto-Kunene one or more Vacuum Mining machines may be assigned to clean the floor or base of the mining block. In that case the production from the Shallow Gravels is temporarily on hold. Both mining operations feed a single recovery plant.

The operating cost of each mining operation would contribute together with its proportional processing cost to determine an economic cut-off grade for each mining type.

The typical diamond value has been assessed as US$183/ct (Pieter van Wyk, Sept 2014), but the diamonds are formally valued by Morse Investments Limited (Pty) Ltd ("*Morse*") which is a licensed diamond cutting and polishing factory located Windhoek.

TABLE 21: Morse Diamond Valuation - NNDC Sample - Jul-15

DESCRIPTION	Carats	Clarity	Color Range	% of Parcel	Rapaport Price July 2015	Average Value US$/ct	Value US$
BIGGEST STONE FROM MINE	1.65	IF	D	0.04%	8,500	1,563	2,578.95
SIEVE -7 LOW COLOUR /MAKEABLES	52.94	SI+	K-	1.14%	380	78	4,129.32
SIEVE 7-9	753.81	VS+	J+	16.29%	765	98	73,873.38
SIEVE 9 MAKEABLES	468.52	VS+	J+	10.13%	855	108	50,600.16
SIEVE 10 SAWABLES	327.28	VS+	J+	7.07%	920	150	49,092.00
SIEVE 10 MAKEABLES	189.27	VS+	J+	4.09%	855	120	22,712.40
SIEVE 10 LOW COLOUR/MAKEABLES	116.58	VS+	K-	2.52%	580	90	10,492.20
SIEVE 11 MAKEABLES	99.69	VS+	J+	2.15%	1,020	120	11,962.80
SIEVE 11 LOW COLOUR/MAKEABLES	105.85	VS+	K-	2.29%	670	90	9,526.50
BROWNISH LOW COLOUR	131.77	VS-SI	LIGHT BROWN-CAP	2.85%	200	40	5,270.80
Sieve 13 SAWABLES	1,657.98	VS+	D-F	35.83%	980	250	414,495.00
Sieve 15 SAWABLES	180.18	VS+	D-F	3.89%	1,180	319	57,477.42
Sieve 17 SAWABLES	56.90	VS+	D-F	1.23%	1,300	664	37,781.60
FANCY YELLOW	172.60	VS+	FANCY YELLOW {mi	3.73%		312	53,851.20
REJECTIONS	312.31	SI1 to I2	k+	6.75%		20	6,246.20
TOTAL NNDC SAMPLE	**4,627.32**						**810,089.93**
Average Value (US$/Ct)							**175**

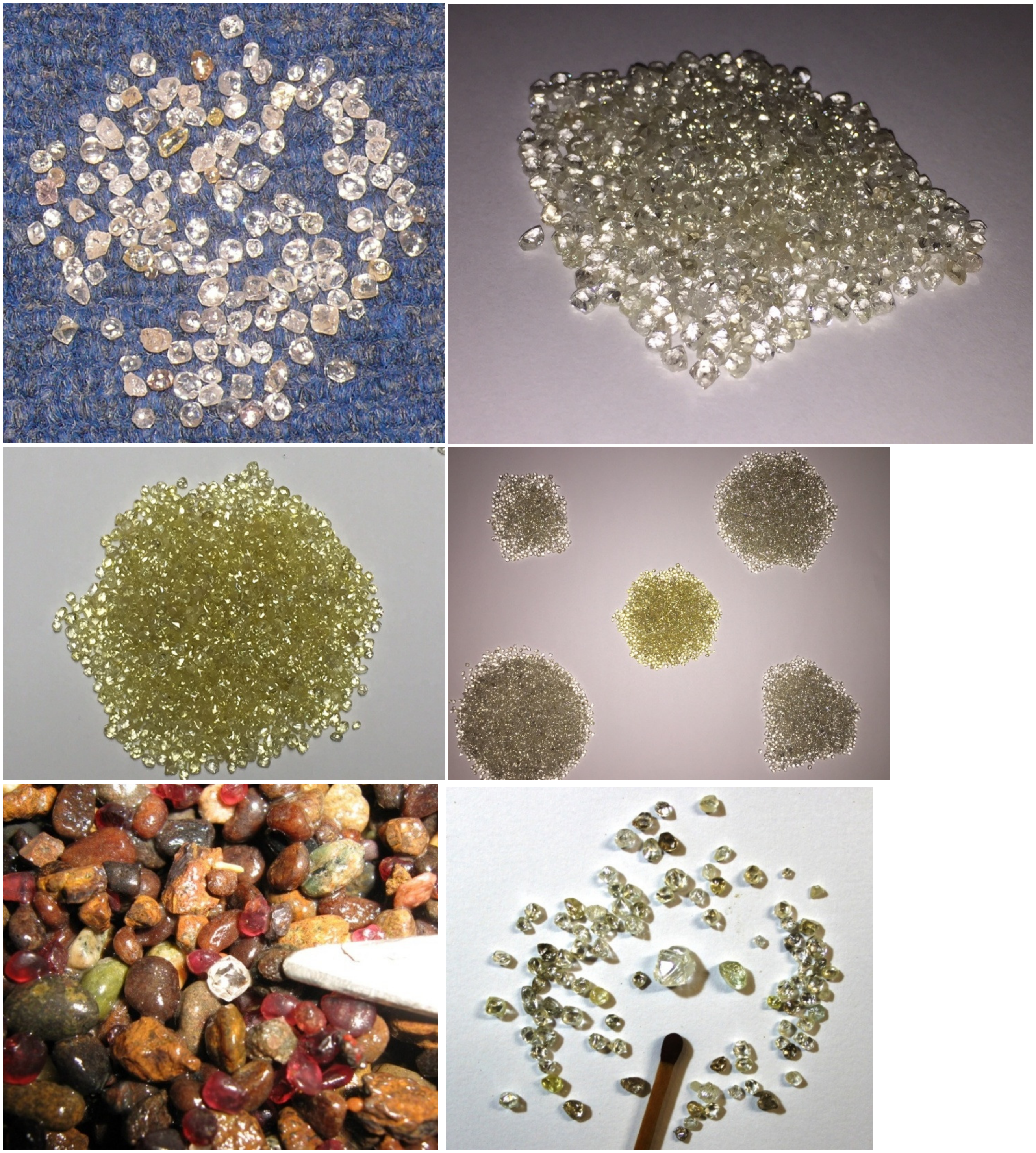


Fig 64: Kunene Diamonds

5.8 Marketing

T5.8

NNDC does not report any marketing problems at all as it has an exclusive off-take agreement with Morse Investments Limited (Pty) Ltd ("*Morse*"). Morse is a licensed diamond cutting and polishing factory located in Windhoek.

Whilst NNDC's average diamond size distribution is below 0.15cts/stone, the diamonds are of exceptionally high quality in terms of shape and colour, due to their association with a dominant population of white and fancy yellow sharp edged, crystals. The dollar per carat ($/ct) values achieved reflect this status when compared to diamonds from most other sources globally, which generally have significantly lower $/ct values in this specific size range. This high quality production will assist NNDC in mitigating marketing risk as diamond market projections going forward suggest a future shortage of higher quality diamonds. Marketing risk is further mitigated by the exclusive offtake agreements in place with Morse, NNDC's sister company, which focuses on beneficiation.

6.0 RISK EVALUATION

T6

No quantitative risk analysis was done.

However, the Risk Elements of the Project can be qualitatively evaluated.

6.1 Geology/Deposit Environment

The geology of the deposit is well understood. It is however difficult to properly explore/prospect the entirety of the Proto-Kunene. Dunes in excess of 10m high covers substantial parts of it. This causes problems for both mining and prospecting as it is difficult to sample beneath the dunes and costly to move the dunes to access the resource.

The maximum elevation in accessible parts of the Proto-Kunene is only some 18m above mean sea level (a.m.s.l). The accessible portions of the Proto-Kunene near the coastline could not yet be properly sampled using an ordinary excavator, as the water level is only a meter or two below the surface. This would obviously impact on type of mining and the cost thereof as the current equipment may not be able to cope with it.

6.2 Mining

Vacuum Suction Machines mainly do mining outside of the Proto-Kunene, e.g. in the Shallow Gravel Gullies. They are extremely efficient, but suffer from slow production rates (approximately 50t/day/machine). If the mining area contains excessive micro-traps in the bedrock, even that low production rate may be compromised. An excavator is now used to just loosen the bedrock and expose the micro-traps to the suction hose and this speeds up the mining rate substantially. However, short of acquiring more units, no additional optimisation process can be envisaged.

Within the environs of the Proto-Kunene, mining is by conventional excavation and using Articulated Dump Trucks (ADT) for the load-haul-dump cycle. Excessive dune sand cover slows down the excavation/loading process, negatively impacts on the mining efficiency and thus the cost. Hauling this material with an excessive sand content to the processing plant further impacts on the cost.

The mining is being optimised by having the sand removed in advance of mining, screening out excessive sand on-site and optimising the load-haul-dump cycle.

The conventional mining process with the current equipment seems to be able to manage 300 tons per day without any optimisation. It seems quite possible to optimise elements of the process flow, but that will almost certainly likely require more managerial and supervisory input and overheads.

Using the conventional mining equipment (as listed elsewhere) to sample the western-most reaches of the Proto-Kunene has not been very successful as the shallow water table prevents the excavator digging out the unconsolidated alluvium that the resource consist of.

6.3 Processing

The processing plant has a DMS capacity of 16 + 50 tph from two units. The material being sampled has between 80% and 60% combined over- and undersize. This would imply that the current plant can handle a mining rate of between 165-330tph (33 000 - 66 000 tpm). Excessive amounts of seashells and shell fragments in the feed can seriously impair the rated throughput.

More problematical is the screening front-end where excessive sand in the feed causes bottlenecks due to clogging especially in wet weather (rain, mist, fog).

Excessive sand is being removed in a dedicated sand screen on-site, and a crushing unit is being commissioned to deal with excessive shells in the feed.

6.4 Security

Onsite security seems to cope with the current level of production and size of the operation. The Protected Resources Unit (PRU) of the Namibian Police and the Office of the Diamond Commissioner back them.

A major issue of concern is the unconstrained access to the general area by tourism operators. No commercially profitable diamond mining operation will be able to cope with this potential security threat in the long run.

All product is flown out when deemed necessary and this is assumed to reduce threats to security.

6.5 Environment/Climate

The environment and climate is very harsh and puts a severe strain on the maintenance function with rust and corrosion causing breakdowns.

The prevailing south-westerly wind has been clocked at 80kph on the vehicle speedometer and under those circumstances certain parts of the operation has to stop, such as the vacuum mining process that cannot function well under these conditions.

Similarly, operations where vehicles or bins are loaded with excavators and front-end loaders also has to come to a stop as diamonds may be blown away with the sand by the wind and lost.

6.6 Logistics

The isolated location of the project with its lack of access roads puts a severe strain on the logistics function. Every aspect of the operation has to be carefully managed and pre-planned with all sorts of contingencies taken into consideration.

Unforeseen breakdowns, accidents and mishaps can have a major impact on the production environment and adverse climatic conditions such as exceptionally high seas can stop scheduled supply runs for several days.

6.7 Market

NNDC does not have any problems with the market for its products due to the off-take agreement with Morse. Whatever they can produce they can sell. See 5.8 Marketing)

6.8 Operational

The isolated and poorly accessible location of the project not only affects the logistics, but it also makes for severe staff problems. Few people can cope with the isolation and the sometimes very inclement weather, and although it is easy recruiting staff in an environment where unemployment is rife, it is very difficult to retain them.

It does not always follow that the person with right temperament is the person with the right skills set for the project. The Project at the moment seems adequately staffed for the size of the operation, but any expansion will almost certainly cause staffing problems either in attracting the right skills set or retaining them.

6.9 Summary

a. External Risks

- The most important is the confidence in the Resource Estimates. Due to extreme grade variations over short distances, reliable resource estimation is very difficult.
- The second-most important is climate. A climate with strong winds and high rust factor affects plant and equipment reliability and inhibits a regular work schedule for certain outdoor operations
- The third-most is logistics imposed due to the location of project, distance from support services and poor access roads

b. Internal Risks

- The most important risk is Cost: Operating and Fixed
- The second important risk is staffing. Due to the isolated location the project requires competent staff that are psychologically suitable for this isolation.

7.0 RESOURCE AND RESERVE CLASSIFICATION CRITERIA

T7

7.1 Estimated Resources

The resources are all of the Inferred Category and no Reserves have been determined.

TABLE 22: SUMMARY OF IN-SITU INFERRED DIAMOND RESOURCES

AREA	Area Size (ha)	Tons ('000)	Density Ton/M^3	Ct/100T Estimated	Ct Estimated	US$/Ct
PK (Sub) Area	125	3,867	2.02	6.17	238,629	175
Coastal Dune Area	347	822	2.05	1.71	14,054	175
Shallow Gravel Area	667	4,035	2.05	2.34	94,357	175
Rough Floor Gully Area	1,260	18	2.05	7.70	1,383	175
TOTAL	***2,399***	***8,742***		***3.99***	***348,423***	175

The bottom screen cut-off is at 1.2mm.

In comparison, the 2014 estimate has the following resources estimated by various methods for the various Resource Areas, again at a bottom cut-off of 1.2mm :

TABLE 23: SUMMARY OF IN-SITU INFERRED DIAMOND RESOURCES - 2014

Estimation Process	Area	Carats ('000)	ctp100sqm	US$/ct
KB2D	Shallow Gravels	35	1.2	175
Interpolation: IDW^2	Shallow Gravels	79	2.8	175
Interpolation: Quadratic Polynomial	Shallow Gravels	109	3.8	175
Estimation Process	**Area**	**Carats ('000)**	**ctp100sqm**	**US$/ct**
Pro-Rata (KB2D)	Coastal Dune Area	12	1.2	175
Pro-Rata (IDW^2)	Coastal Dune Area	27	2.8	175
Pro-Rata (Quadratic Polynomial)	Coastal Dune Area	37	3.8	175
Estimation Process	**Area**	**Carats ('000)**	**ctp100sqm**	**US$/ct**
KB2D	Rough Floor Gullies	82	1.5	175
Interpolation: IDW^2	Rough Floor Gullies	405	7.4	175
Interpolation: Quadratic Polynomial	Rough Floor Gullies	50	0.9	175

Density of material in Table 23 above is 2.05 tons/m^3

The Shallow Gravel Area has been best explored with a suitable number of samples and estimated with suitable conditioning data, such as Gravel Gully Indicator data. The Coastal Dune Area had eight samples but is geologically similar to the Shallow Gravels, the only difference being in the amount of sand cover and interpolation is expected to produce resource figures at the Inferred Resource confidence level. The Rough Floor Gully Area had only two samples and only by extending the estimation extrapolation area, could an estimate be arrived at, but with corresponding high kriging variance.

It was deemed unnecessary to model the diamond stone size variation, as it is grouped very closely around the median value (0.14 ct/stone).

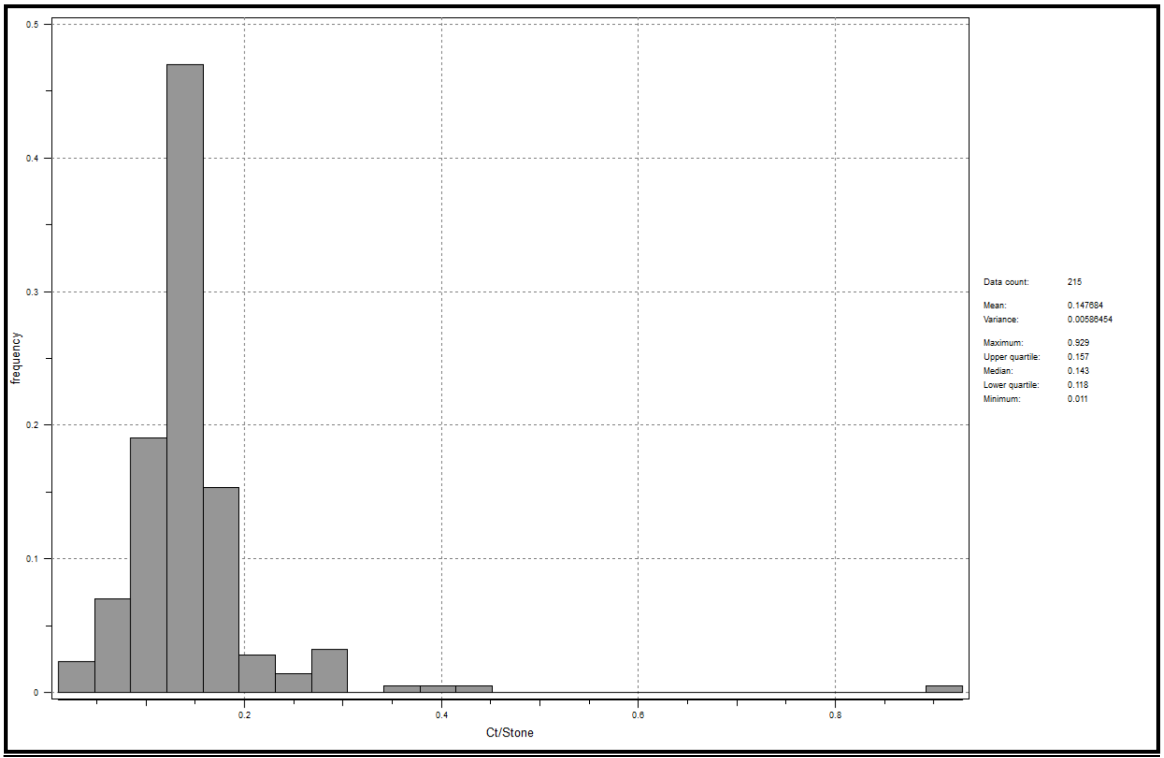


Fig 65: Histogram of Diamond Size Distribution From Bulk Sampling

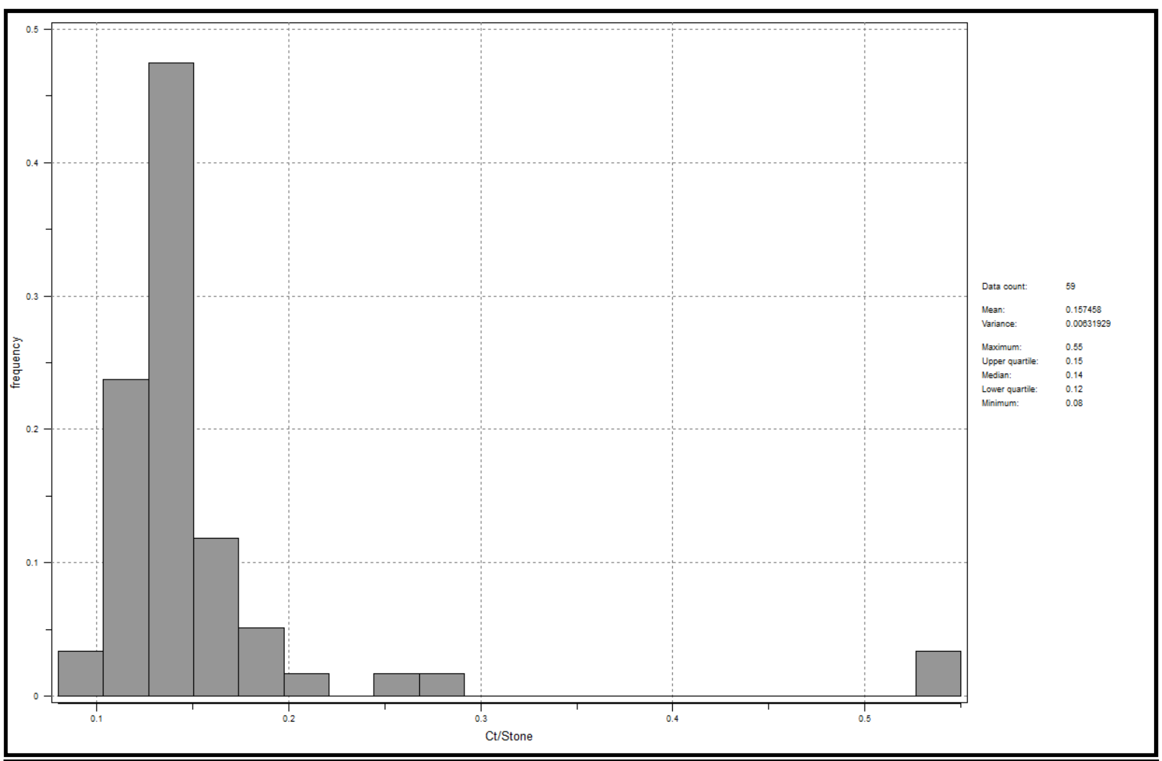


Fig 66: Histogram of Diamond Size Distribution From Monthly Production History

The part of Proto-Kunene that was sampled is here referred to as a "*sub-area*" as only a small portion of the Proto-Kunene on the mineral license have been explored.

The Proto-Kunene, already shown to be the main exploration and mining area, is an interesting resource phenomenon, in that later erosion from the Coastal Dune Area, Shallow Gravel Area and the Rough Floor Gully Area is expected to have washed a substantial amount of reworked marine gravels into the Proto-Kunene. The age of this erosion and southwards transport of diamond-bearing gravel is not known, and this age would have determined the amount and location of diamonds within the Pro-Kunene due to possible redistribution following deposition.

It is also expected that the western portions of the Proto-Kunene could have been additionally enriched by the longshore current.

TABLE 24: PRIMARY DISTRIBUTION STATISTICS (ctp100t)

Dataset	Samples	Sample Mean	Sample Variance	Sample Standard Deviation	Sample CoV
Proto-Kunene	38	31.26	**12479.32**	**111.71**	**3.57**
Shallow Gravels	103	3.49	**204.75**	**14.31**	**4.10**

In the table above the high CoV values indicates that both resource areas are highly variable in sample grades. These figures also indicate that doing a Resource Estimation on any individual domain is going to be very difficult if *Geostatistics* is to be used. The small number of samples per individual domain may make it anyway difficult for any estimation process to produce estimates more reliable than the geostatistical one.

7.2 Estimated Resources at a Grade Cut-off

NNDC has started a major optimisation program, aimed at minimising overheads, starting with reducing material transport from sample site to plant and working towards increased throughput by onsite sand screening and installing a crushing unit to reduce fossil shells to fragments that does not impact on DMS throughput.

These initiatives, once fully realised, would be beneficial to an effective bulk mining program where lower grade material can be mined at a profit. These initiatives, already in progress, make it difficult to assign rational cutoff grades to the inferred resource.

However should a cut-off be required, an initial starting point would be to reduce low grade material by assigning a cut-off of 0.5 ctp100t to both the Shallow Gravels and the geologically similar Coastal Dune resources.

Any such cut-off at the current state of information must be considered an arbitrary one.

TABLE 25: SUMMARY OF IN-SITU INFERRED DIAMOND RESOURCES AT ARBITRARY CUT-OFFS

AREA	Area Size (ha)	Cut-Off (ct/100t)	Tons ('000)	Density Ton/m^3	Carats	Ct/100T	US$/Ct
PK (Sub) Area	125	2.5	3,769	2.02	230,538	6.0	175
Coastal Dune Area	347	0.5	437	2.05	13,134	3.0	175
Shallow Gravel Area	667	0.5	1,850	2.05	89,255	4.8	175
Rough Floor Gully Area	1,260	0	142	2.05	1,416	7.9	175
TOTAL	**2,398**		**6,198**		**334,344**	**5.4**	**175**

The bottom screen cut-off is at 1.2mm.

7.3 Historical Dumps

The general area boasts a large number of historical dumps, of which some 80 dumps have been spatially located/marked by hand-held GPS. The actual number would be at least be double this, based on visual observation. These dumps would contain an expected several thousand tons of diamond-bearing material and may, upon surveying and processing add to the total project carats.

Some 13 dumps have been processed and the table below indicates what can be expected if (a) the marked dumps are processed and (b) if all expected dumps are processed.

TABLE 26: ADDITIONAL RESOURCE IN HISTORICAL DUMPS - NOT INCLUDED IN RESOURCE TABLE

Source	Heaps	Stones	Carats	ct/100ton
Historical Heaps Processed	13	1,821	251	2.27
Historical Heaps Located	80	9,385	1,293	
Historical Heaps Expected	160	23,393	3,223	

7.4 Classification Criteria

T7B(i)

7.4.1 Sample Spacing and Size

In classical statistics a sample size of n = 300 samples was considered a minimum to subject to statistical analysis, and the Project has a total sample size of n = 158. The highly variable diamond grade (with a rather uniform stone size) over short very distances together with a sample number of n < 300 makes it very difficult to define a criterion for ideal sample spacing. The sample size of initially 10m x 10m blocks, extended by further 10m x 10m increments in case of low sample volume was, in hindsight, clearly too small to be meaningful, as a bigger sample size would have produced more stones per sample and would have averaged out short-range variability. Small sample sizes, coupled with the use of equipment that did not recover all diamond-bearing material from the sample pit have resulted in a lower amount of recovered carats.

This was aggravated by extremely slow sample processing equipment (3 x small jigs) that had a very limited throughput. Taking bigger samples spaced closer together was at the time very impractical as it took extremely long to produce results over a very large area that had to be to covered in a sensible period of time. The current DMS can process the samples rather quickly and effectively, but the sampling process is slowed down drastically by the very efficient but very slow vacuum machines.

More recently, a minimum sample size is considered to be at least 30m x 30m, but this is not backed by any analytical process.

The grade variability, small sample size and inadequate gravel extraction does not allow for any resource classification other than an Inferred Diamond Resource.

7.4.2 Diamond Resource vs Diamond Exploration Target

An Inferred Diamond Resource can be considered that part of a Diamond Exploration Target that has a reasonable and realistic prospect for eventual economic extraction. (See *7.4.3 Realistic Prospects for Eventual Economic Extraction*).

7.4.3 Realistic Prospects for Eventual Economic Extraction.

7.4.3.1 Coastal Dune Area

Most of the Diamond Resource in the Coastal Dune area is estimated by both extrapolation and interpolation and with the use of reasonably reliable conditioning data. NNDC has expressed the opinion that the estimated amount of carats does not warrant a further time-consuming exploration program, apart from specifically testing the validity of new concepts. The practical reality is that NNDC intends to extract gravels (and diamonds) from the Shallow Gravel gullies and will not stop doing so if the gully (and gravel) continues northwards into the coastal dune belt and becomes part of the Coastal Dune Resource, as all of the Shallow Gravel gullies do.

This implies that the Coastal Dune Belt will have a reasonable and realistic prospect for eventual economic extraction, partly in itself and partly as a continuation of the Shallow Gravels.

7.4.3.2 Rough Floor Gully Area

The Rough Floor Gullies resource has been estimated mainly by extrapolation but with very reliable conditioning data. The original ground-truthing following the satellite image processing has shown that the gullies have been very reliably mapped out. Although the estimated diamond resources for the Rough Floor Gullies are very small, it is nevertheless extremely easy to locate a gully and equally easy and rather quick to vacuum owing to little or no surface cover.

Here as well NNDC is equally determined not spend any more time on further proving a small resource, and will decide when to extract the inferred diamonds at their option.

This will imply that the Rough Floor Gullies, though a small resource, will have a reasonable and realistic prospect for eventual economic extraction.

7.4.3.3 Shallow Gravel Area

The Shallow Gravel Area is quite well sampled and had an Inferred Diamond Resource estimated with very reliable conditioning data. Although not of Indicated Diamond Resource class, it clearly has a reasonable and realistic prospect for eventual economic extraction.

7.4.3.4 Proto-Kunene Area

The Proto-Kunene is the main exploration and (eventual) mining target. Only a small portion of the extent of the Proto-Kunene on the mineral license has been explored and all further exploration expenditure and effort are already focused there. There is no question of the Proto-Kunene not having a reasonable and realistic prospect for eventual economic extraction.

7.4.4 Inferred Diamond Resources vs Indicated Resources

The main discrimination here is the "*estimated only with a low level of confidence*" vs the "*estimated with a reasonable level of confidence*". It is be clear from the relevant discussions in the Report that sample numbers, sample size and extremely high grade variability over very short distances will not allow at the current level of knowledge and data to arrive at an Indicated Resource.

8.0 ECONOMIC INDICATORS

Diamond Values:

NNDC's Run of Mine diamonds extracted to date (samples), was valued by Morse Investments Limited (Pty) Ltd, which is a licensed diamond cutting and polishing factory located Windhoek, as summarized in the Table below, assigning an average value per carat of US$175/ct.

DESCRIPTION	Carats	Clarity	Color Range	% of Parcel	Rapaport Price July 2015	Average Value US$/ct	Value US$
BIGGEST STONE FROM MINE	1.65	IF	D	0.04%	8,500	1,563	2,578.95
SIEVE -7 LOW COLOUR /MAKEABLES	52.94	SI+	K-	1.14%	380	78	4,129.32
SIEVE 7-9	753.81	VS+	J+	16.29%	765	98	73,873.38
SIEVE 9 MAKEABLES	468.52	VS+	J+	10.13%	855	108	50,600.16
SIEVE 10 SAWABLES	327.28	VS+	J+	7.07%	920	150	49,092.00
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SIEVE 10 LOW COLOUR/MAKEABLES	116.58	VS+	K-	2.52%	580	90	10,492.20
SIEVE 11 MAKEABLES	99.69	VS+	J+	2.15%	1,020	120	11,962.80
SIEVE 11 LOW COLOUR/MAKEABLES	105.85	VS+	K-	2.29%	670	90	9,526.50
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Sieve 13 SAWABLES	1,657.98	VS+	D-F	35.83%	980	250	414,495.00
Sieve 15 SAWABLES	180.18	VS+	D-F	3.89%	1,180	319	57,477.42
Sieve 17 SAWABLES	56.90	VS+	D-F	1.23%	1,300	664	37,781.60
FANCY YELLOW	172.60	VS+	FANCY YELLOW {mi	3.73%		312	53,851.20
REJECTIONS	312.31	SI1 to I2	k+	6.75%		20	6,246.20
TOTAL NNDC SAMPLE	**4,627.32**						**810,089.93**
Average Value (US$/Ct)							**175**

Diamond Resource Estimation:

NNDC's resource estimation falls within the Inferred Diamond Resources category, as summarised in the Table below, which is typical of alluvial diamond deposits globally, due to the geological setting of such deposits.

AREA	Area Size (ha)	Tons ('000)	Density Ton/M^3	Ct/100T Estimated	Ct Estimated
PK (Sub) Area	125	3,867	2.02	6.17	238,629
Coastal Dune Area	347	822	2.05	1.71	14,054
Shallow Gravel Area	667	4,035	2.05	2.34	94,357
Rough Floor Gully Area	1,260	18	2.05	7.70	1,383
TOTAL	***2,399***	***8,742***		***3.99***	***348,423***

The bottom screen cut-off size is at 1.2mm.

The exploration results to date indicate that the Property hold sufficient economic potential, with high enough levels of confidence, to underpin the next phase(s) of the project development cycle i.e. improving the resource estimate to the indicated category, then the evaluation of all potential exploitation options, which should take all the modifying factors into consideration. To date, the resource estimate could be classified at the Inferred Diamond Resources category only.

9.0 BALANCED REPORTING

T8

The exploration results have been reported as unbiased as possible, except for the Competent Person's view that the Resource Estimates presented in this report may have understated the Resource Grade. This view is supported by the inability of the excavator to completely extract all gravel material in the Shallow Gravels, incomplete processing of sampled material because of incomplete knowledge at the time and the (anecdotally reported) poor efficiency of the old rotary pan.

It must be stated explicitly that neither the Competent Person nor his staff has or have had any interest in this project capable of affecting their ability to give an unbiased opinion and have not and will not, receive any pecuniary or other benefits in connection with this assignment, other than normal consulting fees.

10.0 AUDITS AND REVIEWS

T9

No audits or reviews of any of this work has been done by any outside agency, except for the professional involvement of the Geological Survey of Namibia (GSN) and the promoters of post-graduate students from time to time .

11.0 OTHER CONSIDERATIONS

T10

11.1 Dune Sand Removal

Dune sand covers large areas of especially the more economically important Proto-Kunene. This impedes exploration and prospecting as well as the eventual mining economics. This issue should be addressed by expertise in earth-moving unconsolidated material.

11.2 Software

The software that was used in the geostatistical resource estimation process, SGEMS, is quite adequate to the task, but it suffers from human bias when compiling and modeling variograms. Also, it does store the parameter files when setting up estimation processing runs, but it requires a lot of careful checking when doing estimation runs. Furthermore SGEMS does not have a facility to decluster input data with resulting declustering weights and more importantly does not have a facility to enable cross validation, which would show up the inadequacies of the estimation process clearly.

Any further geostatistical work will benefit from using SAGE2001 for variography and WinGSLIB for the estimation and validation process.

SAGE2001 fits variogram models automatically to the experimental variograms and this would mean that any practitioner anywhere in the world will obtain the same variograms with the same input dataset - addressing the important issue of repeatability.

WinGSLIB offers similar facilities as SGeMS, but has a far richer set of geostatistical functions and utilities. The most important aspect however is that it stores a processing parameter file as a simple ASCII text file. This again implies that given the input datasets and the parameter files, any practitioner anywhere in the world will get exactly the same results - again addressing repeatability of results.

11.3 Glossary

Automatic X-Ray Sorter: The basic concept of operation of such X-RAY sorting machines is utilizing the fact that diamonds fluoresce and to some degree phosphoresce when exposed to X-Ray radiation. Light emitted from diamonds, which have been excited by X-Ray's is detected and converted into electrical signals. Such signals (after suitable amplification and processing) in turn are used to trigger an ejection device which physically separates the diamond from the rest of material fed through such a sorting machine.

Bulk Density: Weight of a unit volume of a loose material (such as a powder or soil) to the same volume of water. Expressed in kilograms (or tons) per cubic meter (kg/m3), it is a type of relative density and is used commonly in mining.

Calcrete: A limestone-rich rock formed by the cementation of soil, sand, gravel, shells, by calcium carbonate deposited by evaporation

Coefficient of Variation (CoV): In probability theory and statistics, the coefficient of variation (CoV) is a standardized measure of dispersion of a probability distribution or frequency distribution. It is defined as the ratio of the standard deviation σ (sigma) to the mean μ (mu). A measure of the relative variation of distribution independent of the units of measurement; the standard deviation divided by the mean, sometimes expressed as a percentage.

Co-Kriging: Traditional regression methods only use data available at the target location and fail to use existing spatial correlations from secondary-data control points and the primary attribute to be estimated. Co-kriging methods are used to take advantage of the covariance between two or more regionalized variables that are related, and are appropriate when the main attribute of interest is sparse, but related secondary information is abundant.

Cross Validation: Cross-validation uses all the data to estimate the trend and autocorrelation models. It removes each data location one at a time and predicts the associated data value. This procedure is repeated for a second point, and so on. For all points, cross-validation compares the measured and predicted values and allows a comparison of how well the estimation process approximates reality.

Diamond Register: A Register kept under Namibian law at all diamond prospecting and mining operations. All diamonds produced are logged in this register: Date, Size, Location.

Dense Media Separation (DMS): DMS is a process where a suspension of dense powder in water is used to form a type of 'heavier liquid' to separate mineral particles in a sink-float process. Many modern dense media plants use this technology because it is both flexible and allows upgrading of resources thereby increasing overall profitability of the resource.

Diamictite: A lithified, conglomeratic, siliciclastic rock which is unsorted, with sand and/or coarser particles dispersed through a mud matrix. The term is commonly used today in preference to 'tillite', which has clear genetic (glacial) connotations.

Dwyka Fm: In the Carboniferous, southern Africa was part of Gondwana. During the Late Carboniferous the lithosphere underlying what is now the Karoo Basin migrated over the South Polar Region. This resulted in southern Gondwana being covered by a major ice sheet. As the ice sheet and subsequent glaciers melted, the sediments of the Dwyka Group were deposited in the newly formed basin. These glacial deposits include diamictite, varved shale and mudstone with dropstones, fluvioglacial gravel and conglomerates. The total thickness of the group ranges from 600 m to 750 m. The Dwyka Fm is the oldest and lowermost unit of the Karoo Supergroup that is recognized throughout sub-Saharan Africa.

Exclusive Prospecting Lincense (EPL): A Temporary Mineral Right legally awarded in Namibia for exploration and prospecting proposes. An EPL may have a maximum size of 100 000ha. It is valid for three years, and two extensions, each of two year's duration may be applied for. Should that be inadequate, further extensions may be granted on special application by the Minister of Mines.

Fluviatile: A term used in geography and geology to refer to the processes associated with rivers and streams and the deposits and landforms created by them. When the stream or rivers are associated with glaciers, ice sheets, or ice caps, the term glaciofluvial or fluvioglacial is used

<u>Gondwana breakup</u>: In paleogeography, Gondwanaland is the name given to the more southerly of two supercontinents (the other being Laurasia) that were part of the Pangaea supercontinent that existed from approximately 510 to 180 million years ago (Mya). It separated from Laurasia 200-180 Mya (the mid-Mesozoic era) during the breakup of Pangaea and drifting farther south after the split.

<u>Grizzly (Rock Screen):</u> A grizzly screen is a very coarse screen used to separate very coarse rock particles from that which will form the processing plant feed. It is normally the first screen process used in rock size classification.

<u>Ground Penetrating Radar (GPR</u><u>):</u> It is a geophysical method that uses radar pulses to image the subsurface. This nondestructive method uses electromagnetic radiation in the microwave band (UHF/VHF frequencies) of the radio spectrum, and detects the reflected signals from subsurface structures. GPR can have applications in a variety of media, including rock, soil, ice, fresh water, pavements and structures. In the right conditions, practitioners can use GPR to detect subsurface objects, changes in material properties, voids and cracks

<u>Gully/Gullies</u>: A landform in the Kunene Project created by running water, eroding sharply into bedrock, and filled with a varying thickness of diamond-bearing gravel. Gullies here resemble large shallow ditches that varies from several meters to tens of meters in width.

<u>Gypcrete</u>: An indurated, or hardened, layer formed on or in soil. It generally occurs in a hot, arid or semiarid climate in a basin that has internal drainage. It usually is composed of about 95 percent gypsum (a hydrated calcium sulfate mineral) and is initially developed in a playa as an evaporite. The calcium carbonated cement in calcrete soil, sand, gravel, shells, may by totally or partially replaced by gypsum cement.

<u>Horizontal Loop EM (HLEM)</u>: A phase-component electromagnetic (EM) survey type based on with moving horizontal loop antennas (transmitter and receiver coil) at a fixed separation.

<u>Hyperspectral airborne survey</u>: A hyperspectral survey is an airborne survey system capable of recording up to 250 individually selected channels of spectral data in the range of 400nm to 1050nm. This is equivalent to having 250 cameras simultaneously recording different parts of the visual and near infra-red part of the spectrum. Hyperspectral surveys are used in forest health, forestry sustainability, biosecurity, geological mining surveys, vegetation and species mapping, environmental monitoring and contamination surveys. A hyperspectral sensor provides the ability to record, distinguish and map the following:

- specific vegetation types
- vegetation health
- specific vegetation diseases
- suspended materials and chemicals in waterways
- soil types
- certain minerals
- environmental contamination

<u>Inverse Distance Weighted (IDW):</u> Inverse Distance Weighting (IDW) is a type of deterministic method for multivariate interpolation with a known scattered set of points. The assigned values to unknown points are calculated with a weighted average of the values available at the known points. The name given to this type of methods was motivated by the weighted average applied, since it resorts to the inverse of the distance to each known point ("amount of proximity") when assigning weights.

Indicator Kriging: A method based on data transformed from continuous values to binary values, or, it begins with categorical data.

Jigging process: In the process called jigging, a water stream is pulsed, or moved by pistons upward and downward, through the material bed. Under the influence of this oscillating motion, the bed is separated into layers of different densities, the heaviest concentrate forming the lowest layer and the lightest product the highest. Important to this process is a thorough classification of the feed, since particles less than one millimetre in size cannot be separated by jigging.

Kriging: A group of geostatistical techniques to interpolate the value of a random field (e.g. the elevation Z of the landscape as a function of the geographic location) at an unobserved location from observations of its value at nearby location.

Mega-Conglomerate Gravels: The Mega-Conglomerate is the earliest diamond-bearing sediment deposited in the gully system. It is unconsolidated and completely unsorted and grain size ranges from fine sand to multi-ton boulders that seems to have been deposited under conditions of extremely turbulent flow. The large boulders consist of a black metasediment country rock with rounded and smoothed edges and the most common cobbles and pebbles consist of well rounded white quartz and reddish-brown quartzite.

Micro-Traps: Small holes, cracks, fissures, etc, in the bedrock, typically on a scale of centimetres or tens of centimetres that serves to trap diamonds and diamond-bearing gravels.

Mining License: A Temporary Mineral Right legally awarded in Namibia for mining proposes. A ML may have any size, typically less than a maximum size of 100 000ha. It is valid for thirty years, where which extensions may be applied for, based on the remaining Life of Mine (LoM).

Multispectral imagery: Multispectral images are the main type of images acquired by remote sensing (RS) radiometers. Dividing the spectrum into many bands, multispectral is the opposite of panchromatic, which records only the total intensity of radiation falling on each pixel. Usually, satellites have three or more radiometers (Landsat has seven, ASTER has fourteen). Each one acquires one digital image (in remote sensing, called a 'scene') in a small band of visible spectra, ranging from 0.7 µm to 0.4 µm, called the red-green-blue (RGB) region, and going to infrared wavelengths of 0.7 µm to 10 or more µm, classified as near infrared (NIR), middle infrared (MIR) and far infrared (FIR or thermal). In the Landsat case, the seven scenes comprise a seven-band multispectral image. In the case of ASTER (Advanced Space-borne Thermal Emission Radiometer), a multispectral image consist of 14 spectral bands.

Outliers: In statistics, an outlier is an observation point that is distant from other observations. An outlier may be due to variability in the measurement or it may indicate experimental error; the latter are sometimes excluded from the data set. Outliers can occur by chance in any distribution, but they are often indicative either of measurement error or that the population has a heavy-tailed distribution. In the former case one wishes to discard them or use statistics that are robust to outliers, while in the latter case they indicate that the distribution has high kurtosis and that one should be very cautious in using tools or intuitions that assume a normal distribution. A frequent cause of outliers is a mixture of two distributions, which may be two distinct sub-populations, or may indicate 'correct trial' versus 'measurement error'; this is modeled by a mixture model. In most larger samplings of data, some data points will be further away from the sample mean than what is deemed reasonable. This can be due to incidental systematic error or flaws in the theory that generated an assumed family of probability distributions, or it may be that some observations are far from the center of the data. Outlier points can therefore indicate faulty data, erroneous procedures, or areas where a certain theory might not be valid. However, in large samples, a small number of outliers is to be expected (and not due to any anomalous condition).

Proto-Kunene: A very large glacier valley, covered by dunes of the Namib Sand Sea, of Dwyka Fm age and containing Dwyka Fm diamictites.

Rotary pan: In a Rotary Pan plant, crushed ore, when mining kimberlite, or alluvial gravel and soil is mixed with water to create a liquid slurry called "puddle " or "porrel" which has a density in the 1.3 to 1.5 g/cm3 range. The mix is stirred in the pan by angled rotating "teeth". The heavier minerals, or "concentrate", settle to the bottom and are pushed toward an extraction point, while lighter waste remains suspended and overflows out of the centre of the pan as a separate stream of material. The concentrate, representing just a small percentage of the original kimberlite ore or alluvial gravels, is drawn off for final recovery of the diamonds.

Rough Floor Gullies: Shallow gullies gouged out of softer bedrock in a N-S direction by floodwaters eroding the softer bedrock types with the more erosion resistant horisons in the bedrock acting as gully banks. These Rough Floor Gullies are devoid of any gravel filling or cover.

Semi-variogram ("the variogram"): Three functions are used in geostatistics for describing the spatial or the temporal correlation of observations: these are the correlogram, the covariance and the semivariogram. The last is also more simply called variogram. The sampling variogram, unlike the semivariogram and the variogram, shows where a significant degree of spatial dependence in the sample space or sampling unit dissipates into randomness when the variance terms of a temporally or in-situ ordered set are plotted against the variance of the set and the lower limits of its 99% and 95% confidence ranges. The variogram is the key function in geostatistics as it will be used to fit a model of the temporal/spatial correlation of the observed phenomenon. One is thus making a distinction between the experimental variogram that is a visualisation of a possible spatial/temporal correlation and the variogram model that is further used to define the weights of the kriging function. Note that the experimental variogram is an empirical estimate of the covariance of a Gaussian process. As such, it may not be positive definite and hence not directly usable in kriging, without constraints or further processing. This explains why only a limited number of variogram models are used: most commonly, the linear, the spherical, the Gaussian and the exponential models.

Shallow Gravel Gullies: The Shallow Gravel Gullies are filled with a secondary derived marine gravel (0.1 - 0.5m thick). It would seem that the marine gravels have been derived partly from a marine rework of the older Mega-Conglomerate which also resulted in upgrading the diamond content.

Southern Embayment: A embayment south of the Proto-Kunene south bank, proven to contain diamonds and initially thought to be a natural erosion feature, but now the assumption is that is part of the glacier gouging process that produced the Proto-Kunene.

Specific gravity: A special case of relative density defined as the ratio of the density of a given substance, to the density of water (H_2O). Substances with a specific gravity greater than 1 are heavier than water, and those with a specific gravity of less than 1 are lighter than water.

Tracers: Spiking Tracers mimic the density of a valuable mineral and are used in situations where the mineral particles are well liberated. Their most common application is to test for recovery of free diamonds from an alluvial deposit. They can be inserted in the ore stream anywhere between the pit and the final sorting stage. If that final sorting stage utilizes X-ray sorters, the tracers should luminesce strongly under X-rays to ensure none will be rejected at that point. Thus, if 100 spiking tracers are added to a plant feed conveyor and 90 are recovered by the sorters, one may estimate that 10 percent of diamonds are being rejected by the processing units between those points. The metallurgist may then seek the cause of those rejections by conducting further spiking tests, with different addition points, or a density tracer test to determine the partition curve.

Trend Surface (polygonal) estimate: The mapped data are approximated by a polynomial expansion of the geographic coordinates of the control points, and the coefficients of the polynomial function are found by the method of least squares, insuring that the sum of the squared deviations from the trend surface is a minimum. Each original observation is considered to be the sum of a deterministic polynomial function of the geographic coordinates plus a random error.

(Trimble) DGPS: An enhancement to Global Positioning System (by Trimble) that provides improved location accuracy, from the 15-meter nominal GPS accuracy to about 10 cm in case of the best implementations. DGPS uses a fixed, ground-based reference station to broadcast the difference between the positions indicated by the GPS (satellite) systems and the known fixed positions. These fixed stations broadcast the difference between the measured satellite pseudoranges and actual (internally computed) pseudoranges, and receiver stations may correct their pseudoranges by the same amount. The digital correction signal is typically broadcast locally over ground-based transmitters of shorter range.

Tsondab Fm: Much knowledge about the geological history of the Namib has been gained through observing the canyon walls carved by the Tsondab and Kuiseb Rivers. Through these observations, it has been determined that an arid climate began to predominate in the region about 55 million years ago, leading to the formation of a sand sea that was up to 220 meters deep -- more extensive than that of the current desert. The remnant of this sea is now called the Tsondab Sandstone Formation. The Formation's bedding and sedimentary structure indicate that ancient dunes were formed in a manner similar to today's. This suggests that the southerly wind system has been in place since that time. About 14 to 18 million years ago, the climate changed from arid to semi-arid. Since the Benguela current came into existence, hyper-arid conditions have been characteristic of the Namib desert, and continue to progress to this day.

Unsupervised Classification: One of the main purposes of satellite remote sensing is to interpret the observed data and classify features. In addition to the approach of photo-interpretation, quantitative analysis, which uses computer to label each pixel to particular spectral classes (called classification), is commonly used. Quantitative analysis can perform true multispectral analysis, make use of all the available brightness levels and obtain high quantitative accuracy. There are two broad types of classification procedures: supervised classification unsupervised classification. The supervised classification is the essential tool used for extracting quantitative information from remotely sensed image data. Using this method, the analyst has available sufficient known pixels to generate representative parameters for each class of interest. This step is called training. Once trained, the classifier is then used to attach labels to all the image pixels according to the trained parameters. The most commonly used supervised classification is maximum likelihood classification (MLC), which assumes that each spectral class can be described by a multivariate normal distribution. Therefore, MCL takes advantage of both the mean vectors and the multivariate spreads of each class, and can identify those elongated classes. However, the effectiveness of maximum likelihood classification depends on reasonably accurate estimation of the mean vector m and the covariance matrix for each spectral class data. What's more, it assumes that the classes are distributed unimodal in multivariate space. When the classes are multimodally distributed, MLC cannot get accurate results. Another broad type of classification is unsupervised classification. It doesn't require humans to have the foreknowledge of the classes, and mainly using some clustering algorithm to classify an image data. These procedures can be used to determine the number and location of the unimodal spectral classes. One of the most commonly used unsupervised classifications is the migrating means clustering classifier (MMC).

Wildcatting: According to tradition, the origin of the term (in the petroleum industry) comes from Wildcat Hollow in Oil Creek State Park located near Titusville, Pennsylvania. Wildcat Hollow was one of the many productive fields in the early oil era. A speculator who risked his luck by drilling in this narrow valley shot a wildcat, had it stuffed and set it atop his derrick. The mounted cat gave its name to the hollow. Because the area was largely untested and somewhat away from Oil Creek Flats, the term Wildcatter was coined, describing a person who risked drilling (or mining) in an unproven area.

12.0 BIBLIOGRAPHY

T1.3(ii)

1. De Decker, R. H. 2008. A technical report on the exploration programme in EPL2633 in support of an application for a mining license.
2. Leygonie, F. E. 2010. Geomine Consulting Namibia cc. Report on field Visit to NNDC EPL2633/ML156
3. Kotze, W. H. 2010. Geomine Consulting Namibia cc. Northern Namibia Development Company (Pty) Ltd - Reconnaissance Exploration Report - EPL2633
4. Kotze, W. H. 2010. Geomine Consulting Namibia cc. Northern Namibia Development Company (Pty) Ltd - EPL2633 - Report On The Phase IIA Exploration Program
5. Kotze, W. H. 2010. Geomine Consulting Namibia cc. Northern Namibia Development Company (Pty) Ltd - EPL2633 - Report On The June 2010 Trenching And Sampling Program
6. Knupp, K. P. 2010. Ground Penetrating Radar & Horizontal Loop EM Orientation Survey - Kunenemond Project - Northern Namibia Development Company (Pty) Ltd - EPL 2633 - Report Volume 1/1
7. Kotze, W. H. 2011. Geomine Consulting Namibia cc. Northern Namibia Development Company (Pty) Ltd - Phase IV-1 Resource Investigation Report - EPL2633
8. Kotze, W. H. 2011. Geomine Consulting Namibia cc. Northern Namibia Development Company (Pty) Ltd - EPL 2633 Kunene Mouth Diamond Project - Summary Of DIAMOND RESOURCEs
9. Kotze, W. H. 2011. Geomine Consulting Namibia cc. Northern Namibia Development Company (Pty) Ltd - EPL2633 - Report On The Proto-Kunene HLEM Survey
10. Maartins, L. 2014. Bi-annual Environmental Report for Exclusive Prospecting License 2633, Kunene Region, Namibia - January to June 2014
11. Van Wyk, P. 2014. Size Distribution Analysis of the Kunene Diamonds
12. Kotze, W. H. 2014. Geomine Consulting Namibia cc. Northern Namibia Development Company (Pty) Ltd - Kunene Mouth Diamond Project - Geology And Mineral Resources Report - Revised And Amended
13. Morse Investments (Pty) Ltd. Rough Diamond Off-take Agreement with NNDC

13.0 QUALIFICATION OF COMPETENT PERSON

T11

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C. Professional Bodies

- South African Council for Natural and Applied Scientific Professions (SACNASP): Reg. No. 40051/95
- Southern African Institute of Mining and Metallurgy (SAIMM): Reg No. 702273
- Geological Society of Namibia

D. Relevant Experience

- B.Sc Geology: Univ Stellenbosch
- B.Sc Honours Geology: Univ Stellenbosch
- B.Sc Honours Comp Sci: Univ South Africa (UNISA)
- GDE Mining: Univ Witwatersrand (WITS)
- M.Eng Mining (Resource Evaluation): Univ Witwatersrand (WITS)
- Exploration and Mining Geology: 41 Years (Diamonds, Base metals, Coal, Industrial Minerals, Cement Minerals, Uranium, Hydrocarbons, Gold)
    - Relevant to this report: Geomine Consulting Namibia cc has been providing geoscientific services to NNDC since beginning of 2010.

E. Relationship with Issuer

12.8 (b); 12.9 (c)

Neither the Competent Person nor his staff has or have had any interest in this project capable of affecting their ability to give an unbiased opinion and have not and will not, receive any pecuniary or other benefits in connection with this assignment, other than normal consulting fees.

F. Date of Sign-off

12.9 (a)

The sign-off date is 31 May 2015

G. Effective date of Report

The effective date of the Report is 31 March 2015

H. <u>SAMREC Code Compliance</u>

12.9 (e)

The CPR has complied with the requirements of the SAMREC Code insofar it pertains to an advanced exploration program. Compliance with Section 12.9 excluded the following:

12.9 (b):	No updates are relevant
12.9 (e) (i), (ii), (iii):	Exploration expenditures and budgets will be provided by the issuer
12.9 (g):	To be executed by the issuer

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