

# THE SAMPLING JOURNEY OF THE MEGA PLACERS DEPOSITS OF NAMIBIA

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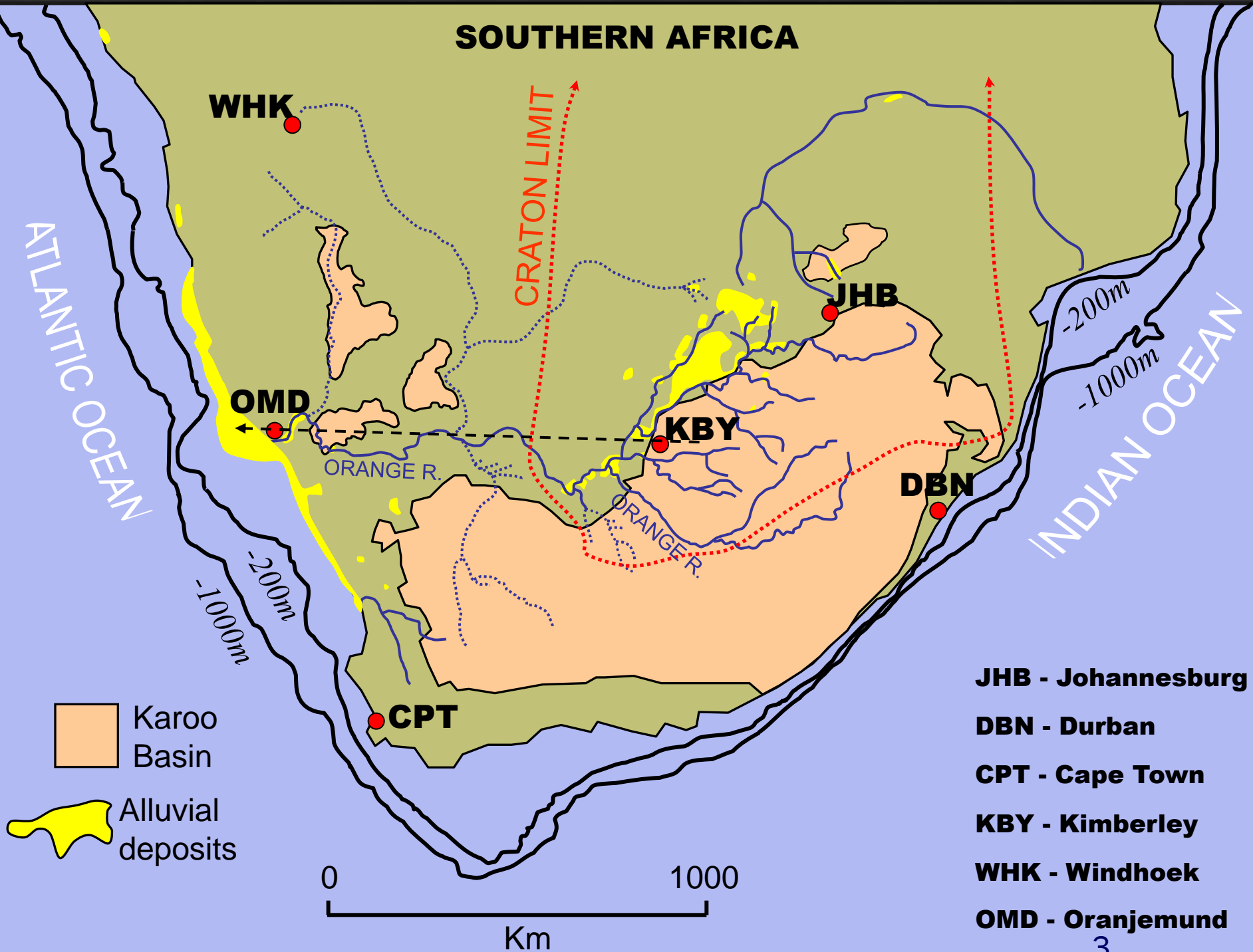
Maria Mufenda  
NAMDEB DIAMOND CORPORATION (PTY) LTD

November 4, 2014



**130 million years ago**

# SOUTHERN AFRICA



# Continental uplift, incision and gradual drying of the climate (erosion of kimberlites in the catchment)



by 42 million years ago

# From source to sink



(98%)



(40-55%)

# TYPES OF ALLUVIAL DIAMOND PLACERS

INTERNAL DRAINAGE

OLDER TERRACES

RETAINED

OLDER INTRACRATONIC BASINS

TRANSIENT

TRANSIENT

KARST

DRAINAGE BASIN

KIMBERLITES

CRATON (SOURCE)

MARGIN (THROUGH-PUT)

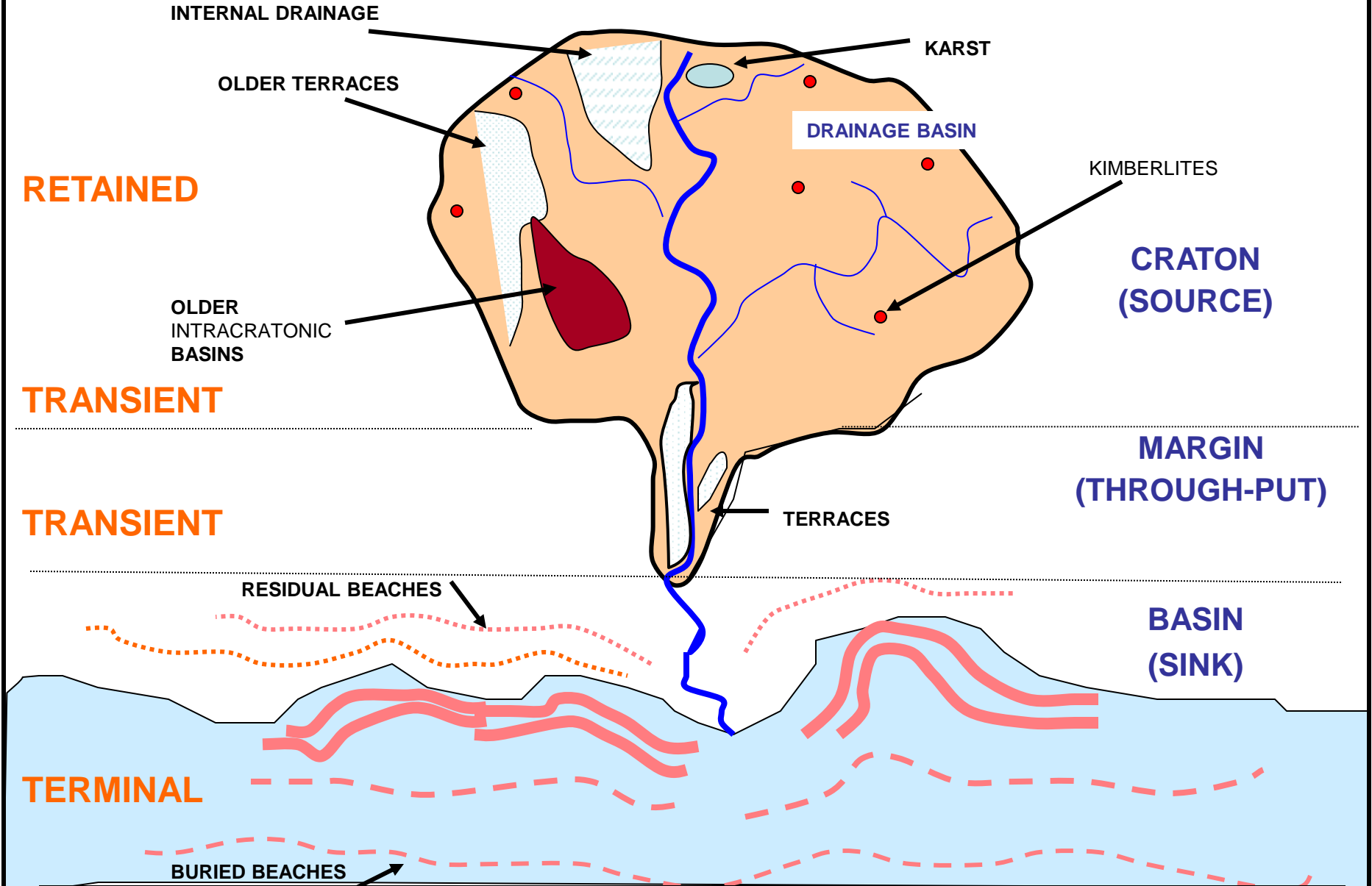
TERRACES

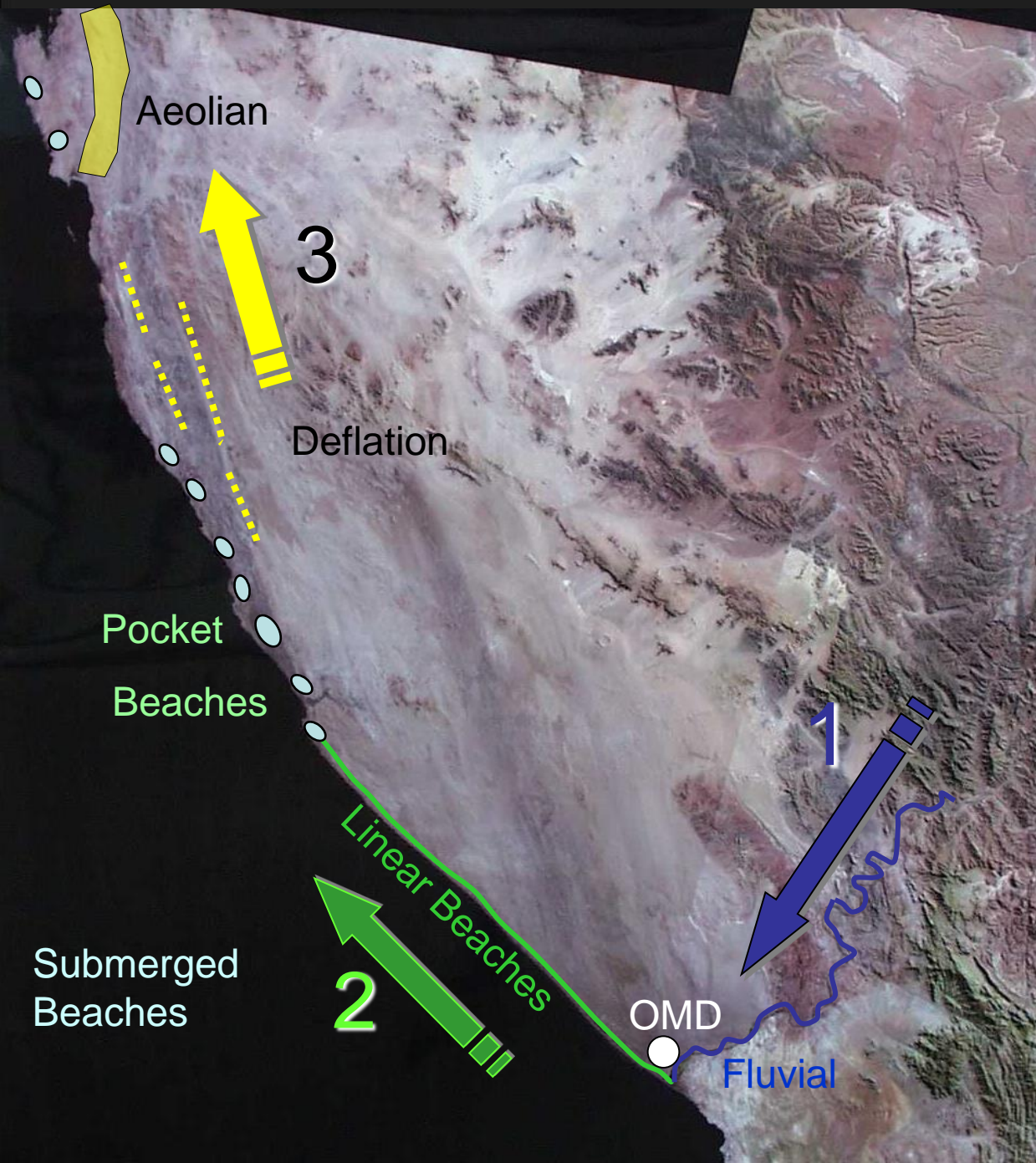
RESIDUAL BEACHES

BASIN (SINK)

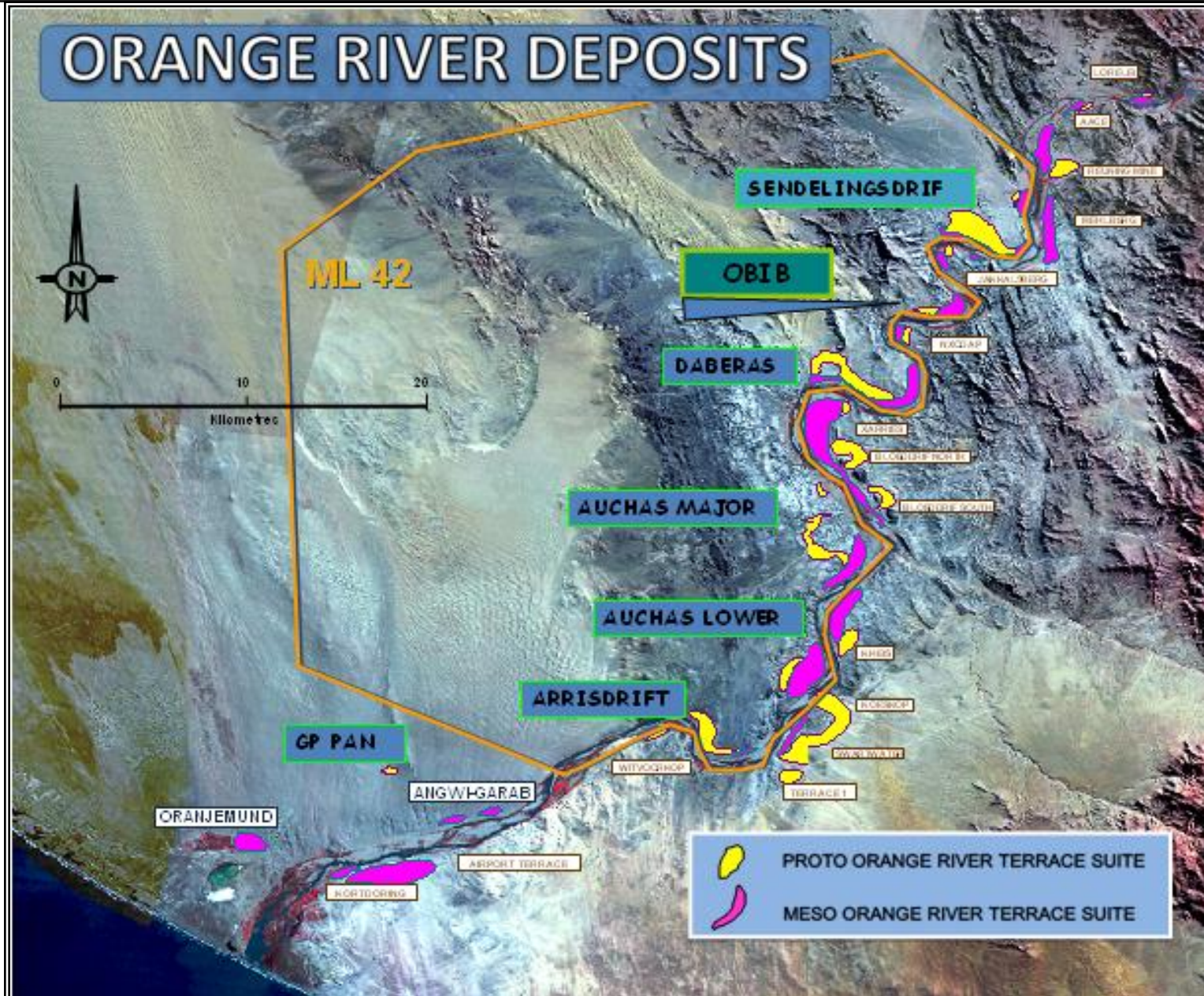
TERMINAL

BURIED BEACHES





## PLACER TYPES





# Fluvial Sequence



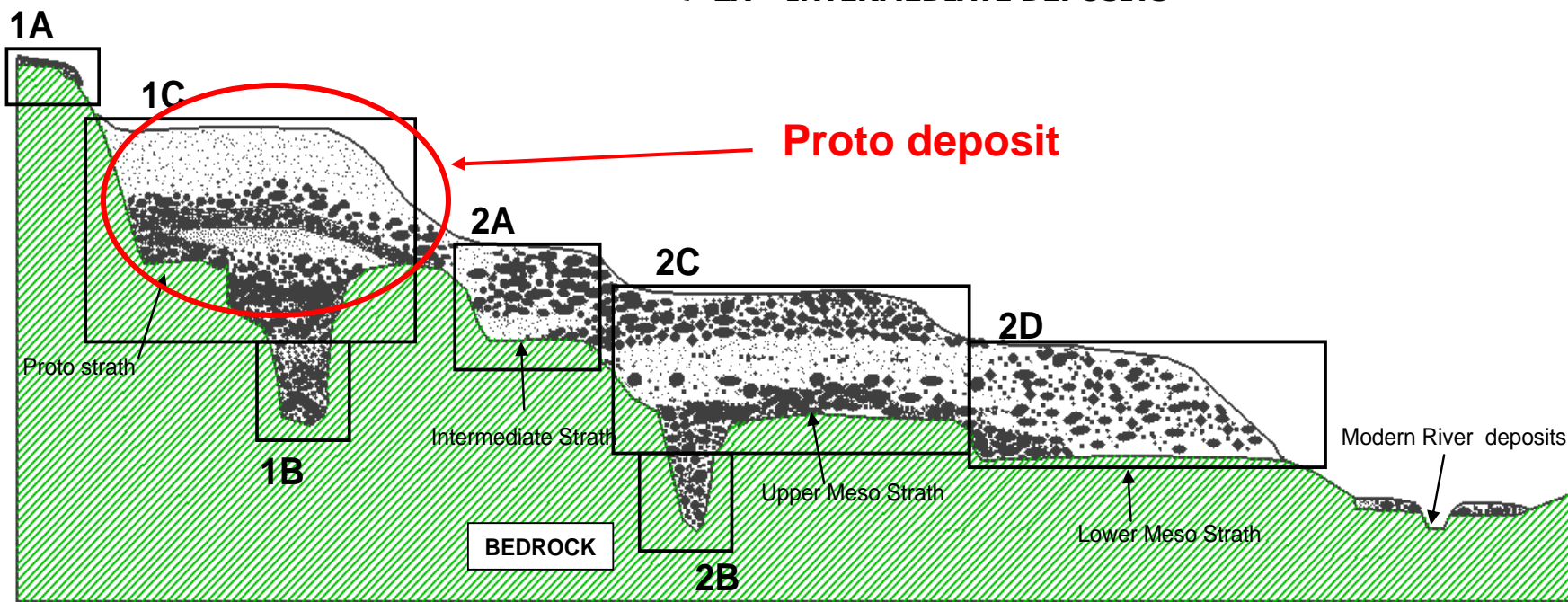
**NAMDEB**  
ON DIAMONDS WE BUILD

**PROTO SUITE**  
POST EOCENE TO EARLY MIDDLE  
MIOCENE (10 – 37 Ma)

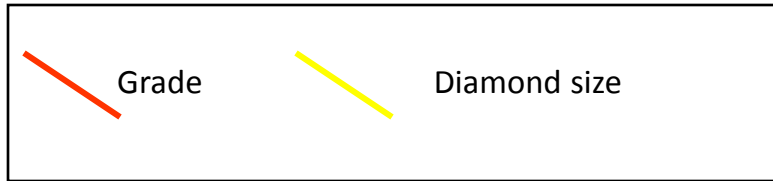
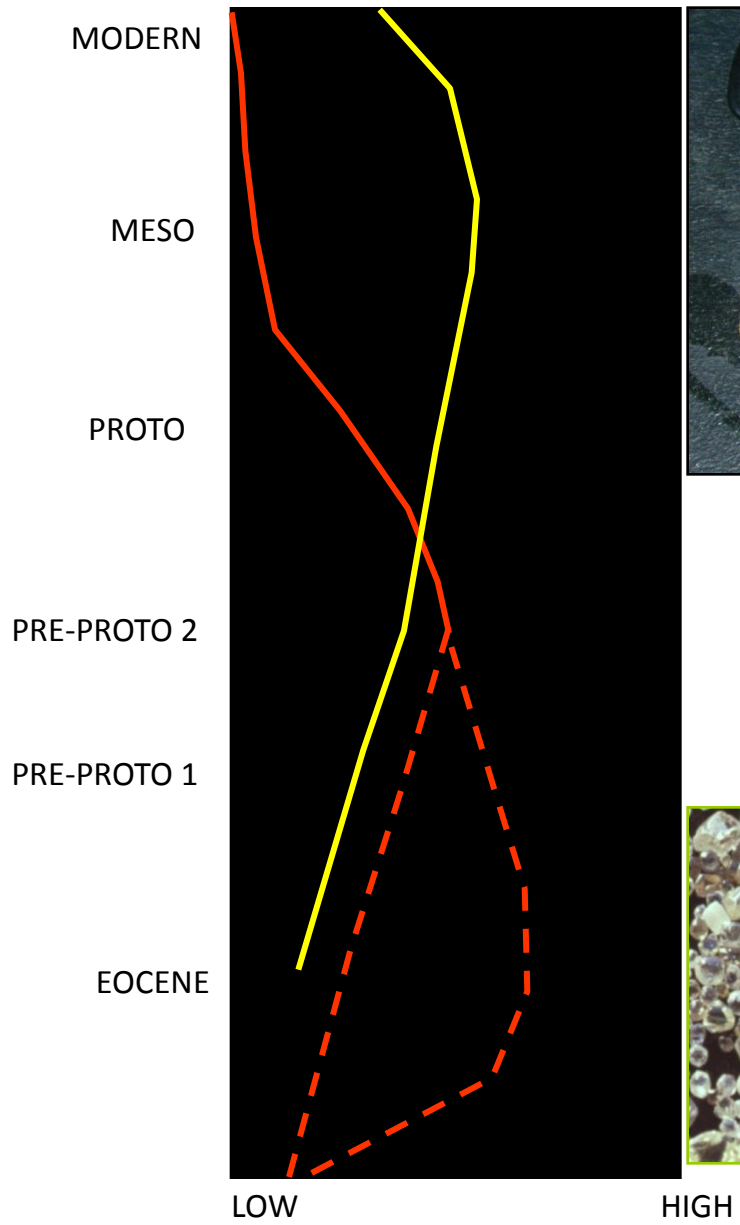
**1C – PROTO AGGRADATIONAL SEQUENCE (17.5 – 19 Ma)**  
**1B – PRE-PROTO 2 DEGRADATIONAL DEPOSITS**  
**1A – PRE-PROTO 1 DEPOSITS**

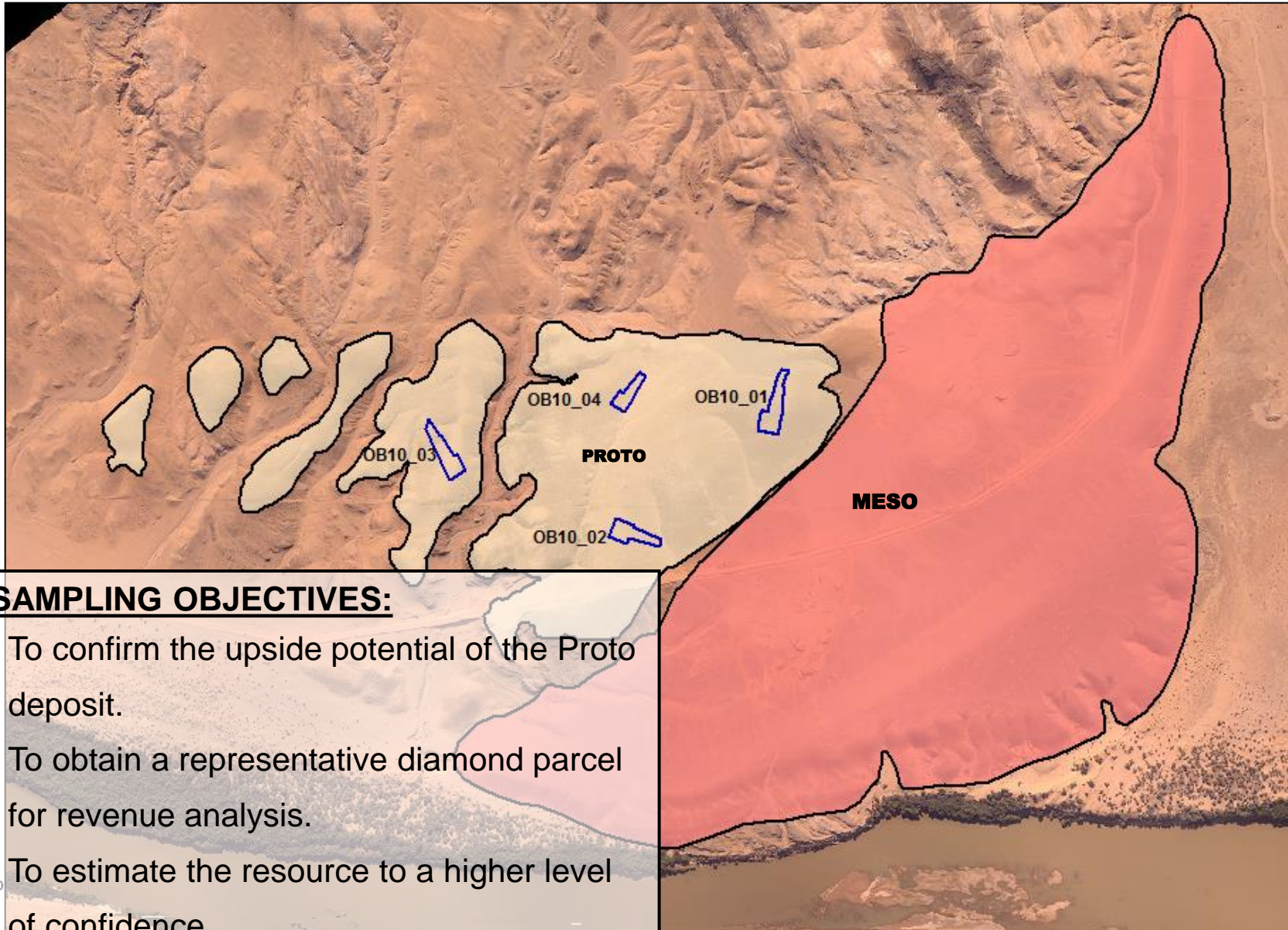
**MESO SUITE**  
POST EARLY MIDDLE MIOCENE  
TO PLIO-PLIESTOCENE (2 – 10 Ma)

**2D – LOWER MESO AGGRADATIONAL SEQUENCE**  
**2C – UPPER MESO AGGRADATIONAL SEQUENCE**  
**2B – MESO DEGRADATIONAL DEPOSITS**  
**2A – INTERMEDIATE DEPOSITS**



Sequence of Orange River deposits at one locality. *Jacob, R.J., 2005.*





## **SAMPLING OBJECTIVES:**

- To confirm the upside potential of the Proto deposit.
- To obtain a representative diamond parcel for revenue analysis.
- To estimate the resource to a higher level of confidence.

# Sampling



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# Sample Pit 2



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# Screening



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# Treatment



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# Treatment cont...

## Silo Truck



**OREX Concentrate Bin**

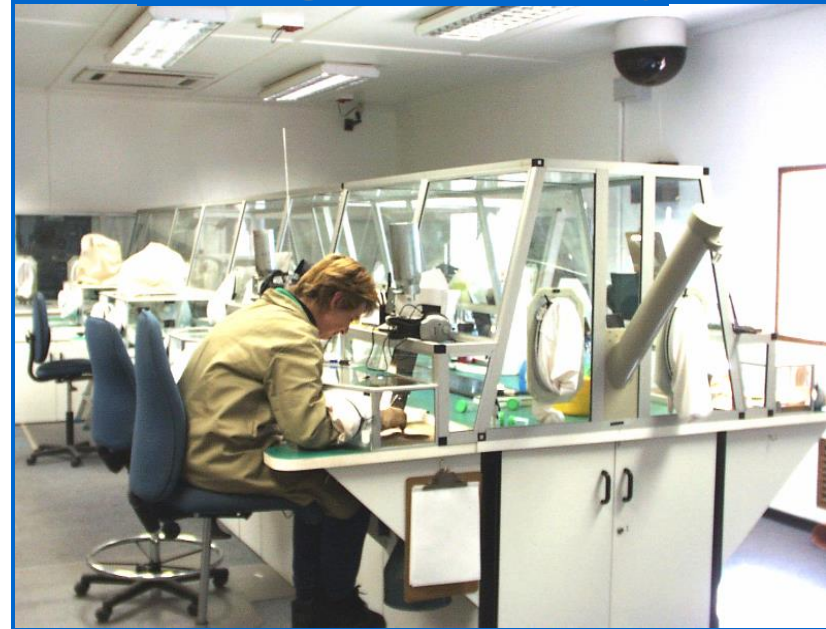
- Continuous tracer testing & simulant spiking



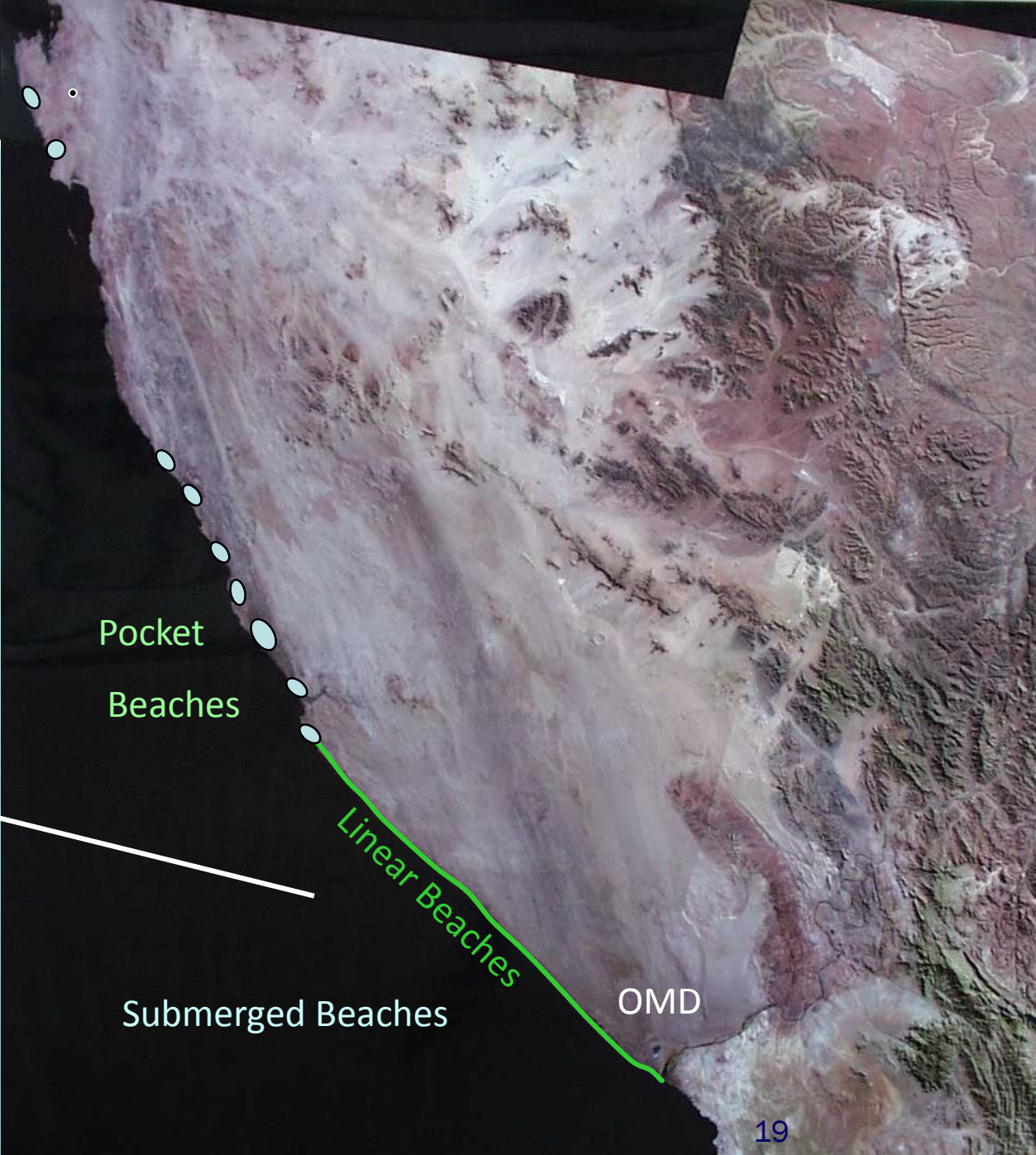
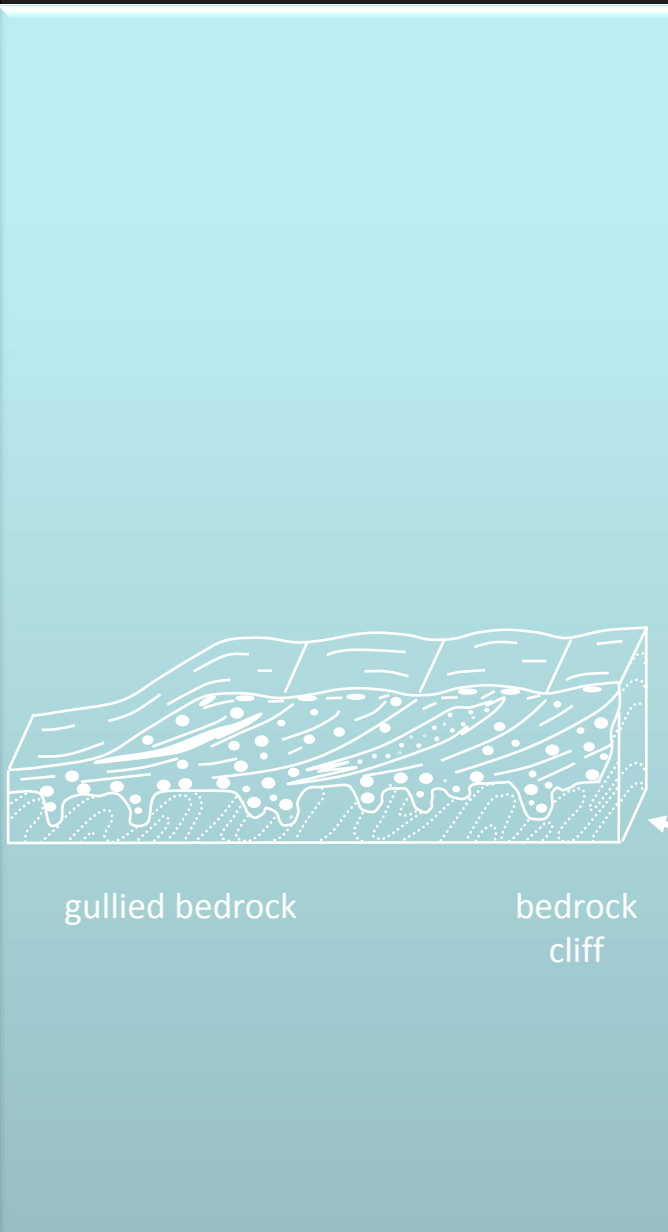
GSR

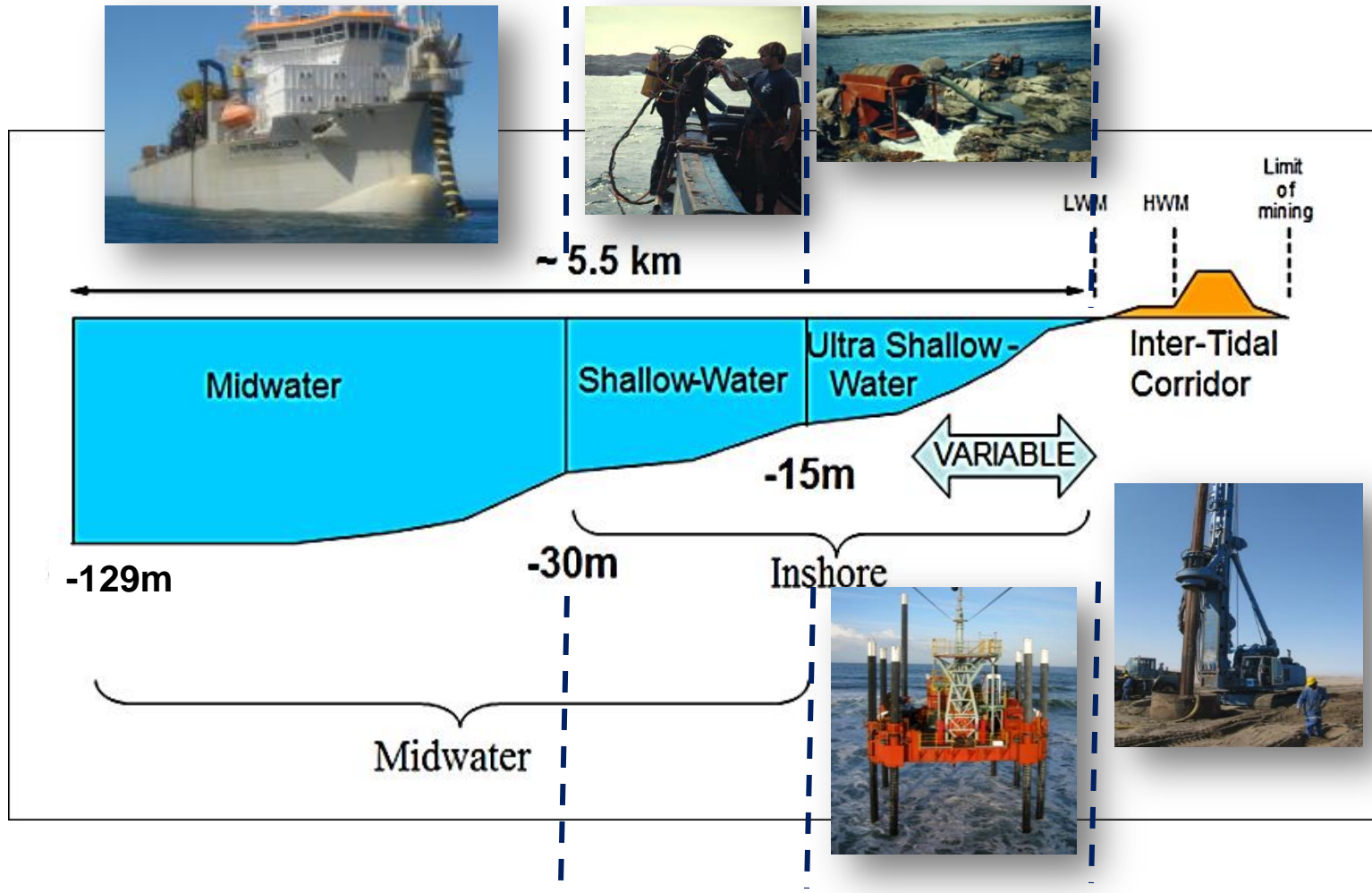


Geological Laboratory

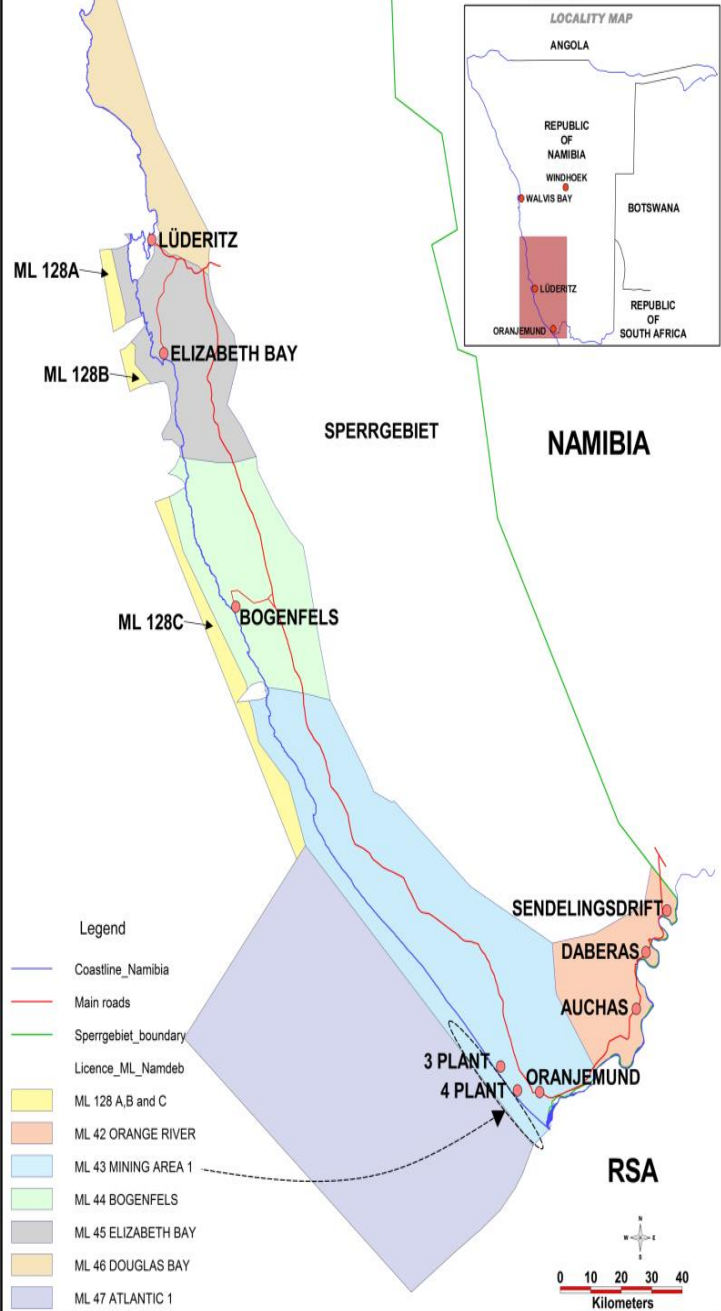


- Latest Technology
- Red Area Security
- Sample Integrity





# NAMDEB MINING LICENCE AREAS

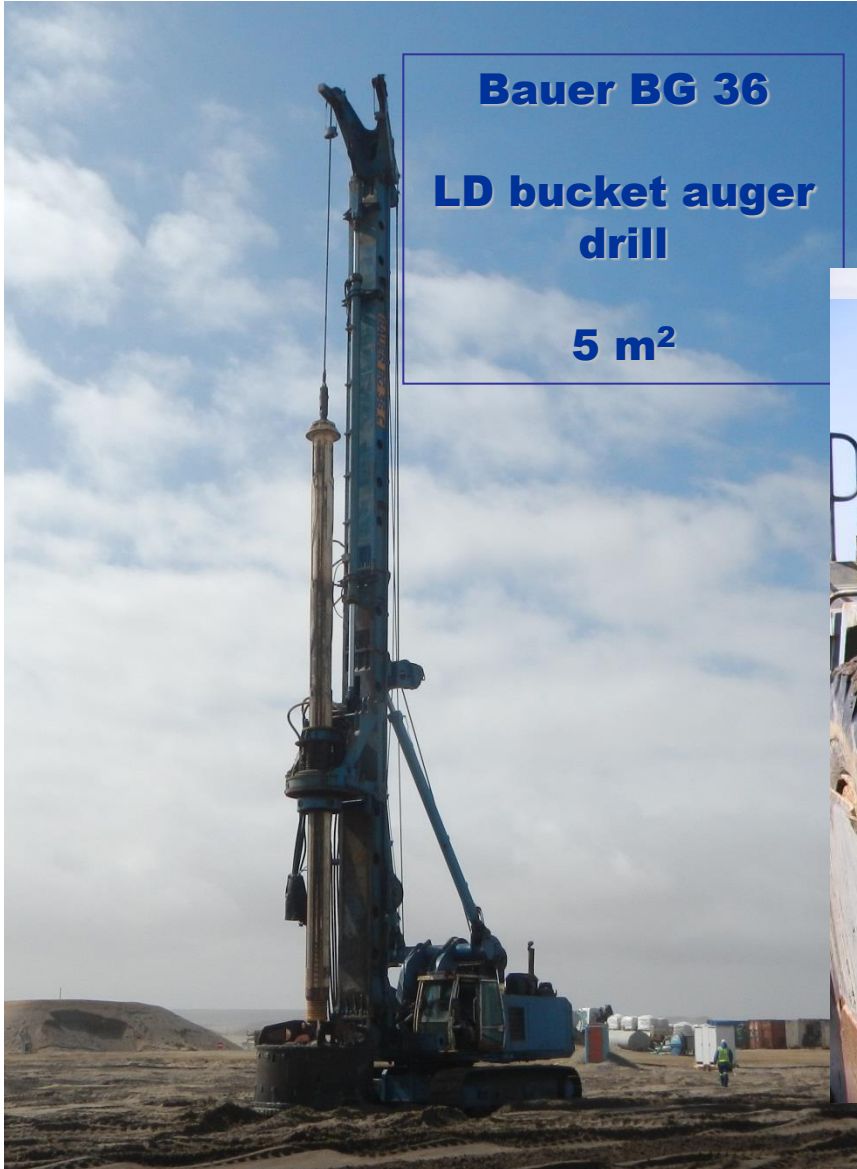




**Bauer BG 36**

**LD bucket auger  
drill**

**5 m<sup>2</sup>**



# Exploration of Surf Zone



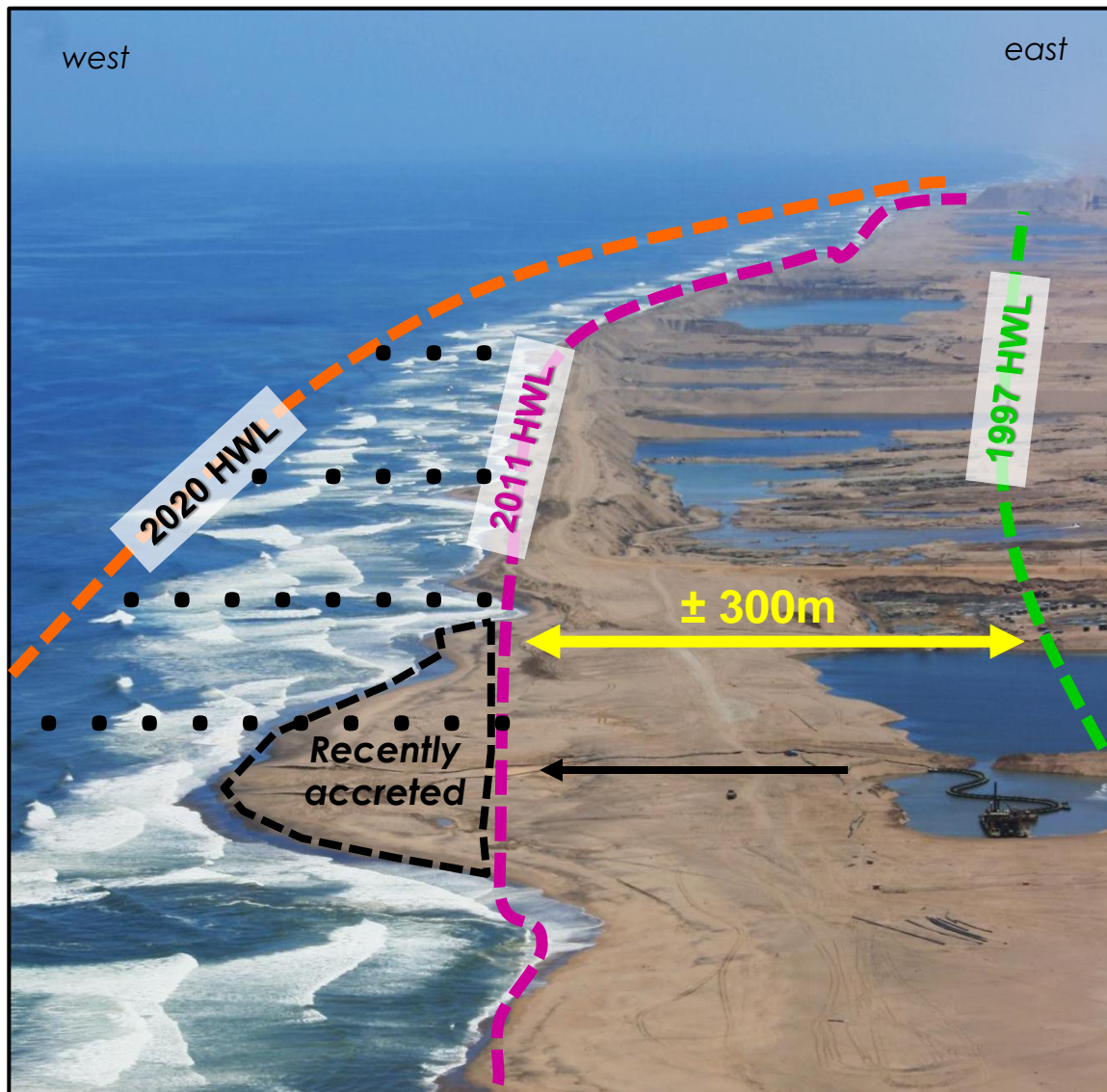
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# Exploration of Surf Zone



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# Exploration of Surf Zone



Aerial ropeway transfer takes 3 min



Platform manned by 5 persons



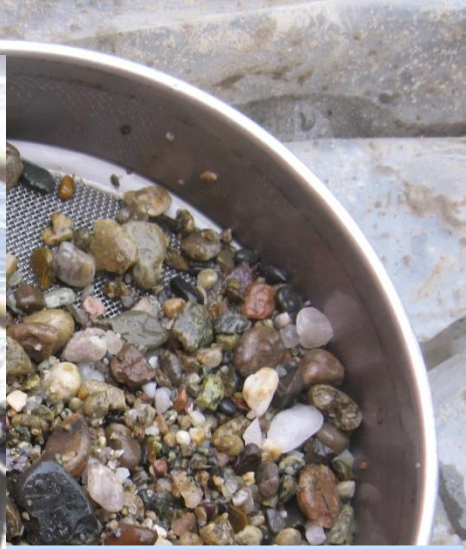
Drilling 25m hole takes max 2 hours



Cuttings collected in 1m intervals



BASAL GRA





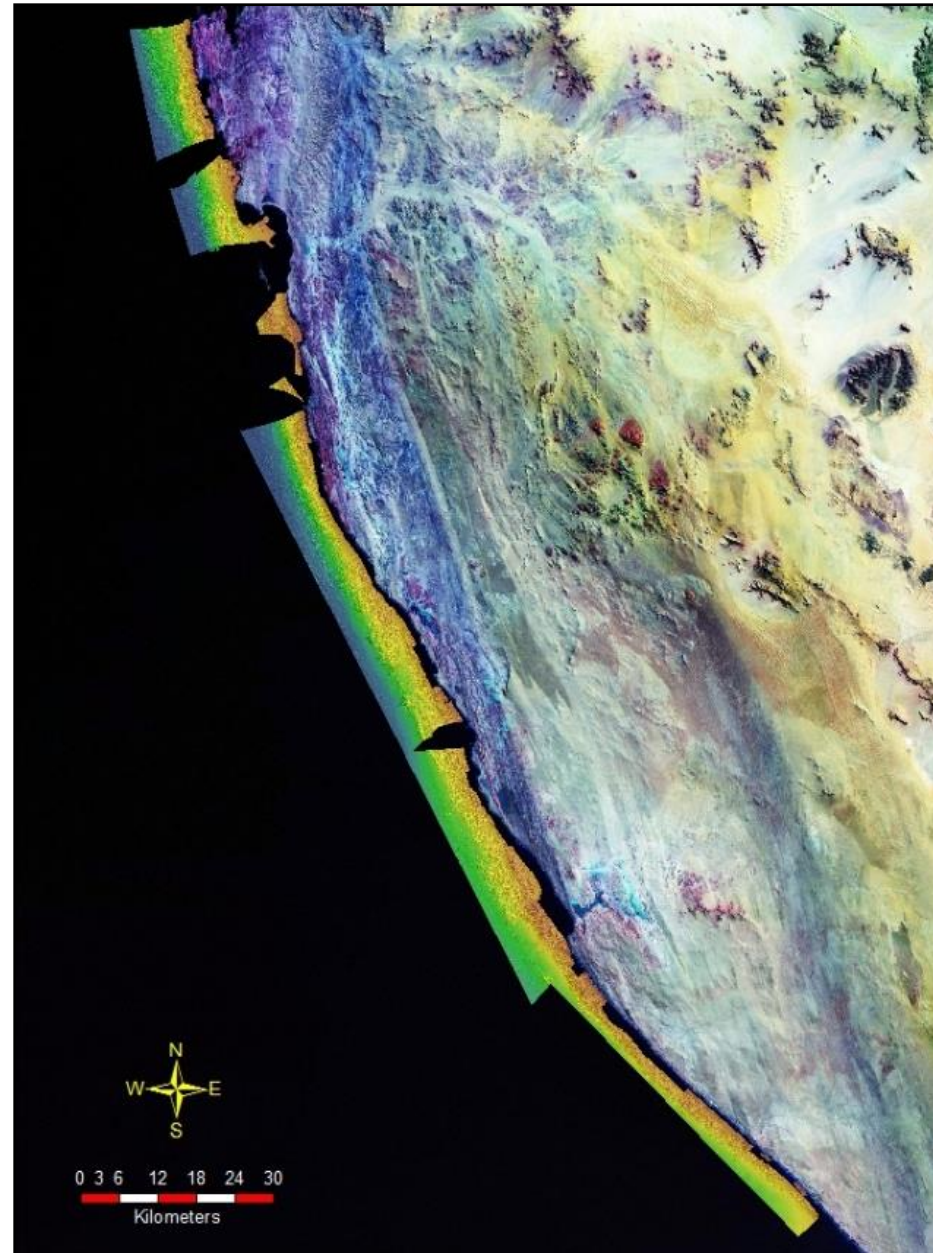
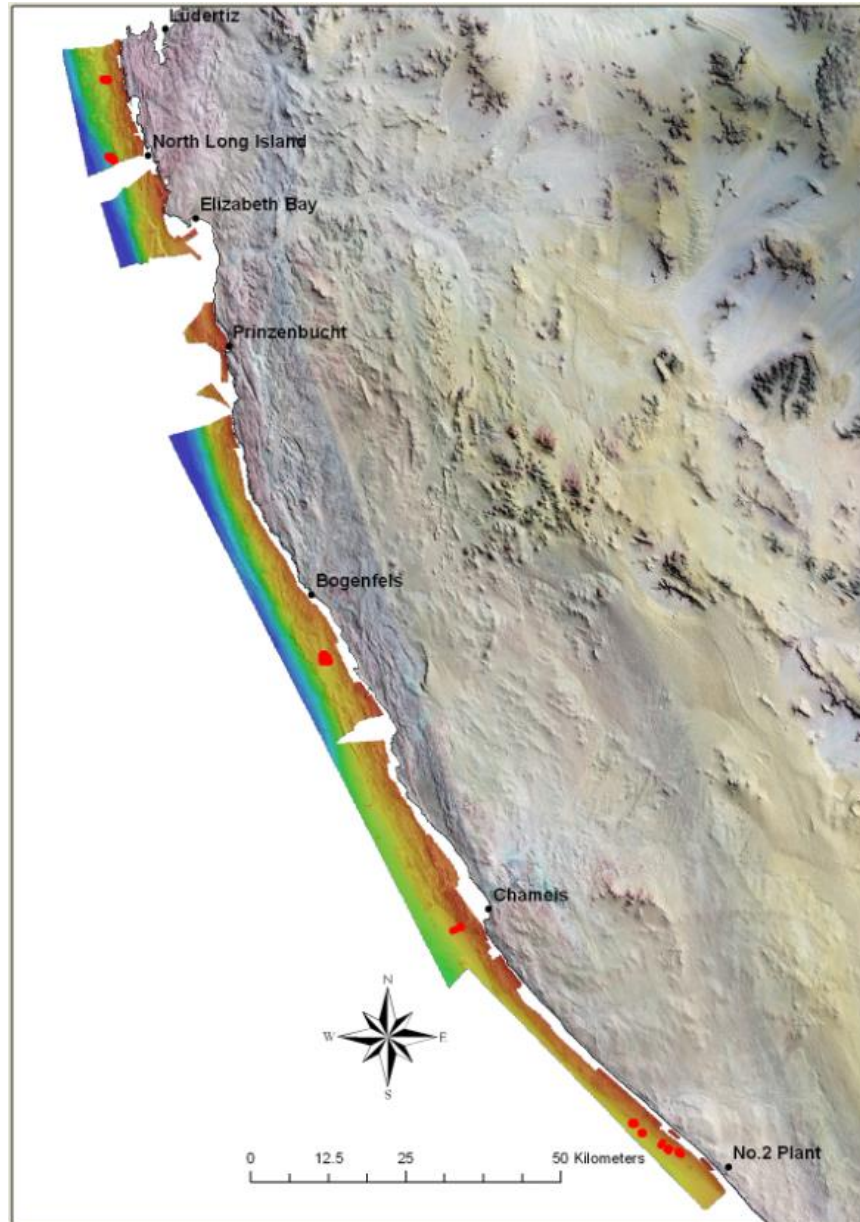
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# Midwater Sampling



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# Midwater Sampling



# Environmental Overview



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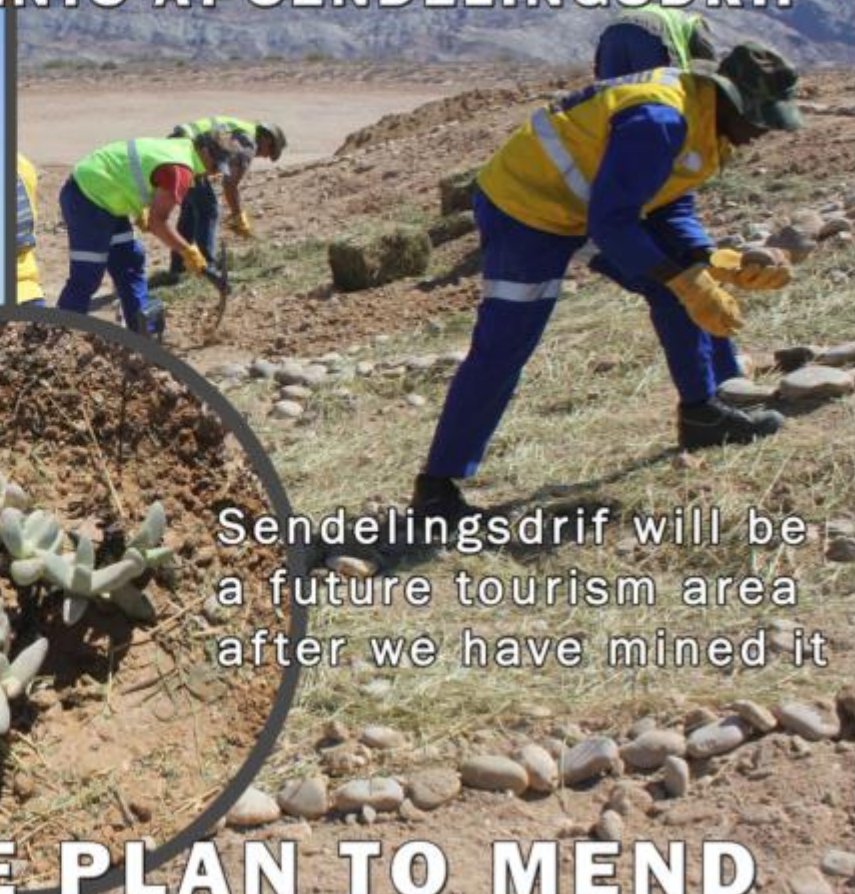
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## MAN & MACHINE

### RESTORATION EXPERIMENTS AT SENDELINGSDRIF



Field trials to figure out how to restore the area after mining



Sendelingsdrif will be a future tourism area after we have mined it

## AS WE MINE WE PLAN TO MEND

# Environmental Rehabilitation: Scrap Removal Project Before & After



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G64



G78



116 000  
tonnes of scrap  
metal  
removed since  
the inception  
of the project in  
June 2008. 29  
scrapyards  
internally  
signed off.





# Pocket Beaches Site 2 Before and After Mining



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**2006**



**2010**



**2014**



# Pocket Beaches 11 + 12 : During Mining





**Before**



**Clearing**



**Storing**



**Mining**



**Backfilling**



**Re-vegetating**



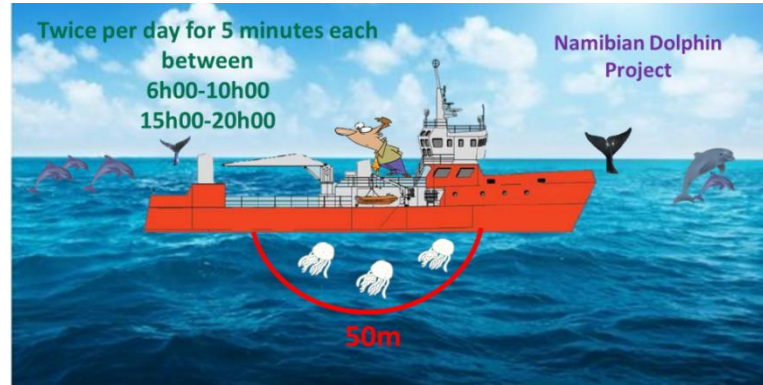
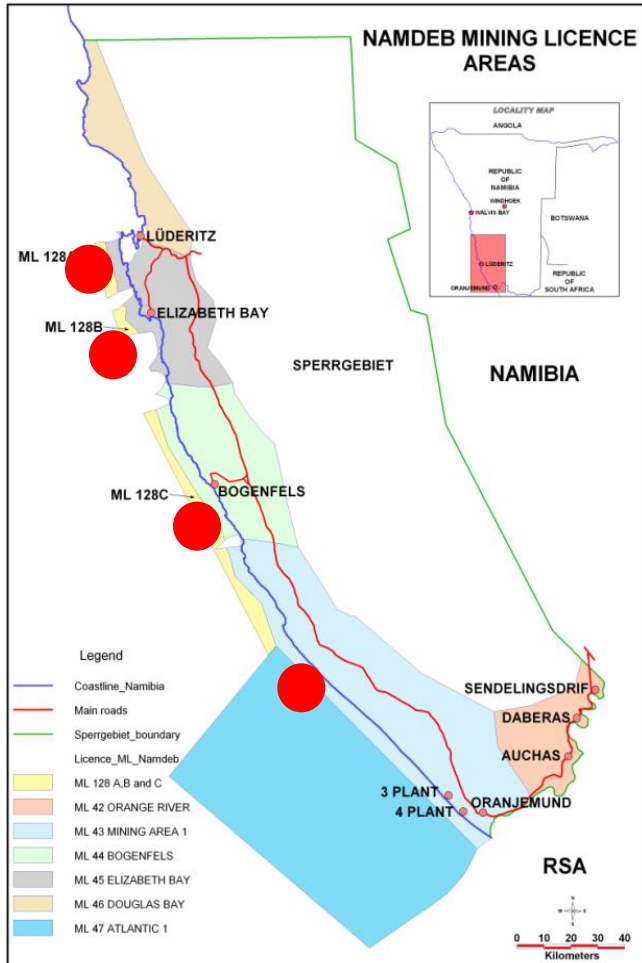
**After**



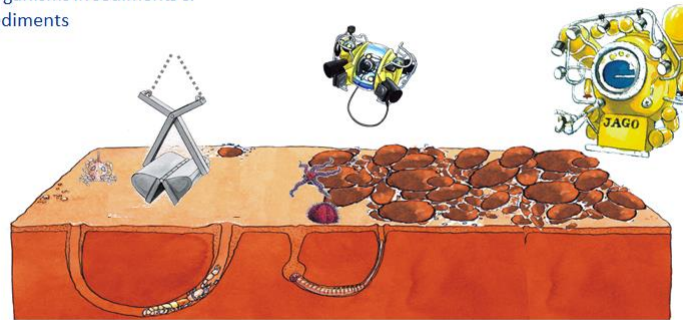
# Exploration : Midwater



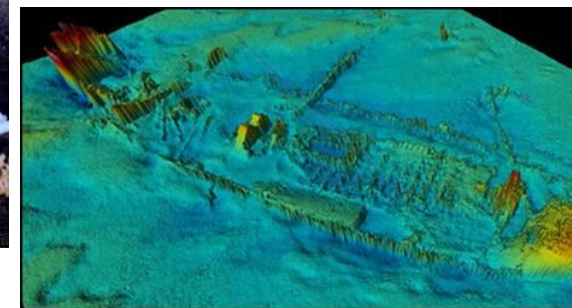
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Organisms in sediments & sediments



Visuals of the seabed & organisms on rocks



# Hard at work...





# VIDEO CLIP

# Questions?



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# THANK YOU!