ITEM	DELIBERATION	DECISION/RESOLUTION	RESPONSIBLE PERSON	TIME FRAME
9.4 NC Marine Aquaculture WG-*Mr. T. Jonker- DALRD* Apology				
10. Mining Houses Feedback (Ad hoc) <u>10.1 De Beers-*Mr. A. Meyer*</u> Apology <u>10. 2 Trans Hex-*Ms. A. Makgato*</u> Feedback was addressed in 6.3 and 8.1 in the minutes <u>10.3 Alexkor *Ms. L. Swartbooi*</u> Ms . Swartbooi provided a written report *Scrap Tender:* Vendu Cape (Auction House) was appointed and will start their process during August 2016. o Vendu Cape did site visits to do a census of the scrap in the mining area and is currently busy with the roll out plan. *EIA Tender:* We are in the process to appoint the Evaluation Committee to shortlist three companies. The shortlisted companies will be invited for presentation in due course. o Discussions were held with an Environmental Management Consulting firm to assist with the evaluation of the tender. Once the terms of their appointment is finalised they will be appointed to assist the PSJV with the evaluation of the tender. *New Tender: the removal of asbestos sheeting and asbestos*		o Provide clarity/elaborate on feedback given w.r.t removal of the berm	o Ms. L. Swartbooi	o Next PCC meeting

ITEM	DELIBERATION	DECISION/RESOLUTION	RESPONSIBLE PERSON	TIME FRAME
contaminated material (from alexander bay to cape town) and demolition of buildings, including the proper handling and storage of the resultant rubble (waste) Historic Rehabilitation of buildings and structures will go out during this quarter. o The above tender was Gazetted and advertised in the Sunday Times. o There will be a compulsory clarification meeting at the Alexander Bay Mine on the 5th October 2016 at 10h00. Companies are requested to RSVP at: 011 253 9567 (011 ALEXKOR) by 30 September 2016 for purposes of preparation. *Basic Assessment for the removal of the earth berm:* o During meetings held with the Richtersveld CPA it was found that the community is against the removal of the berm and if the berm was to be removed they would want another berm to be constructed. o Now that the intention of proclaiming the Orange River Mouth as a Protected Area it is suggested that the above matter is addressed under the said process. *Employee Status:* o Permanent: 346 o Temp/Casual: 43 o Contractors: 735 *Social Responsibility:* o R111 229.34 was spend on education o R264 159.89 was spend on various SLP Projects *Rehabilitation:* o Concurrent rehabilitation is current practice. o Coastal clean-up is on-going.				

ITEM	DELIBERATION	DECISION/RESOLUTION	RESPONSIBLE PERSON	TIME FRAME
11. Awareness, Education and Training Opportunities				
11. 1 Environmental Education *Mr. M. Farmer-DENC* ○ The Northern Cape Marine and Coastal Educators Network Conference planned for the weekend of 21 October 2016, will not materialize, due to inefficient funds to host this annual conference for teachers from the Namaqua District Municipality. ○ The National Marine and Coastal Educators Network Conference will be hosted in Kwazulu-Natal, from 15-22 January 2017. Local MCEN members are encouraged to attend the conference and register as soon as possible. Themes focus on illegal mining activities along the East Coast, Coastal erosion, marine and sea life, and sustainable coastal livelihoods, to name a few. Registration details can be obtained from the Environmental Education Unit in the Department. ○ National Marine Month celebration is planned for Thursday 13 October 2016, in Port Nolloth. 60 learners from Witbank and Pella, will attend the day, as previous years, there is a strong focus on exposing learners from inland and rural, disadvantaged communities to the coast. Coastal and Marine issues will be dealt with, from a communication and awareness raising point of view and for learners to enjoy the day. A lot of these children will visit the coast for the first time in their life, which address one of the objectives of the National Marine Week, for people to be exposed and access is granted to the coast, for them to learn from and enjoy the natural heritage of all South Africans. ○ A report in the form of a presentation will be given at the next PCC meeting of all relevant Marine and Coastal				

ITEM	DELIBERATION	DECISION/RESOLUTION	RESPONSIBLE PERSON	TIME FRAME
Education issues.				
11.2 Northern Cape Coastal Audit-*Ms. W Oppel-DENC* o Ms. Oppel informed PCC members of the date, 7-11 November 2016, of the annual coastal audit. o Organisations that could benefit or add value to the audit should contact the Coastal Management Unit of DENC.				
12. **Additional matters** o None added				
13.**Matters to be escalated to WG8** o None Noted				
14. **Date of next meeting** o January 2016				
15. **Closure-** The HoD of DENC expressed thanks to PCC members for their attendance and contributions.				

Chairperson Signature: ..... Date: .....

Secretariat Signature: ..... Date: .....

Annexure 1
List of attendees – NC PCC Meeting 28 September 2016

1. HoD of DENC: Ms. G. Botha
2. Mr. J. Coraizin-SAMSA
3. Mr. B. Cornelissen-DENC
4. Ms. A. Cloete-DENC
5. Ms. S. Cloete-Kamiesberg Municipality
6. Mr. P. Cloete-DENC
7. Mr. G. van Dyk-DWS
8. Ms. B. Fatyi-Myezo Environmental Management Services
9. Mr. M. Farmer-DENC
10. Ms. L. Geldenhuys-DENC
11. Ms. A. Isaks-DENC
12. Mr. S. Jese- Myezo Environmental Management Services
13. Mr. P. Kotze-Trans Hex
14. Ms. M. Malatji-DEA
15. Ms. A. Makgato-Trans Hex
16. Mr. S. Mampe- DEDAT
17. Mr. C. Mfemana-DAFF
18. Ms. Z. Mphangwa-DAFF
19. Ms. O. Ndzumo-DENC
20. Ms. N. Van Olmen-DENC
21. Mr. E. Oosthuysen-DENC
22. Ms. W. Oppel-DENC
23. Mr. R. Van der Poll-DENC
24. Ms. L. Swartbooi-Alexkor RMC JV
25. Ms. L. Njemla-DMR
26. Ms. L. Whittles-DAFF

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28/09/2016	Date
		Meeting postponed to 20/07/2016			
MEC of DENC Ms. C. Chotelo				-	
HoD DENC Ms. G. Botha	gbotha@ncpg.gov.za bbotes@ncpg.gov.za		Botha	Present	
DENC *Member* Ms. Wilna Oppel	Coastal Management T: 027 718 8800 F: 027 718 8814 C: 082 440 3209 E: woppel.dtec@gmail.com		Apology	Oppel	
DENC *Member* Ms. E. Groeners *Alternate* Mr. M. Farmer	Environmental Empowerment Services T:0538077300 E:egroeners@ncpg.gov.za		Apology	Present	
DENC *Member* Mr. Obopeng Gaoraelwe *Alternate* Mr. Nico Laubscher	Compliance and Enforcement T: 053 807 7430/027 718 8800 ogaoraelwe@ncpg.gov.za		Apology	Apology	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28.09.2016	Date
DENC *Member* Ms. N. van Olmen *Alternate* Mr. Enrico Oosthuysen	nvanolmen@ncpg.gov.za Biodiversity Planner T: 027 718 8800 F:027 718 8814 E:enricooosthuysen@gmail.com		Apology		
DEA: Oceans & Coasts Mr. John Peter *Member*	E:jpeter@environment.gov.za		20/07/2016	Apology	
Conservation South Africa *Member* Mr. Ronald Newman *Alternate* Mrs. Esther Engelbrecht	T: 027 718 1577 E:rnewman@conservation.org eengelbrecht@conservation.or		28/09/2016	Beatline Berry attended.	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28/09/2016	Date
De Beers Consolidated Mines *Member* Mr. Anton Meyer	T: 027 807 2934 E:anton.meyer@debeersgroup.com		Apology	Apology	
Department of Agriculture, Land Reform and Rural Development *Member* Mr. T. Jonker *Alternate* Mr. L. October	T:027 712 1315 C:082 560 9050 E: tjonker@ncpg.gov.za leon.october@gmail.com		Present	Apology	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28.09.2016	Date
Department of Corporate Governance, Human Settlement & Traditional Affairs *Not formally nominated* Ms. N. Louw Corporate Governance, Human Settlement & Traditional Affairs	T: 053 807 2837 E:Louwntombi@yahoo.com		Absent	Absent	
Department of Economic Development, Environment and Tourism *Member* Mr. Edward Julius *Alternate* Mr. S. Mampe	DD: Economic Affairs T: 027 712 8000, 076 731 8731 F: 086 602 6100 E: ejulius4@gmail.com Research and Planning T:079 514 3810 E:smampe@ncpg.gov.za		Ms. Nkosi attended	Mr. S. Mampe attended	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28/09/2016	Date
Department of Mineral Resources Ms. L. Njemla Ms. D. Williams	Linda.Njemla ~~jasper.nieuwoudt~~@dmr.gov.za deidre.williams@dmr.gov.za		Present	Present	
Department of Water and Sanitation *Member* Mr. Moses Mahunonyane *Alternate* Mr. Gawie van Dyk	vandykg@dwa.gov.za 053-8308802		—	Present	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20 July 2016	Date 28/09/2016	Date
Kamiesberg Municipality *Member* Mr. Elsabè Stewens *Alternate* Ms. S. Cloete	T:027 672 1130 E: Elsabe.Stewens@gmail.com T (Garies): 027 652 8000 F (Garies): 0276528001 E: sarahc@kamiesberg.co.za		Cloete	Cloete	
Namakwa District Municipality *Member* Mr. Christiaan Fortuin Namakwa District Municipality *Alternate* Mr. A. Brown	Municipal Manager C:082 901 8539 T: 027 712 8000 E:christ@namakwa-dm.gov.za E: gusb@namakwa-dm.gov.za		Apology	Absent	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28/09/2016	Date
Richtersveld Municipality *Member* Mr. Leon Ambrosini *Alternate* Mr. S. Adams Richtersveld Municipality	Councillor T: 027 851 1111/2 C: 072 584 7219 E:sureta@richtersveld.gov.za T: 027 851 1111/2 E:sydney@richtersveld.gov.za			Absent	
SAPS Port Nolloth *Member* Lt Col J. Brooks	Cluster Commander T:027 851 1026 C:082 495 5246 E:portnolloth.cluster.man@saps.org.za		/	Absent	
SAMSA *Member* Mr. Justin Coraizin	T:027 851 7695 C:082 386 2141 E:jcoraizin@samsa.org.za		Present	Present.	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28/09/2016	Date
SANParks-Namaqua National Park *No formally nominated Member* *Ms. A. Isaks* *Alternate* Mr. Petrus Schreuder	Park Manager T: 027 672 1948 F: 027 672 1015 E: angela.isaks@sanparks.org E:petrus.schreuder@sanparks.org			Present	
Nama-Khoi Municipality- *No formal representative* The contact person is Mr. R. Hartley/Mr. W. Weels	russel.hartley@namakhoi.gov.za wweels@namakhoi.org.za		/	Apology	
Alexkor Richtersveld Mining Company-Joint Venture ***Member*** Ms. Leilani Swartbooi	T:027 831 8883/99 E:leilanis@alexkor.co.za		Present	Present	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28/09/2016	Date
Trans Hex Operations (pty) LTD. *Member* Mr. Pierre Kotze *Alternate* Abegail Makgato	Operations Manager: Marine T: 027 217 1561 C: 082 451 2673 E: pierrek@transhex.zo.za T:021 937 2028 abegailm@ranshex.zo.za				
Richtersveld CPA *Member* Mr. Edwin Farmer	edwincfarmer@gmail.com 076 630 4060 rgevcpa@gmail.com		Apology Absent	Absent	
SALGA Mr. Lesang Daniels Mr. M. Mongwe	ldaniels@salga.org.za mmongwe@salga.org.za mmongwe@salga.org.za		Absent	Absent	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28/09/2016	Date
Dept. Public Works Faizal Paulsen Clarence Williams	faizal.paulsen@dpw.gov.za 0538385270 clarence.Williams@dpw.gov.za 0538385324		Present	Absent	
DENC Mr. Bronwen Cornelissen Coastal Management	Environmental Officer: Coastal Management T: 027 718 8800 F: 027 718 8814 C: 082 440 3209 Bronwen.dtec@gmail.com		Present	Present	
DENC Ms. Adeleen Cloete Coastal Management	Environmental Officer: Coastal Management T: 027 718 8800 F: 027 718 8814 C: 082 440 3209 adeleenmarine@live.co.za		Apology	Adeleete	

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/16	Date 28-09. 2016	Date
Zinaco Jika	Deputy Director: Aquaculture Authorisations ZinacaJ@daff.gov.za	(021) 402 3356		Absent	
KISHAN SANKAR	AQUACULTURE ADVISOR. OPERATION PHAKISA DELIVERY UNIT DAFF	021 [illegible] 3631		Absent	
Leilani Swartbooi Alexkor RDC	Environmental Manager 027 831 8383 leilanis@alexkor.co.za				
Louise Geldenhuys DENC	Research + Devel. Support 027 718 5800 geldenhuys.louise1@gmail.com				
ONwabile Ndzumo DENC	Impact Management onyndzumo@gmail.com 027 718 5800				

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date	Date 28.09.2016	Date
René April DENC	Corporate Services 027 718 5800				
Bonny Maqoko DENC	Corporate Services 027 7188500				
DARREN ENGELBRECHT. DALRRD	FARMER SUPPORT & DEVELOPMENT. 027 7121315				
JUSTIN CEDRIZIN SAMSA.	Principal Officer 027851-7615				
Thirusa Jonker DALRRD	Scientific manager 0833739006				

NC PCC Meeting

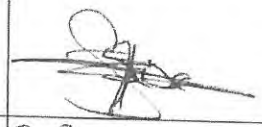
Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28.09.2016	Date
~~Ryan Peter~~ DEA C&L	~~Deputy Director~~ ~~021 814 2640~~	~~20/07/16~~			
Adriaan Le Roux DENC Compliance	Environmental Management Inspector 027 718 8800 adriaanleroux7@gmail.com				
LESEDI PULS OFFICE OF THE MEC	SPOKES PERSON				
FAIZAL PAULSEN NDPW PROPERTY MANAGEMENT	FAIZAL.PAULSEN@DPW.GOV.ZA 053 8385324 PROPERTY MANAGEMENT				

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date	Date 28.09.2016	Date
P. Kotze TRANSHEX	OPERATIONS & ENVIRONMENTAL. 027-2171521/0824512673	20/7/2016.			
Abegail Nakgato Transhex - WC R	Environmental Officer 021 937 2028 074 733 0007	20/07/2016			
DMR.	ASD: Environment 027 712 8175 063 505 4862				
Lefi hogonolo Setlhabi DEA&T	Manager 053 830 4870 0833668175				

NC PCC Meeting

Name & Organization	Designation & Contact Details	Date 14 June 2016	Date 20/07/2016	Date 28 09 2016	Date
Keneilwe Nkosi DEDaT	SENIOR MANAGER Policy & Planning Knkosi@ncpg.gov.za 053 - 830 4869	20/07/2016.	→		
Zumeka Mphangwa DAFF (Fisheries)	Pcit Mellett Compliance 073 222 4987 Zumekam@daff.gov.za	20/07/2016	→		
Peter Cheete DENC(R&DS)	Research & Development Support (DENC)	28/09/2016	→		
Malshidisho Malatji DEA: O&C	ENVIRONMENTAL OFFICER OCEANS CONSERVATION STRATERGIES	/	/	28/09/2016	
LAURINE WHITTLES (DAFF)	STAKEHOLDER ENGAGEMENT 0278518363 0718978048 Laurine@enda.agric.za			28/07/2016	

Name & |Organisation	Designation & Contact details	Date 14 June 2016	Date 20/07/2016	Date 28 September 2016	Date
Sicelo Jebe Myeza	Business Development Manager				
Babalwa Fatyi (myeza	Managing Director			28 Sept 2016 	
Lalpu V.S. Pol DENC	PARTNERSHIPS 082-525 3356				

West Coast Resources

MYEZO ENVIRONMENTAL MANAGEMENT SERVICES

Environmental Stewardship

WEST COAST RESOURCES-KOINGNAAS AND SAMSONS BAK COMPLEXES-ENVIRONMENTAL IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT ASSESSMENT REPORT SUBMITTED FOR ENVIRONMENTAL AUTHORISATIONS IN RESPECT OF AN AMENDMENT OF A MINING RIGHT HELD BY WEST COAST RESOURCES (PTY) LTD, OVER THE KOINGNAAS AND SAMSONS BAK COMPLEXES

Document Name: WKSCE-Reports-Environmental Impact Assessment Appendices h-6 to Appendix h-l
Document Status: Rev.1

Volume 3 (Public participation and supporting documentation: Appendices h-6 to Appendix h-l
Date: 21 November 2016

Myezo Ref: WKSCE/2015/02/EIAr
DMR Ref: NC0043-MR/102 and NC0044-MR/102

Volume 3 of 4
PART D

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

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Postnet Suite B165, Private Bag X18, Lynnwood Ridge, 0040, Pretoria, South Africa, 645 Jacqueline Street, Unit 17 Garsfontein Office Park, Garsfontein, Pretoria, 0081, South Africa

MYEZO ENVIRONMENTAL MANAGEMENT SERVICES
Environmental Stewardship

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WEST COAST RESOURCES-KOINGNAAS AND SAMSONS BAK COMPLEXES-ENVIRONMENTAL IMPACT ASSESSMENT

INDEX FOR SUPPORTING DOCUMENTATION AND RESULTS OF PUBLIC INVOLVEMENT FOR THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT SUBMITTED FOR ENVIRONMENTAL AUTHORISATION, IN SUPPORT OF AN AMENDMENT TO MINING RIGHT, HELD BY WEST COAST RESOURCES (PTY) LTD, OVER THE KOINGNAAS AND SAMSONS BAK COMPLEXS

Document Name: WKSCE-PI-EIA -PI-Index for supporting documentation and results of public involvement for the Environmental Impact Assessment report (EIAr)

Date: 21 November 2016

Myezo Ref No: WKSCE/2015/02/EIA

DMR Ref No: NC0043-MR/102 and NC0044-MR/102

VOLUME 3 OF 4: PART A (Included in a different document)

Appendix 1: Qualifications, Registrations and Certificates

Appendix 2: Curriculum Vitae and Company profile

Appendix 3: Locality Map

Appendix 4: Surface infrastructure layout plan (Drawing 001)

Appendix 4.1: Layout of mobile wet screening plant

Appendix 4.2: Existing and proposed slimes dam location sites

Appendix 4.2.1: Existing and proposed slimes dam location sites (North)

Appendix 4.2.2: Existing and proposed slimes dam location sites (South)

Appendix 4.3: Existing and planned infrastructure network

Appendix 4.3.1: Schematic electrical network for the Kleinzee - Koingnaas area

Appendix 4.4: Proposed 200 tph Screening and Scrubbing Plant

Appendix 4.5: Existing 50 tph Michelle's Bay Plant

Appendix 4.6: New 10 tph mobile Dense Media Separator (DMS) prospecting plant

Appendix 5: Potential mine blocks for the areas outlined in the figures below

Figure (d) (ii) - 10: Scheduled mine block depletion for the Koingnaas Complex

Figure (d) (ii) - 11: Scheduled mine block depletion for the Koingnaas Complex – Michelle's Bay - Langklip area

Figure (d) (ii) - 12: Potential mine blocks (coffer dam location) for the NP (Noup) - Beach Zone on Noup

Figure (d) (ii) - 13: Potential mine blocks (coffer dam location) for the VB (Visbeen) - Beach Zone on Somnaas and Koingnaas

Figure (d) (ii) - 14: Potential mine blocks (coffer dam locations) for the KN (Koingnaas) - Beach Zone in the northern part of Koingnaas

Figure (d) (ii) - 15: Potential mine blocks (coffer dam location) for the KN_F7_Ext (6869-Channel Extension) - Beach zone on Koingnaas

Figure (d) (ii) - 16: Potential mine blocks (coffer dam location) for the LKC (Langklip) - Beach in the central part of Langklip

Figure (d) (ii) - 17: Potential mine blocks (coffer dam location) for the LK (Langklip) - Beach Zone the southern part of Langklip

Appendix e-1: Applicable legislation

Appendix h-1–h-7: Public involvement appendices (Adverts, site notices, IAPR register, communication to and from stakeholders, minutes, information sharing)

- Appendix h-1: Advert
  - Appendix h-1.1: Proof of publication
  - Appendix h-1.2: Print out of how it looks like
- Appendix h-2: Site Notice
  - Appendix h-2.1: Photos of proof
  - Appendix h-2.2: Print out of how it looks like
- Appendix h-3: IAP register
- Appendix h-4: Communication with Stakeholders
  - Appendix h-4.1: Communication to Authorities
    - Distribution List for Scoping and EIA reports
    - ✓ Appendix h-4.1.1: Correspondence regarding meetings and other general matters
    - ✓ Appendix h-4.1.1.1: DENC
      - Meeting requests and confirmation in the form of email and/or a letter
      - Scoping and EIA report submission and other related matters

VOLUME 3 OF 4: PART B (Included in a different document)

- ✓ Appendix h-4.1.1.2: DAFF
  - ❖ Meeting requests and confirmation in the form of email and/or a letter
  - ❖ Scoping and EIA report submission and other related matters
- ✓ Appendix h-4.1.1.3: DMR
  - ❖ Meeting requests and confirmation in the form of email and/or a letter
  - ❖ Scoping and EIA report submission and other related matters
- ✓ Appendix h-4.1.1.4: DEA
  - ❖ Meeting requests and confirmation in the form of email and/or letter
  - ❖ Scoping and EIA report submission and other related matters
- ✓ Appendix h-4.1.1.5: DWS
  - ❖ Scoping and EIA report submission and other related matters
- ✓ Appendix h-4.1.1.6: Local Authorities
  - ❖ Scoping and EIA report submission and other related matters
- ✓ Appendix h-4.1.1.7: PCC Members
  - ❖ Scoping and EIA report submission and other related matters
- ✓ Appendix h- 4.1.1.8: DCA
  - ❖ Meeting requests and confirmation in the form of email and/or a letter
  - ❖ Scoping and EIA report submission and other related matters

➢ Appendix h-4.2: Communication from Authorities

➢ Appendix h-4.3: Communication to Stakeholders (Interested and affected parties)

- ❖ Scoping notification list
- ❖ EIA notification list

- ✓ Appendix h-4.3.1: Correspondence regarding meetings
- ✓ Appendix h-4.3.2: Scoping and EIA report notification and other general matters

➢ Appendix h-4.4: Communication from Stakeholders (interested and affected parties)

- ✓ Appendix h-4.4.1: Comments from stakeholders and acknowledgement of receipt of comments regarding scoping report

- ❖ Comments from Mr. Gert Le Roux
- ❖ Comments from DAFF
- ❖ Comments from Markus Dawid (Hondelklipbay Community)
- ❖ Comments from Mining and Environmental Justice Community Network of South Africa (MEJCON-SA)

✓ Appendix h-4.4-2: Comments from stakeholders and acknowledgement of receipt of comments regarding EIA report

- ❖ Comments from Mr Gert Le Roux
- ❖ Comments from Markus Dawid (Hondelklipbay Community)
- ❖ Comments from DENC
- ❖ Comments from South African National Parks

✓ Appendix h-4.4-3: Response to Stakeholder comments

- ❖ Response to Mr Gert Le Roux
- ❖ Response to Markus Dawid (Hondelklipbay Community)
- ❖ Response to DENC
- ❖ Response to South African National Parks

VOLUME 3 OF 4: PART C (Included in a different document)

- Appendix h-5: Meetings
  - ➢ Appendix h-5.1: Agendas (included as part of minutes)
  - ➢ Appendix h-5.2: Presentation (included as part of minutes)
  - ➢ Appendix h-5.3: Minutes
    - ✓ Appendix h-5.3.1: DAFF
    - ✓ Appendix h-5.3.2: DENC
    - ✓ Appendix h-5.3.3: DMR
    - ✓ Appendix h-5.3.4: DEA
    - ✓ Appendix h-5.3.5: CAD Mapping
    - ✓ Appendix h-5.3.6: DCA
    - ✓ Appendix h- 5.3.7: PCC

VOLUME 3 OF 4: PART D

- Appendix h-6: Information provided to Stakeholders
  - Appendix h-6.1: Background Information Document
  - Appendix h-6.2: Scoping and EIA report submission and other general matters
    - To DENC
    - To Department of Environmental Affairs Oceans and Coasts
    - To West Coast Resources Offices
    - To Koingnaas Mine Office
    - To Springbok Library
    - To Kleinzee Mariculture
    - Mining and Environmental Justice Community Network of South Africa
    - Department of Environmental Affairs
    - Hondeklipbay Community
    - Diamond Coast Abalone (Pty) Ltd
    - Kamiesberg Municipality
    - Namakhoi Local Municipality
    - Department of Agriculture Forestry and Fisheries
    - Department of Water and Sanitation
    - Department of Mineral Resources (Springbok)
    - Department of Environmental and Nature Conservation
    - Sanparks
    - Mr Gert Le Roux (DCA)
    - Department of Agriculture, Land Reform and Rural Development (Mr Jonker)

- Appendix h-7: Reply slip

Appendix 2.19.1: Socio-economic investigation and social and labour plan (Included as part of the EIAr (Section 10)

Appendix 2.19.2: Heritage/Archaeological study – Included as part of Volume 4 of the EIAR (Section 1)

Appendix I – Quantum Calculation

Appendix h-6: Information provided to Stakeholders

Appendix h-6.1: BID

West Coast Resources

MYEZO ENVIRONMENTAL MANAGEMENT SERVICES

Environmental Stewardship

WEST COAST RESOURCES-NAMAQUALAND MINES-ENVIRONMENTAL IMPACT ASSESSMENT

BACKGROUND INFORMATION AND DISCUSSION DOCUMENT FOR THE AMENDMENT OF AN ENVIRONMENTAL MANAGEMENT PROGRAMME AND ENVIRONMENTAL IMPACT ASSESSMENT IN SUPPORT OF A MINING RIGHT HELD BY WEST COAST RESOURCES (PTY) LTD OVER THE NAMAQUALAND MINES

Document Name: WNE-Namaqualand Mines- Background Information and Discussion Document

Date: 23 September 2015

Myezo Ref: WNE/2015/02/BID

Tel: 012 998 7642 | Fax: 012 998 7641 | C: 082 772 2418 | email: babalwa@myezo.co.za

Postnet Suite B165, Private Bag X18, Lynnwood Ridge, 0040, Pretoria, South Africa, 645
Jacqueline Street, Unit 17 Garsfontein Office Park, Garsfontein, Pretoria, 0081, South Africa

BACKGROUND INFORMATION

You have been identified as an Interested and Affected Party (IAP) for the proposed amendment of an existing environmental authorisation for West Coast Resources (Pty) Ltd (WCR).

BACKGROUND ON APPLICANT

WCR is a merger between Trans Hex Operations (Pty) Ltd (Trans Hex), various companies and the Government Sector. They intend to revisit and mine a number of mines on the Namaqualand coast. WCR is re-establishing diamond mining operations in the Koingnaas area on the Namaqualand coast, previously mined by De Beers and under the existing mining environmental authorisation of July 2012. As part of their operations, WCR intend to mine deposits that are located on the beach and extend seaward, potentially for several hundred metres.

BACKGROUND ON PROPOSED MINING OPERATIONS

WCR has existing converted mining rights and prospecting rights over Namaqualand Mines, including a number of properties situated approximately 50 kilometres west of Kamieskroon and extending north and south of Hondeklip Bay on the West Coast of the Northern Cape Province, South Africa. The extent of the mining area is approximately 37 500 ha, as shown in Figure 1. The mining rights comprise of the Koingnaas Right (KNR) (converted in July 2012-Department of Mineral Resources (DMR) (File No. SNC 522MRC)) and the Samson's Bak Right (SBR), which was also converted in July 2012 (File No. SNC 525 MRC). The prospecting right area includes the Namaqualand Prospecting Right (NPR)(File No. NCS 672 PRC).

Koingnaas Right (KNR) incorporates the following farms:

- Somnaas 474;
- Koingnaas 475;
- Zwart Lintjes Rivier 484;9939
- Langklip 489;
- Michell's Bay 495;
- Adjacent sea strips as defined in the Notarial Lease agreement; and
- Farms Somnaas 474 and Koingnaas 475 are shared by the KNR and Samson's Bak Complex (SBC) mining areas.

Samson's Bak Right (SBR) incorporates the following farms:

- Samson's Bak 330
- Zwart Duinen 332
- Elands Klip 333
- Schulp Fontein 472
- Noup 473
- Somnaas 474
- Koingnaas 475
- Adjacent sea strips as defined in the Notarial Lease agreement.

The Namaqualand Prospecting Right (NPR) incorporates the following farms:

- Michell's Bay 495
- Langklip 489
- Farm No. 496 (known as Kliphuis)
- Kanoep 491
- Zwart Lintjes Rivier 484
- Samson's Bak 330

PURPOSE OF THIS DOCUMENT

To inform IAPs about the proposed project;
Give IAPs an opportunity to raise any concerns, or suggest solutions they might have in relation to the proposed project;
Incorporate IAPs comments, concerns, and suggested solutions into the environmental management process;
In terms of the Constitution (Act No 108 of 1996), everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and the sustainable use of natural resources while promoting justifiable economic and social development. It is thus the intention of this communication process to provide IAPs with this constitutional right and is thus also your right to participate in this development process to exercise this right and responsibility.

- Elands Klip 333
- Zwart Duinen 332
- Schulp Fontein 472
- Somnaas 474
- Koingnaas 475

The maps showing the study area are included as Figure 2 and Figure 3.

West Coast Resources (Pty) Ltd (WCR) wants to continue with mining on the areas covered by these rights, with immediate target being the Koingnaas and Michell's Bay areas by 2015 for the areas that will not trigger new listed activities. Trans Hex Group will be manager and operator of the Koingnaas Mine on behalf of WCR.

Before proceeding with the mining operations, a check of what environmental authorisations are covered under these rights was undertaken. This was done in the light of the new legal dispensation, which had culminated into the development of "one environmental system," incorporating Minerals and Petroleum Development Act, Act No. 28 of 2002 (MPRDA), National Environmental Management Act, Act No. 107 of 1998 (NEMA), National Water Act, Act No. 36 of 1998 (NWA) and the National Environmental Management Waste Act, Act No. 59 of 2008 (NEMWA).

The transitional arrangement and statement issued on 09 December 2014, by the Ministers in charge of the "One Environmental System", which states that: any Environmental Management Programme (EMP) issued prior to December 2008, is deemed to have an existing environmental authorisation in terms of NEMA.

The current EMPs have, as such, been reviewed to determine activities which would be deemed to have the existing environmental authorization, as described under the EMP. The continuation of mining activities that are planned in Namaqualand Mines will be undertaken under these existing environmental authorizations.

The triggered listed activities in terms of NEMA, NEM: WA, NWA, which are not covered in the EMP would then require a separate environmental authorisation application, which would then be undertaken while the authorised activities are implemented on site during mining.

The listed activities would be triggered for any of the mining operations under these various categories:

- Mining;
- Processing;
- Infrastructure including slimes dams and water-use requirements;
- Rehabilitation; and
- Logistics.

WCR will therefore commence with mining activities that are currently authorised under the existing mining right, but an Environmental Impact Assessment (EIA) would be undertaken for the activities that are not currently authorised, including beach mining and land-based activities.

Therefore, the application for environmental authorization will be undertaken for triggered listed activities for the Koingnaas Right and the Samson's Bak Right. However, mining will commence in 2015 for activities that are currently authorised in the EMP, with the immediate target areas, being Koingnaas 475 and Michell's Bay, which are under the Koingnaas Right.

Within the existing mining area, three sites have been identified, where such mineable blocks exist on the beach and in the sea.

PROJECT DESCRIPTION

Existing infrastructure

Koingnaas is an existing mining area with most infrastructure requirements already in place. Infrastructure at each mine site and processing operation comprising electric power supply, roads, potable, fresh and seawater supplies, fuel supply and storage and workshops, have been established and maintained by De Beers Consolidated Mines (DBCM) over the past 50 years, as shown in Annexure 1- Figure 1. Roads to beach mining areas also exist as these areas have been mined to the shore-line before and these will require minimum maintenance and extension onto the beach in future. Some of the plants and workshops will be recommissioned depending on requirement and any additional plants and/or infrastructure that may be required in future will, in all likelihood, also be established on these same sites in order to utilise existing supply routes and electricity and water connections etc.

Proposed infrastructure

The Koingnaas Mine will start up in Year 1 with the construction of a new 200 tonnes per hour (tph) screening and scrubbing plant at Michell's Bay which will feed the -12+1 mm fraction to the existing 50 tph Michell's Bay Dense Media Separator (DMS) plant. Concentrate from the DMS will be treated through the Kleinzee Final Recovery (KFR) at Kleinzee. A second 200 tph screening plant may be deployed as and if required. Additional mobile scalping screens and Finlay screens may also be required and will be deployed as necessary.

A 450 tph jig plant will start treating the Langhoogte Tailings Mineral Resource (TMR) in Year 2 and will move to Koingnaas to treat the Koingnaas TMR when Langhoogte has been completed in Year 4. This will be a generic treatment plant. The new mine design map, is shown as Annexure 1- Figure 2.

At the screening and scrubbing plant, mined gravel will be tipped onto the front end Run-Of-Mine (ROM) feeder feeding a vibrating grizzly. The very coarse +150 mm material will be discarded by means of a static grizzly and the -150 mm material will be fed to a scrubber via a desliming screen. The scrubber feeds onto a double deck sizing screen with the -12 + 1 mm screened product trucked to a 50 tonnes per hour (tph) DMS plant for concentration. The +150 mm and +12 mm screened products will be discarded to either mining voids or dumps, depending on the availability of either, whereas the -1 mm slimes material will be pumped to the nearest available mining voids registered as slimes disposal sites, wherever possible.

At beach and offshore channel mining sites Articulated Dump Trucks (ADT's) will transport the gravel to a nearby scalping and screening plant fed by seawater where the gravel may be fed directly to the feeding screen or stockpiled and fed by front-end loader to the screen. Sand and seawater is discharged back to sea. The concentrate is tapped and transported to the nearest DMS plant and final recovery. The mobile wet screening plant will be positioned near the mining area and power will be supplied by a 200 KvA generator. Oversized tailings generated by the screening plant will accumulate at the plant for further use in rock berm construction.

The 50 tph DMS plant in place at Michell's Bay is in excellent condition and is well-suited to the type of material to be treated. It has been well maintained since suspension of operations by De Beers Consolidated Mines (DBCM) and has operated efficiently and effectively at the mentioned throughputs. Existing dumps, slimes dams and mining voids at the Michell's Bay plant site will be used for reject storage depending on availability. The existing and proposed future slimes dam locations for the Koingnaas Mining area are shown in Annexure 1- Figure 2.

The details with regard to the applicable timeframes and scheduling of the various implementation phases are given below:

Production

The production process involves five phases. These include the following:

Phase 1: Because of the planned use of existing mining and treatment facilities, the Koingnaas mine is ready to start production without major constructional delay. During Phase 1, the mine will start up by commissioning a newly constructed 200 tonnes per hour (tph) screening and scrubbing plant. This plant will feed the existing 50 tph Michell's Bay DMS plant which is still in excellent condition.

Phase 2: As mining progresses toward Koingnaas, the Michell's Bay plants will be relocated to an appropriate plant site in about Year 3 with the possible addition of a new modular 200 tph treatment facility. This depends on the situation at the time and the outcome of exploration programmes that will be conducted continuously in order to increase the resource. The modular Michell's Bay plant can be relocated within weeks whereas the new 200 tph plant may take six months to design, construct and erect on site.

Phase 3: During Phase 3, a 450 tph tailings treatment facility, to be constructed initially at the Langhoogte Tailings Mineral Resource (TMR), will be relocated to Koingnaas to treat the Koingnaas TMR. It is estimated that this facility could be relocated to and recommissioned at Koingnaas within a maximum period of 6 months starting production in Year 4 of operations.

Phase 4: Phase 4 mining will involve surf zone mining, particularly in the northern Samson's Bak Right area by means of two shore-pump units. Sea wall mining will also proceed simultaneously by means of two separate operations, mining favourable sandy beaches and fluvial channel extensions into the beach-zone and beyond. These channels extend to undetermined limits offshore and mining will continue as far offshore as conditions allow. These operations can be established at short notice. Phase 4 mining will run continuously and concurrently with Phase 1 to 3.

Phase 5: Ongoing exploration drilling and sampling and Research-and-Development programmes will run concurrently with these production phases in order to further develop surf zone and offshore-beach channel mining techniques, as well as to unlock and upgrade the potential of the onland Megalodon and Cretaceous fluvial channel resource. For further exploration, a SONIC drill rig, (as shown in Annexure 2 - Figure 1), has been acquired and is currently operational and delineating mine blocks in existing resource/reserve areas. The drill will also be deployed for wider exploration and refined resource delineation on e.g. the Megalodon and other Cretaceous channels within the mining right area. A special 10 tph mobile DMS plant (as shown in Annexure 2 – Figure 2) has been purchased to treat future bulk

samples generated during these exploration programmes.

Beach and offshore channel (or coffer dam) mining and surf zone pumping will commence as early as Year 1 of operations, as soon as the EIA process has been completed and approved. Current estimates of the potential surf zone, beach and offshore channel 'resource' amounts to 0.13 Mega carats (Mcts) of Inferred Resource and 0.82 Mcts of Deposit-level 'resource' , (as shown in Annexure 1- Table 1), including the Rooiwal Bay resources and once in production, these operations will boost production substantially. Two shore-based pumping units are scheduled to process 7 895 m^3 of screened ore per annum and offshore-beach mining another estimated 126 000 m^3 per annum.

Timeframes for Mining

Based on current ore reserves and production costs, the life of mine has been calculated to the year 2029. The total production rate in the overall Namaqualand Mines mining areas is approximately 0.1 million carats per year. This production rate will be maintained for the remainder of the Life-of-Mine (LoM). The production rates as described in the Mine Plan are, however subject to change due to a variety of factors including:

- Changes in the costs of production;
- Changes in the diamond market; and
- Discovery of new deposits.

Timeframes for activities that are ready to commence (those which do not needs EIA)

Contract finalisation was undertaken in November 2014. The site establishment commenced in May 2015 and operations are anticipated to start from 15 October 2015.

Timeframes for activities that are dependent on the EIA (those which require EIA before commencement)

The awarding of contracts will be finalised in the last quarter of 2015 and operations will occur once the EIA has been approved. There is no fixed date at this stage for decommissioning and closure, as it is dependent on the diamond resources to be mined, estimated at 10-15 years.

Consideration of Project Alternatives

The various alternatives considered are with regards to mining methodologies of the onland, surf zone, beach and offshore channel operations and infrastructure to be used.

Land mining as well as surf zone, beach and offshore channel mining methods will be applied. Standard open cast alluvial mining methods will be applied to land mining initially. Surf zone mining will be conducted by means of shore-based pumping units, whereas beach and offshore channel mining will be done by means of coffer dams (i.e. beach accretion mining, sea wall mining, berm-mining, etc.). All surf zone, beach and offshore channel mining operations will be conducted both by contractors and WCR.

The alternative considerations include mining methods for deep-channel mining, both onshore and in the surf zone and offshore environments such as hydraulic mining, directional drilling and sea-walker technology.

Mining Methodologies

Hydraulic mining methods will be applied to strip overburden if and where required, for example in the LKB_04 channel area on Michell's Bay where excessive overburden has been defined. The hydraulic mining method utilizes high-pressure water jets of 28-40 bars depending on material properties. A high-pressure pump station with constant location delivers seawater by means of steel and flexible high-pressure lines to the track-mounted, remote-controlled mobile water monitor guns, as shown in Annexure 1–Figure 3. A top-down herringbone mining/stripping method is preferred as this allows for safe cutting angles, safe operating conditions and safe access around monitors. For coarse sand mining a bottom-up mining will be applied. The slurry produced will be channelled to a slurry pump station where the slurry pump is mounted on a pontoon. The slurry will be returned to the beach for beach reclamation mining purposes. Hard safety barricades will be used to protect monitors and active production faces.

Directional or navigational drilling as a mining tool to mine deeply buried alluvial deposits such as the deep Cretaceous channel systems in the Koingnaas mining area has already been investigated and tested locally by De Beers. This method is well suited to extract ore bodies situated in impenetrable areas, under water or ore bodies with unsuitable shape for conventional mining methods. Systematic pre-planned pilot holes are normally drilled across the ore body after which the holes are reamed to up to 1,3 m diameter and the ore extracted. This method may therefore become an economically viable mining method to extract ore from both the Megalodon channel and its tributaries on land as well as for the offshore submarine channels. Navigational mining, (as shown in Annexure 1- Figure 4), will be further investigated and possibly applied in future by WCR to mine from the land to offshore or on land under very deep cover.

Land Operations/Activities

The mining operations are divided into three phases which include exploration, prospecting and mining.

Drilling

Reverse circulation and mud-probe drilling were utilised to confirm the extent and nature of the gravels in the target areas. The mud-drilling methodology was amended to air-core technology in more recent times which allowed for better core recovery and improved geological understanding in the clay channel deposits.

Evaluation techniques were optimised per target depending on the thickness and nature of overburden. In areas of shallow overburden, pits and trenches were preferred, with individual sample supports being locally optimised based on expected grades. Where deep overburden was encountered (>5 m), Large Diameter Auger (LDA) drilling was employed to sample the gravels. Historically, Soilmec large LDA rigs were utilised. These holes were cased telescopically and therefore, the thicker the overburden, the smaller the area of gravel sampled. Sample sizes ranged from 1.30 m^2 (5 m overburden) to 0.68 m^2 (40 m overburden).

This sample support size was satisfactory for areas exhibiting reasonable grades but was recognised as being inadequate, in terms of sample support, for lower grade targets. Consequently, a number of larger tools were acquired and utilised in more recent times, namely the Bauer GB50 hydraulic grab (sample size of 1.77 m^2) and later the Bauer BG36, and BG48 auger rigs (sample size of 4.91m^2). These Bauer tools utilised drilling mud to prevent sidewall collapse of the hole.

A new SONIC drill rig was purchased for future exploration and is currently drilling in the Koingnaas area.

Bulk Sampling and Treatment

Trench sampling was undertaken in areas with shallower overburden with large bulk sample trenches excavated across drill-proven deposits at right angles to the coastline, as shown in Annexure 3- Figure 1.

On the Namaqualand Prospecting Right area, shown in Figure 2 and 3, airborne and ground onland geophysical surveys followed by probe and Large Diameter Auger (LDA) drilling, defined a buried diamondiferous fluvial channel, the Langklip Bay (LKB) fluvial channel on Mitchells Bay 495 extending south and east onto Farms 496 and 491, as shown in Annexure 3 – Figure 2. The LKB03 channel which runs parallel to the coastline before entering the sea at Rooiwal Bay, as shown in Annexure 3 – Figure 3, was one of the major high-grade channels mined in the Koingnaas area. Initial interpretations indicated that this channel turned west as it entered the bay.

A subsequent review of Airborne Electro-Magnetic (AEM) survey results for this area by DBCM geologists suggested that the channel may also trend across Rooiwal Bay and re-enter the land on the south-eastern side of the bay under substantial overburden as the LKB04 channel. The two possible scenarios are depicted in Annexure 3 - Figure 4. Subsequent probe drilling and limited BG36 drilling confirmed the location and extent of the LKB04 channel and as a result a mineral resource has been estimated based on preliminary sampling.

Subject to further exploration and sampling, a further Inferred Resource of 0.05 Mega carats (Mcts) (0.34 cts/st) in 0.16 Mega tonnes (Mt) of ore is estimated to be located in a shallow upper-marine gravel layer, (as shown in Annexure 3- Figure 5) spread across Rooiwal Bay (based on extensive marine-vessel sampling). Also, an estimate of the Deposit-level 'Resource' contained in the LKB_04_03 channel extension across Rooiwal Bay, as shown in Option 1, Annexure 3 - Figure 4, amounts to 0.13 Mcts in 0.23 Mt of ore (projected grade of 57.75 cpht). This 'resource' may be far greater if Option 2, (as shown in Option 2, Annexure 3 – Figure 4) is found to be the correct interpretation. It is planned to exploit the combined offshore shallow-marine and channel resources in Rooiwal Bay by means of a sea-wall or rock berm as shown in Annexure 3 – Figure 4.

Parts of the LKB_04 channel falls within the Namaqualand Prospecting Right area. The currently defined LKB_04 resource forms an integral part of the mine plan for Koingnaas and has been scheduled towards the end of the Life-of-Mine (LoM). It is therefore essential for relevant portions of this Prospecting Right as listed above to be incorporated into the Koingnaas Mining Right (KMR).

Exploration will continue in order to fully understand and delineate the LKB_04 channel resource to the east, north and south and to confirm or refute the current offshore interpretations. This exploration is likely to increase the current resource substantially and prolong LoM.

Exploration aimed at final resource delineation within current mine areas as well as on the Megalodon channel feature and its tributaries as delineated by airborne geophysics (AEM) on the eastern portions of Samson's Bak 330, Elands Klip 333, Schulp Fontein 472 and Somnaas 474 , (as shown in Annexure 3 – Figure 2) will also continue.

Extensive exploration drilling, bulk sampling and mining by DBCM have been ongoing on the Koingnaas rights over the past 40 years. These prospecting and production results form the basis for the onshore part of the Resource Statement and the mine plan for land mining.

The in situ gravel orebody, although discontinuous, is near surface and relatively flat lying with a large horizontal extent, making it amenable to open cast-strip mining. The basic open-cast mining method is shown in Annexure 1- Figure 5. Strip mining defines the mineable area as a series of parallel strips and the mining sequence is as follows:

- Overburden stripping;
- Mechanical extraction of ore;
- Bedrock cleaning;
- Loading and hauling;
- Rehabilitation of the mined area.

Overburden stripping involves the salvaging or stripping of the top soil or other growth medium, which is then either stockpiled or placed directly in another part of the mine undergoing reclamation. Mining of overburden will start at the end of the first strip and progress along the strip exposing the ore for eventual mining. Waste overburden from subsequent strips will be placed in adjacent mined-out strips where feasible. Overburden from the first mine cut in the strip sequence will in all likelihood be backfilled to some of the multitude of existing mining voids and no new overburden dump disturbance will be created. Stripping will be carried out in advance of ore excavation with the objective of creating a six-month reserve of pre-stripped area. This will allow blending of ore to match plant and production requirements. Overburden excavation is more difficult when calcretised, compacted and cemented layers are encountered and, at times, this will require drilling and blasting. In certain areas, large cobbles and boulders may also hinder stripping efforts. Hydraulic mining methods may be applied to strip overburden in areas of excessive overburden.

The overburden stripping is then followed by the bulk mechanical extraction of the diamond bearing ore. This exposed ore, which is generally a metre or more thick, will be extracted using track dozers and mechanical excavators. Bedrock cleaning then follows extraction of the ore. This process entails the sweeping of the exposed bedrock surface to remove all ore that may contain diamonds.

Subsequent to bedrock cleaning, the diamond-bearing ore is loaded into rear dump trucks and taken to the treatment plants. Rehabilitation of the mined area is then undertaken. The use of infield screening techniques is currently being considered to reduce the amount of oversize waste that is hauled to the treatment plants and to facilitate back-fill and rehabilitation where feasible.

Ancillary operations to be undertaken include dozing, ripping, drilling and blasting, road upgrade and/or construction, excavating and trenching. Concentrate from the treatment plants is sorted in the final recovery plant (situated in the Buffel's Marine Right (BMR)) and recovered diamonds are transported to Johannesburg.

Surf zone, Beach and Offshore Channel Mining activities

Surf zone geophysical (resistivity) surveys have been conducted along selected beach zones in order to map the bedrock relief and differentiate the overlying sediment package. On all resistivity sections, marine sediments are marked by low resistivity values resting on high resistivity bedrock with channel deposits marked by intermediate resistivity values.

In the Somnaas sector, a distinct channel feature was delineated corresponding to the extension of the channel mine block (SN 78H). High resistivity values within the channel deposits defined bedrock islands in the channel and helped to redefine the block boundaries of (SN 78I). A northern channel feature corresponding to the Megalodon (Somnaas) channel display very uneven bedrock features over the entire width of the channel feature (~ 270 m).

In the Channel 6869-Swartlintjies sector all resistivity sections show a clearly defined channel (~ 120 m wide) extending offshore from mined blocks KN_6869_F6-C and KNF7. A well-defined marine gravel unit overlies fluvial channel clay with probable fluvial gravel at the base, as shown in Annexure 3- Figure 1.

In the LKC-Langklip sector bedrock is relatively shallow and a pebble, cobble and boulder-horizon was found within the marine sediments correlating well with borehole results inland. The bedrock dips relatively steeply towards the sea and shows the main channel ~20 m wide extending seaward from Block LKC1_D and E.

The resistivity surveys enabled resource recalculation for channel extension blocks and led to a significant net gain in resource.

Surf zone pumping operations to 31.49 m seaward of the low-water mark by diving contractors have also been in

progress for many years. These units are typically manned by four people using a tractor, an air compressor, a gravel classifier and a small sorting jig to mine various trap sites along rocky shores. It is planned to continue surf zone pump mining by means of two contractors based on results of similar previous operations. Contract surf zone pumping will commence as soon as two suitable contractors have been appointed.

Apart from mining favourable sandy beaches, the focus will be particularly on the extensions of high-grade fluvial channels crossing the surf zone to deeper water environments.

WCR aim to apply various surf zone, beach and off shore channel mining methods, particularly in the Koingnaas and northern Samson's Bak regions,

Shore-based pumping operations

The surf zone is defined as that area extending from the high-water mark to 31.49 m (100 Cape feet) beyond the low-water mark. Mining in this zone, and to water depths of about 10 m, is primarily shore-based. The operations are confined to small bays, and are typically conducted using small-scale, diver-assisted suction equipment. The submerged target gravels are mined by two diver-guided 20 cm suction hoses which feed to a tractor modified to drive a centripetal pump and rotary classifier. The classifier, which is positioned in the intertidal area, sorts the pumped material and extracts the size fraction of interest. The diamond-bearing gravel is bagged and transported on a daily basis to the nearest processing facility for diamond extraction. Large-sized fraction tailings (+25 mm) are accumulated around the classifier and the fine tailings (-2 mm) are returned directly to the sea as a sediment slurry.

These fines may form turbid plumes in the nearshore but are generally rapidly dissipated by wave action. The oversize tailing heaps which accumulate around the classifier are dispersed during the high tide, or mechanically redistributed over the beach at the end of mining operations. Care is taken to deposit oversized tailing below the High Water Mark (HWM) to allow natural redistribution by wave action.

A shore-based operation typically consists of two to four divers, their assistants, and a tractor-driven classifier. The divers operate on surface-supplied air, and guide the distal end of the suction hose into the gravel deposits, which are sucked up and delivered directly to the classifier.

To gain access to the water, the contractors attempt to locate their equipment as close to the sea as possible in the supratidal and intertidal regions. The network of existing roads is more than adequate to provide contractors with access to their mining sites, and no new roads need to be created. Roads and tracks used regularly by contractors will be maintained by WCR. The topography of the bays targeted by shore contractors, enables the storage of classifiers and hoses above the HWM on site. As classifiers and suction hoses are too cumbersome to be removed from the site each time, pumping operations are interrupted for short periods, which circumvents excessive use of the tracks. The equipment storage areas are usually restricted to an area of $<5\ m^2$ and damage to strandveld vegetation is therefore limited.

Beach and offshore channel mining

WCR plans to extend its mining activities in some beach areas below sea level by constructing protective sea-walls and/or berms (coffer dams). A schematic representation of the beach mining/ coffer dam process is shown in Annexure 1- Figure 6.1 and Figure 6.2. Depending on the quality of the resource and the coastal and seafloor configuration, the surface extent of the scheduled mining blocks may stretch to approximately 100 m or more seaward from the high-water mark.The mineable gravels are located below sea level at depths varying from -5 m to -20 m below mean sea level.

Coffer dams or sea wall development will be used to reduce the velocity of water in the mining area. The coffer dam will be constructed to allow beach mining to be conducted effectively, without the disturbance by sea water flows. Land mining equipment will be used for seawall construction and maintenance. The following approach will be adopted for the construction of the coffer dams:

- Sea wall development and pushing material out onto the surf zone and then mining behind the wall. Material would be required for dam wall construction. This material could be either rock boulders or sand bags.
    - Rock boulders are typically used to reduce the velocity of water so that mining operations can be undertaken without disturbance due to water flows into the operations. The rocks would be obtained from the land.
    - Sandbags, most commonly used for coastal protection works in South Africa, are made from a multi-layered needle-punched geotextile. Sandbags are most suited for applications where wave

energy is low, such as in lagoons and lakes, or where they are infrequently exposed to wave action or for short periods, such as for emergency measures or applications above the typical high water mark. They are generally not used on rocky areas due to risk of puncturing the bags. Sandbags are available in various sizes and constructed of various types of materials.

Artificial accretion, or reclamation, of the beaches has been identified as a method to allow these blocks that presently lie seaward of the low-water mark to be accessed for conventional open-cast mining.

Similar beach mining operations have been previously undertaken south of Koingnaas, near the Oliphant's River, although these have generally been confined to the intertidal beach area. Beach mining operations are presently being undertaken along the coastline near Alexander Bay.

In particular, beach accretion and coastal protection measures that would be employed during the mining are to be developed to a sufficient level of detail for it to be adopted for assessment in the Environmental Impact Assessment (EIA). Such coastal protection measures are required for possible mining at the following locations:

- Sandy beach sites known as Site 68/69, Somnaas and Langklip;
- Diamond deposits on the seabed and adjacent beaches within Rooiwal Bay;
- A generic protection design to be applied on the rocky shoreline and mixed sand and rock shoreline elsewhere along the coastline as indicated on the Locality Map.

Beach accretion will be done with due care, to be aware of aeteration of benthic community impacts, as well as smothering and burying of marine organisms. Designs are to be developed to concept level, recognising that further design work would be required before they can be implemented.

Beach accretion methods include:

- Massive sand berms, or sea walls, typically up to 7 m, above mean sea level (AMSL) and 20 - 30 m wide can be constructed with earthmoving machinery in order to accrete the beach and protect the mining excavation. Large sand volumes are required to construct and maintain the sea walls because sand is constantly eroded from the sea wall by wave action. The rate of erosion and replenishment increases as the walls are built further into the sea.
- Dredgers or hydraulic mining with slurry pumps can be used to strip overburden sand and discharge the slurry onto the beach where wave action distributes the sand along the coast.
- The rate of accretion is dependent on the dredging rate.
- Conveyors can also be used to move sand, and coarser material, from further inland onto the beach. The front of the conveyor is moved or extended seaward as the accretion occurs. Wave action distributes the material along the coast. This method is effective if the source of sand is an existing large stockpile or dump.

For rock berms, rock is typically used to construct revetments or breakwaters with the structure usually consisting of an outer layer of large armour rock while under-layers typically consist of progressively smaller material. A berm is usually constructed seaward from the shore by end-tipping the core material from trucks. Once a sufficient section of core is built, it is covered with the larger armour-layer while an excavator is used to dress the slope to the correct profile. The berm can be extended in phases as far offshore as conditions allow, as shown in Annexure 1 – Figure 6.1 and Figure 6.2. For each site, the most economically and technically viable concept/s will be selected bearing in mind the temporary nature of the mining, the quantity and characteristics of available construction materials (rock, sand and clay), possible phasing of the mining to facilitate recovery of diamonds at an early stage, the need to minimise seepage into the mining area and the costs of protective measures. Specific beach mining methods are proposed for specific areas in e.g. Channel 6869 and Rooiwal Bay beach reclamation with sand or rock berm. Therefore, any of the proposed methods may be applied at any specific site depending on the outcome of a final geotechnical assessment of sea- and seafloor conditions.

Beach and channel mining operations are conducted along shorelines where mineralization is generally erratic. The lack of suitable technology to effectively sample these zones furthermore prevents definitive ore reserve delineation. Consequently, the beach mining to be practiced by WCR and its contractors may at times resemble prospecting operations rather than full-scale mining.

Only once a bedrock feature yielding a viable reserve has been identified, do operations take on a larger, more permanent scale by sequentially mining the blocks following the feature. The modus operandi and scale of operation therefore depends largely on whether prospecting or mining is taking place and on the depth of overburden that needs to be removed before the target gravels can be accessed.

Infrastructure associated with envisaged mining methodologies

The associated infrastructure would also entail: stockpiling areas; existing network of roads from main arterial road; excavators; rotary pump unit for extraction; classifiers; compressors and diver support equipment and four wheel drives, for dam wall maintenance.

- Heavy machinery will be used to access target gravels overlying the bedrock. This includes hydraulic excavators, bulldozers or front-end loaders. Equipment used for land based operations i.e. bed rock cleaning will include pneumatic drills, compressed air blow pipes, picks, shovels, and large vacuum cleaners. Most haulage in the Koingnaas mining area is done with 6X6 wheel drive ADT's, carrying 40 – 50 tonnes at a time.

Water Use

Surface water use

There is some surface water in the Buffels River estuary. This is the result of the high water table caused by the presence of an aquifer in the lower reaches of this river. The lack of any permanently flowing rivers within the study area implies that surface water is not generally available for use. Sub-surface water is extracted from a number of sources and made available for the inland mining operations and the associated towns in the area.

All of Koingnaas and Samson Bak's freshwater supply comes from the local Somnaas Noup aquifer. Although three boreholes are equipped to supply water, due to the abundance of the aquifer only No. 12 (27 m deep) and 15 (24.5 m deep) are currently being utilised. Upon request from the district authority, water supply to Hondeklip Bay from Koingnaas has also been implemented. Farming operations in the region obtain groundwater from boreholes situated on various properties. Most farms in the region have at least one operational borehole.

Processing

Run-of-Mine (ROM) will be loaded and hauled to the treatment plants. At the treatment plants, diamonds are separated out in a series of concentrating processes.

Plant residue disposal

The plant produces a coarse residue and a fine residue. The coarse residue is disposed of on the Coarse Residue Deposit (CRD) by means of a system of conveyor belts, and the fine residue is disposed of on the Fine Residue Deposit (FRD) as slurry. Various CRDs and FRDs are maintained for continuous production purposes and emergency situations.

Waste Disposal

Industrial and domestic waste disposal sites

It is planned that the mines will follow a waste management procedure developed with a recognised specialist in waste management. In this respect, waste guideline documents covering numerous fields will be developed and submitted to the relevant Competent Authority.

WCR intends to manage solid waste generated by the mines through means of dumps, including soft scrap (domestic/general waste) and hard scrap (recyclable) dumps, garden refuse dumps, salvage dumps and building rubble dumps.

A total of 22 waste permits have been issued to Namaqualand Mines for these dumps. Four of these sites are situated within the Koingnaas Right (KNR).

In addition to the above wastes, Namaqualand Mines plans to deal with other wastes as follows:

- Medical waste from the Kleinsee hospital and clinics will be removed off site by a contractor for safe disposal;
- Asbestos fibre sheeting will be removed off site by a contractor and disposed of at the registered hazardous waste facility at Vissershok in Cape Town;
- Used oil will be collected and recycled by Oilkol;
- Other hazardous wastes (such as lubricants from the dragline, oil contaminated with chlorinated hydrocarbons, electrical cleaning solvent, certain chemicals and fluorescent tubes) will be treated in accordance with Namaqualand Mines' waste management protocol and disposed of at Vissershok. Removal of the hazardous waste will be conducted quarterly by contractors.

Energy/Electricity

Eskom electricity is supplied to Namaqualand Mines from the national power grid via Upington, Aggeneys and Springbok and to a sub-station at Gromis, near Kleinsee. From this sub-station, power is distributed within Namaqualand Mines.

Transport

Mining areas are accessed via existing public or private roads. Mining activities require a reasonably extensive network of roads and tracks to allow access by rigs, lowbeds, tankers, LDV's and 4x4 vehicles off the main roads into the various farms. The three most used are secondary roads from Springbok to Kleinsee, Port Nolloth to Kleinsee and Garies to Koingnaas. The District Municipality maintain these roads (except for 20 km from Koingnaas to the intersection with the Hondeklip Bay to Garies road). A 60 km tar road links Koingnaas and Kleinsee. Most of the roads in these towns are tarred. A 40 km gravel road connects Kleinsee to Komaggas. Access to the SBR mining area is via gravel roads only.

The majority of roads lying to the west of the N7 are gravel or unsurfaced roads, and these roads vary greatly in their state of repair and accessibility.

Considering the sparse distribution of existing farm roads and tracks, it is certain that quite a significant number of new access routes may have been made in the KNR and SBR. Some of these routes would have been used on a regular basis for the entire prospecting period, while others would only have been used a few times over a short period of time.

The main haul roads run from the various mining areas to the main treatment plants and are well constructed. Smaller light vehicle roads connect offices, workshops and other frequently visited destinations.

Numerous tracks are created and used during prospecting. When no longer required, roads are closed off and ripped up to facilitate natural re-vegetation. Tracks are left to recover naturally.

Rehabilitation

Rehabilitation is conducted concurrent to mining activities. At the treatment plants diamonds are separated out in a series of concentrating processes. Rehabilitation is generally carried out by back-dumping into mined-out areas, flattening steep-sided overburden dumps and dangerous benches, and covering the resulting surface with topsoil. Experimentation is an integral part of rehabilitation methods and various soil treatments, seeding and netting are carried out in some cases.

ENVIRONMENTAL SETTING

The environmental setting described below entails the entirety of the study area, encompassing the Koingnaas Right (KNR) and Samson's Bak Right (SBR). Where the specific settings are diverse with regards to the different mining right area, these have been specified according to the applicable mining right area.

Coastal Conditions

The study area falls within the nearshore central Benguela region (Cape Columbine to Lüderitz), which is primarily characterised by variable, northward flowing, longshore surface currents, generated by consistent, strong winds and swells from the south and southwest (Shillington et al. 1990, Shannon & Nelson 1996). The Koingnaas area is situated on the West Coast with the investigated sites being exposed to typical West Coast environmental conditions. The offshore wind and wave conditions were obtained from the National Centres for Environmental Predictions (NCEP) USA. NCEP is part of the US weather services and the National Oceanic and Atmospheric Administration (NOAA).

Prevailing winds, tides, waves and currents are discussed in this section. A global prediction model is set-up with grid points at half-degree intervals at which historic (hindcast) wind- and wave data can be extracted. This global model is verified (calibrated) with various wind and wave measurement stations/devices across the world. Past studies have shown that NCEP data is sufficiently accurate along the west coast of southern Africa. This is primarily due to the direction of the deep water waves travelling from the South Western Atlantic and the consistent cold fronts passing along the south of South Africa.

The study area encompasses a ~75 km stretch of the coastal and shallow marine habitats that fall within the central Benguela region. The Benguela region is dominated by wind-driven upwelling and swell events. Seasonal changes result in substantial differences between the typical summer and winter wind patterns in the region, and a cessation of upwelling in winter.

Most of the West Coast of Southern Africa is classified as exposed, experiencing strong wave action, rating between 13 to 17 on the 20-point exposure scale. South Atlantic Central Water (SACW) comprises the bulk of the seawater in the study area, either in its pure form in the deeper regions, or mixed with previously upwelled water of the same origin on the continental shelf. The continental shelf waters of the Benguela system are characterised by low oxygen concentrations, especially on the bottom.

During upwelling, the comparatively nutrient-poor surface waters are displaced by enriched deep water, supporting substantial seasonal primary phytoplankton production. High phytoplankton productivity in the upper layers again depletes the nutrients in these surface waters. This results in a wind-related cycle of plankton production, mortality, sinking of plankton detritus and eventual nutrient re-enrichment occurring below the thermocline as the phytoplankton decays. Biological decay of plankton blooms can in turn lead to "black tide" events.

An associated phenomenon ubiquitous to the Benguela system is red tides (dinoflagellate and/or ciliate blooms). Toxic dinoflagellate species can cause extensive mortalities of fish and shellfish through direct poisoning, while degradation of organic-rich material derived from both toxic and non-toxic blooms result in oxygen depletion of subsurface water.

The study area lies within the relatively uniform cool Namaqua marine biogeographic region. The major force driving the ecology of this region is coastal upwelling, predominantly occurring in the spring/summer period when the south-easterly is the prevailing wind. The upwelling process supplies inorganic nutrients to the euphotic zone supporting high biological productivity. This coast is, however, characterized by low marine species richness and low endemicity.

Geology

The regional geology along the Namaqualand coast is characterised by Precambrian basement overlain by Cainozoic to Recent sediments.

Proterozoic gneisses or granite-gneisses underlie the greater part of the area, previously broadly classified as the Namaqualand Metamorphic Complex. This basement consists of an older suite of supracrustal rocks, now seen as bands and xenoliths of metamorphosed sedimentary and volcanic rocks.

Cainozoic sediment deposits are composed of alternating layers of conglomerate, sandstone, limestone, shales, marls, dune rock and sands of various colours (red, orange, greyish-white and beige) ranging from a depth of a few metres to greater than 100 m. Calcrete forms a cap over the sedimentary sequence in places.

Calcrete is highly inconsistent in both composition and thickness and varies from calcium-rich grits and sands to almost pure, chalky, calcareous material up to 1 m in thickness.

The KNR and the deposits of the adjacent Hondeklip Bay property are unusual as they do not conform to the West Coast mineralisation pattern where diamonds are associated with linear-raised beach deposits as represented in the Buffel's Marine Right (BMR), north of Kleinsee. The KNR, geology is somewhat more complex. In the KNR, accumulations of high-grade marine sediments occur mainly in discrete bedrock depressions which are underlain by older river channel deposits.

The KNR area is underlain by fresh to weathered gneisses and schists. The dominant structural features in the bedrock reflect the break-up fabric resulting from the split between Africa and South America about 130 million years ago (dominantly NNW - SSE). Diamonds occur in small cretaceous age dendritic channel features. The drainage pattern of these channel features were mainly influenced by structural trends within the bedrock. The origin of these channels is only a couple of kilometres inland suggesting a local source on the coastal plain for the diamonds. Subsequently these channel features were re-used by different fluvial phases over time. The current fluvial fill, where preserved, is between 25 million and 55 million years old.

Most of the sediments in these channel features were subsequently reworked by marine processes ranging in age from approximately 10,000 to 5 million years old.

Diamonds generally occur close to or on bedrock. The ore is generally less than a meter thick and consists of an angular argillaceous quartz rubble (channel sediments) or well-rounded marine grits and gravel. The marine deposits generally result in an upgrade when it reworks channel sediments. Marine reworking results in a halo of economic grades in close proximity to channel depressions. Grade varies from <5 to >500 carats per hundred tonnes (cpht) (average grade mined is approximately 25 cpht) and stone size is generally 0.22 to 0.25 carats/stone. Overburden varies in thickness from <5 to 30 m and consist of terrigenous sand, windblown sand, marine sand as well as fluvial clay and peat. Laterite (dorbank) may occur close to or on the surface.

The Koingnaas mining area has been extensively mined over the last 60 years. It comprises the southern Michell's Bay area and the northern Koingnaas area.

On land, the alluvial gravels are situated at various depths ranging from surface deposits to depths of 80 m below surface. In the surf zone, mineralized gravels occur in channels up to 30 m deep and deepening further offshore. Most of the diamonds are concentrated at the base of the fluvial and marine deposits and grades are enhanced by bedrock trap sites. Cementation occurs in places and

blasting may be required. Where the marine and channel deposits extend offshore, they occur in water depths of up to 10 m and with sediment cover of clay and sand of up to 30 m within the zone to 250 m seaward of the Low Water Mark (LWM).

Although extensively mined in the past, the Koingnaas area is still prospective on a local scale and is typified by high stone densities. Surf zone mining has been minimal in the past and that resource remains virtually untouched.

The geology of the Samson's Bak Right is regarded as a transition between the linear palaeo-beach deposits of the Buffel's Marine Right (BMR) and the Channel and embayment deposits of the KNR. The Samson's Bak Right is underlain by fresh to weathered gneisses and schists. The dominant structural features in the bedrock are the break-up fabric resulting from the split between Africa and South America about 130 million years ago (dominantly NNW – SSE). Bedrock channel features, similar to the Cretaceous-aged dendritic channels of the KNR have been identified on the Samson's Bak Right. The current fluvial fill, where preserved is between 25 million and 55 million years old. The channel ore is generally less than a meter thick and consists of an angular argillaceous quartz rubble.

Linear beach deposits, approximately 10,000 to 5 million years old are formed where marine action has reworked the underlying channel features and re-distributed the diamonds. The marine ore is generally less than a meter thick and consists of well-rounded marine grits and gravel. Marine reworking results in a halo of economic grades in close proximity to channel depressions. Grades in the SBR generally vary from <5 to >15 carats per hundred tonnes and stone size is generally 0.22 to 0.25 carats/stone.

The diamondiferous deposits of the Namaqualand coastal plain have formed as a result of the erosion of primary kimberlite pipes located inland on the craton. These diamonds were transported to the west coast by fluvial systems and deposited on the coastal plain where various stages of erosion and reworking have resulted in a complex array of sedimentary deposits, which range in age from older Cretaceous channels to more recent Plio-Pleistocene raised beaches. A number of specific factors have determined the nature of the current in situ sedimentary diamond deposits that are currently exploited, namely:

- The grade and stone size of the primary kimberlite source;
- The extensive fluvial transport distance from the primary kimberlite source;
- The dominant structural lineaments on the coastal plain resulting from the separation of Africa from South America 130 million years ago;
- The type and competency of bedrock (gneisses, schists and quartzite) on a local scale as this determines the size and quantity of trap sites developed;
- Changes in sea-level and the associated reworking of the sedimentary deposits.

The typical diamondiferous deposits observed on the coastal plain are remnant Cretaceous palaeo-channels, Plio-Pleistocene linear raised beaches and remnant Miocene palaeo-meanders. The geological maps are shown as Figure 4.1 and Figure 4.2.

Climate

Namaqualand Mines is situated in a semi-arid area. The SBR area is located next to the coast and therefore, moderating effects of the ocean are experienced.

Rainfall is less than 200 mm a year and falls during the autumn and winter months (i.e. from May to August). Coastal fogs occur year-round but are more frequent during the winter period. Temperatures are relatively cool but increase markedly during berg wind conditions. The predominant wind direction is southerly.

Average rainfall in the region amounts to about 100 mm a year and summer aridity is extreme. The frequency of fog days decreases from the coast towards the interior, a feature of all West Coast deserts.

The presence of onshore winds is vital to the advection of sea fogs landwards. Fog extends furthest inland along river courses. Coastal air temperatures are cool throughout the year but increase markedly during berg wind conditions.

The cold waters of the Benguela current cool and stabilise the near surface air mass thereby moderating air temperature and reducing the potential for rainfall along the coast. Inland, temperatures are usually warmer than at the coast.

Prevailing winds are determined by the South Atlantic high pressure system, the atmospheric pressure over the subcontinent and east-moving low pressure systems associated with the west-wind belt south of Africa.

The anti-clockwise airflow around the South Atlantic high tends to be guided by the coast, so that near the coast, the wind is predominantly from the south (onshore). In