

29°54.000'E

29°57.000'E

30°0.000'E

30°3.000'E

30°6.000'E

COLOUR	SENSITIVITY
RED	VERY HIGH
ORANGE/YELLOW	HIGH
GREEN	MODERATE
BLUE	LOW
GREY	INSIGNIFICANT/ZERO
WHITE/CLEAR	UNKNOWN

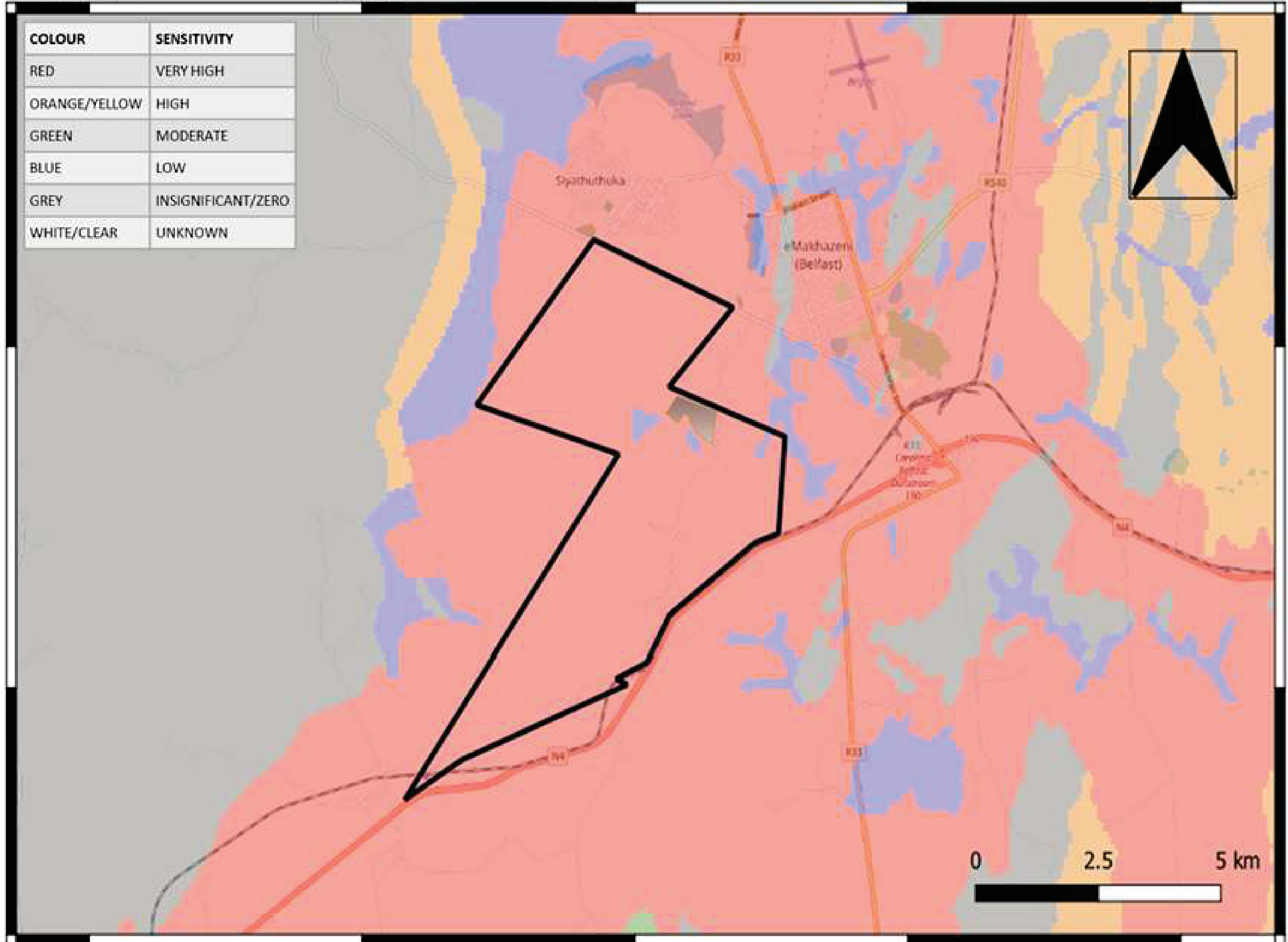


25°42.000'S

25°42.000'S

25°45.000'S

25°45.000'S



29°54.000'E

29°57.000'E

30°0.000'E

30°3.000'E

30°6.000'E



# Glisa EMP & IWUL Consolidation Project

## LEGEND

-  Towns
- Rivers and Streams**
-  Non-Perennial
-  Perennial
- Road Network**
-  National Route
-  Main Road
-  Secondary Road
-  Street
-  Railway Line
- Noise Contours**
-  35 dBA
-  40 dBA
-  45 dBA
-  50 dBA
-  Consolidated Mining Right

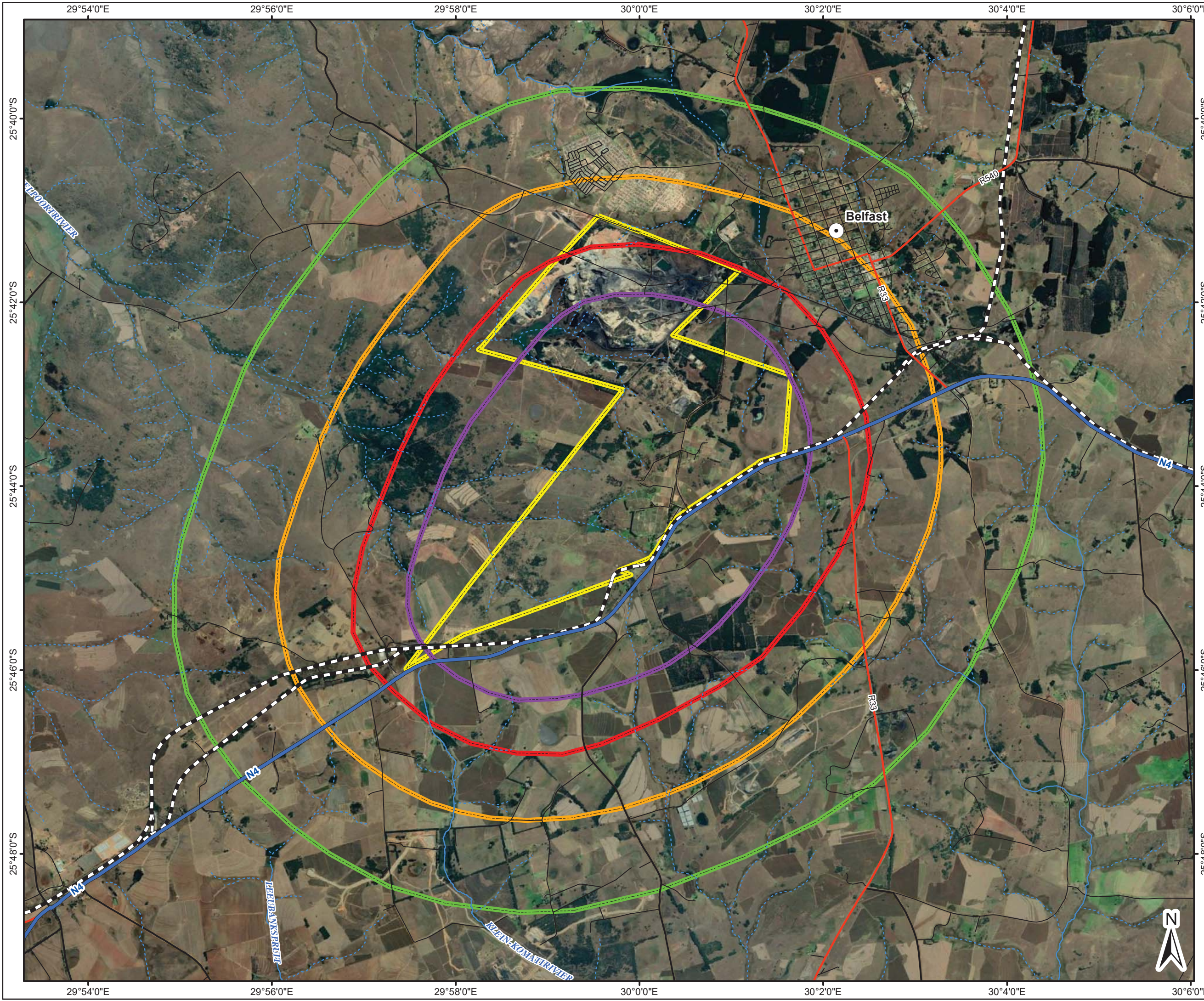
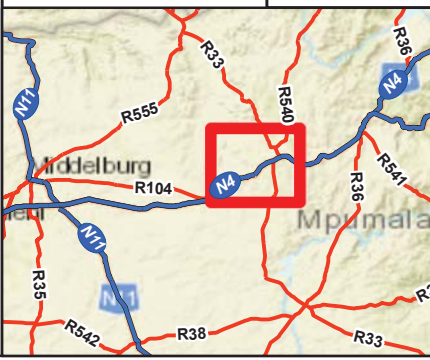
## NOISE CONTOURS



Reviewed: R. Janse Van Rensburg Environmental Compliance and Assessment Manager	Drawn by: A Brower GIS Consultant
--	---

Coordinate System: GCS WGS 1984  
 Datum: WGS 1984  
 Units: Degree

	Scale: 1:70 000
	CIGroup: 19-0001
	Map ID: 126-001-60
	Date: 20/04/2021







**Legend**

-  DMF
-  Site Boundary

**Image Locations**

**Image Locations**

-  Locations

**Project Details**

ProjectNr	ProjectName	ClientName
21-1381	Panreplaats	NBC Colliery (Pty) Ltd

Map: Visual

Date Exported: 2021/05/13 3:00 PM



ENVIRONMENTAL & ENGINEERING



1928 m  
Esri, NASA, NGA, USGS, Esri South Africa, Esri, HERE, Garmin, METI/NASA, USGS



# Legend

## Slope Angle

- 
- ≤1.72
- ≤3.43
- ≤5.71
- ≤8.53
- ≤11.3
- ≤14.04
- ≤16.7
- ≤21.8
- ≤30.96
- ≤45
- ≤90



### Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual  
Date Exported: 2021/05/05 4:07 PM



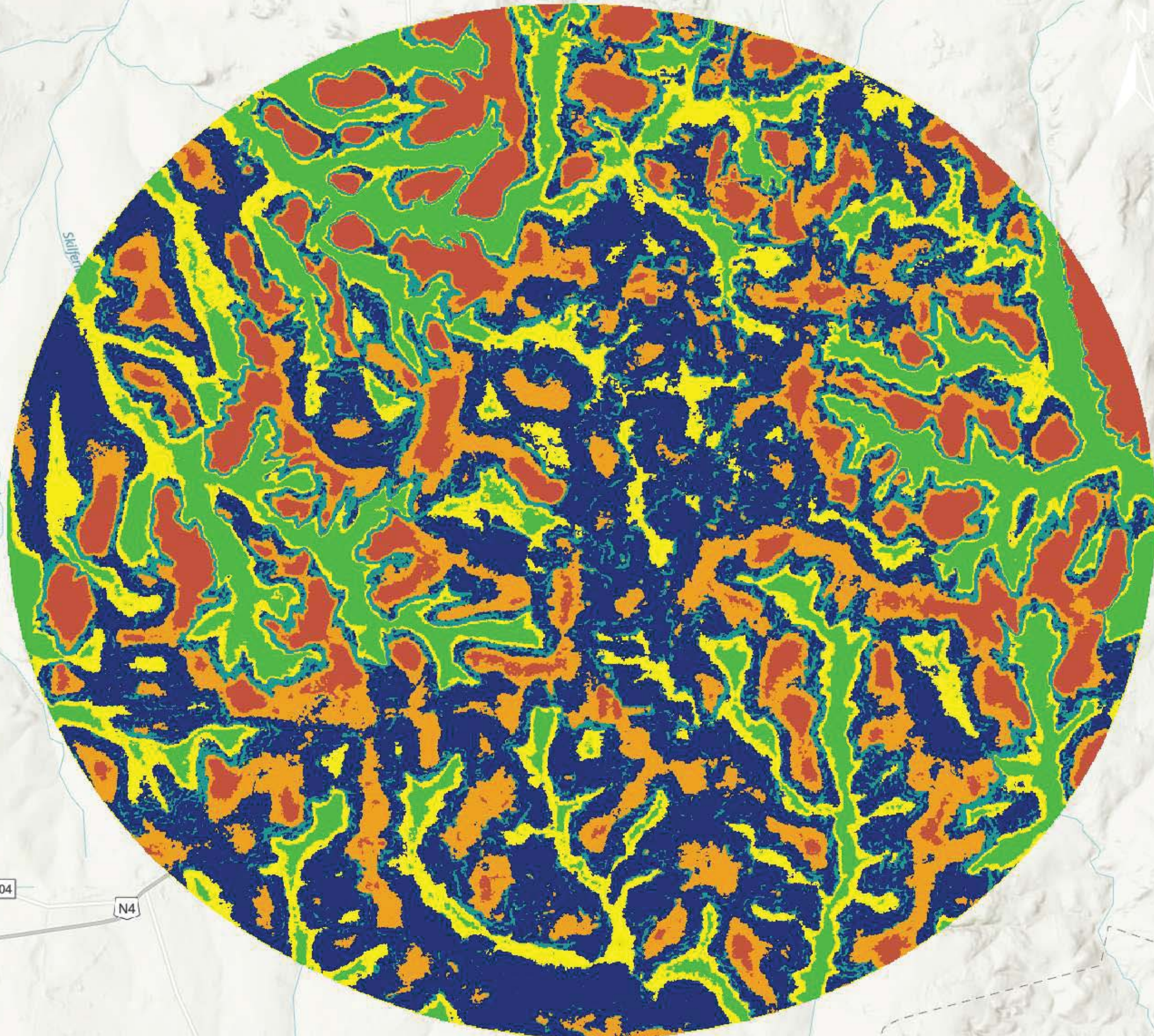


# Legend

## Slope Position

### Class

-  Ridge
-  Upper Slope
-  Mid Slope
-  Flat
-  Lower Slope
-  Valleys, Cliff Base



## Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual

Date Exported: 2021/05/05 4:09 PM



ENVIRONMENTAL & ENGINEERING



Esri, NASA, NGA, USGS, Esri South Africa, Esri, HERE, Garmin, METI/NASA, USGS

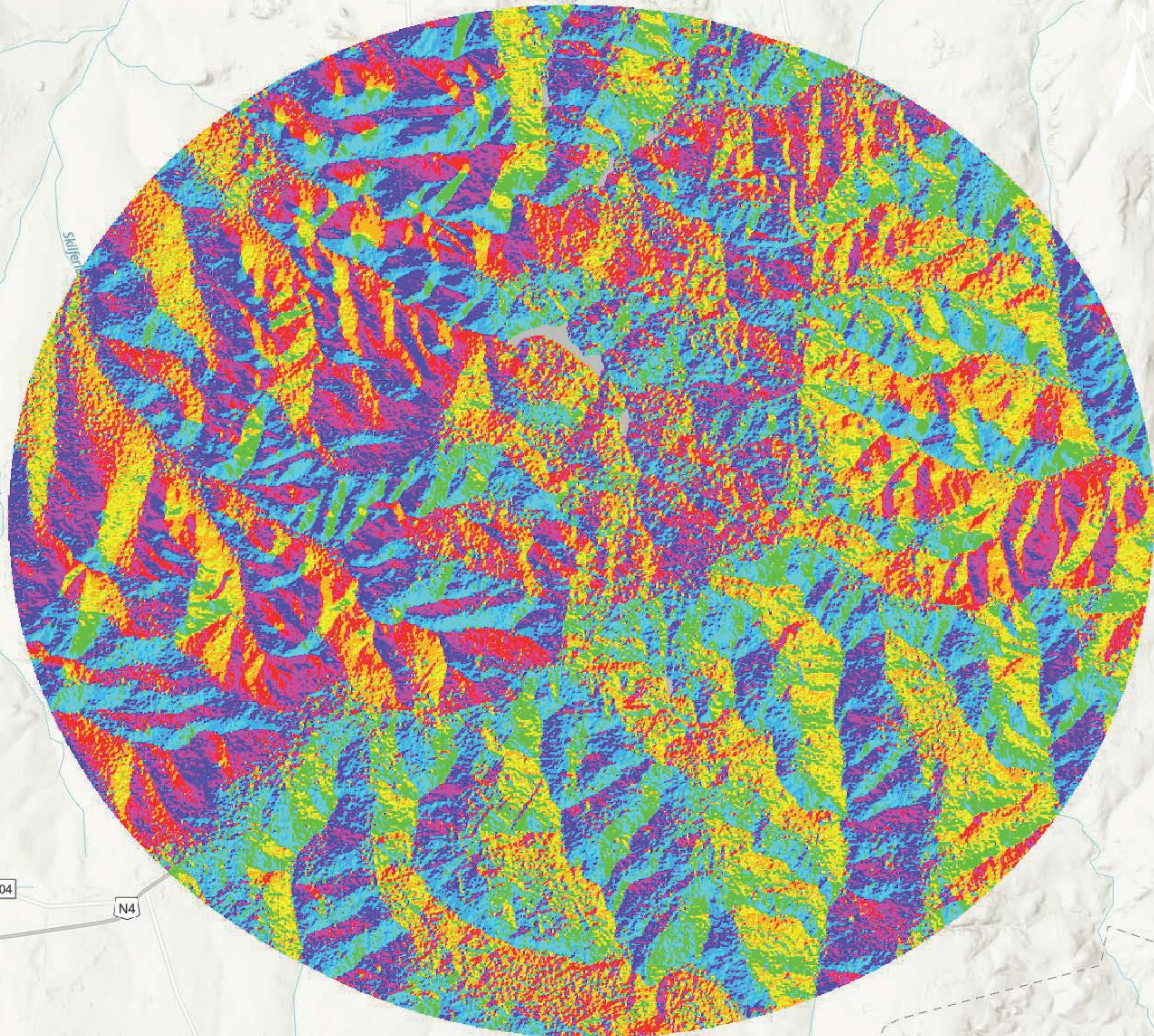


# Legend

## Slope Aspect

### Value

- Flat (-1)
- North (0 - 22.5)
- Northeast (22.5 - 67.5)
- East (67.5 - 112.5)
- Southeast (112.5 - 157.5)
- South (157.5 - 202.5)
- Southwest (202.5 - 247.5)
- West (247.5 - 292.5)
- Northwest (292.5 - 337.5)
- North (337.5 - 360)



## Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual

Date Exported: 2021/05/05 4:07 PM



ENVIRONMENTAL & ENGINEERING



Esri, NASA, NGA, USGS, Esri South Africa, Esri, HERE, Garmin, METI/NASA, USGS

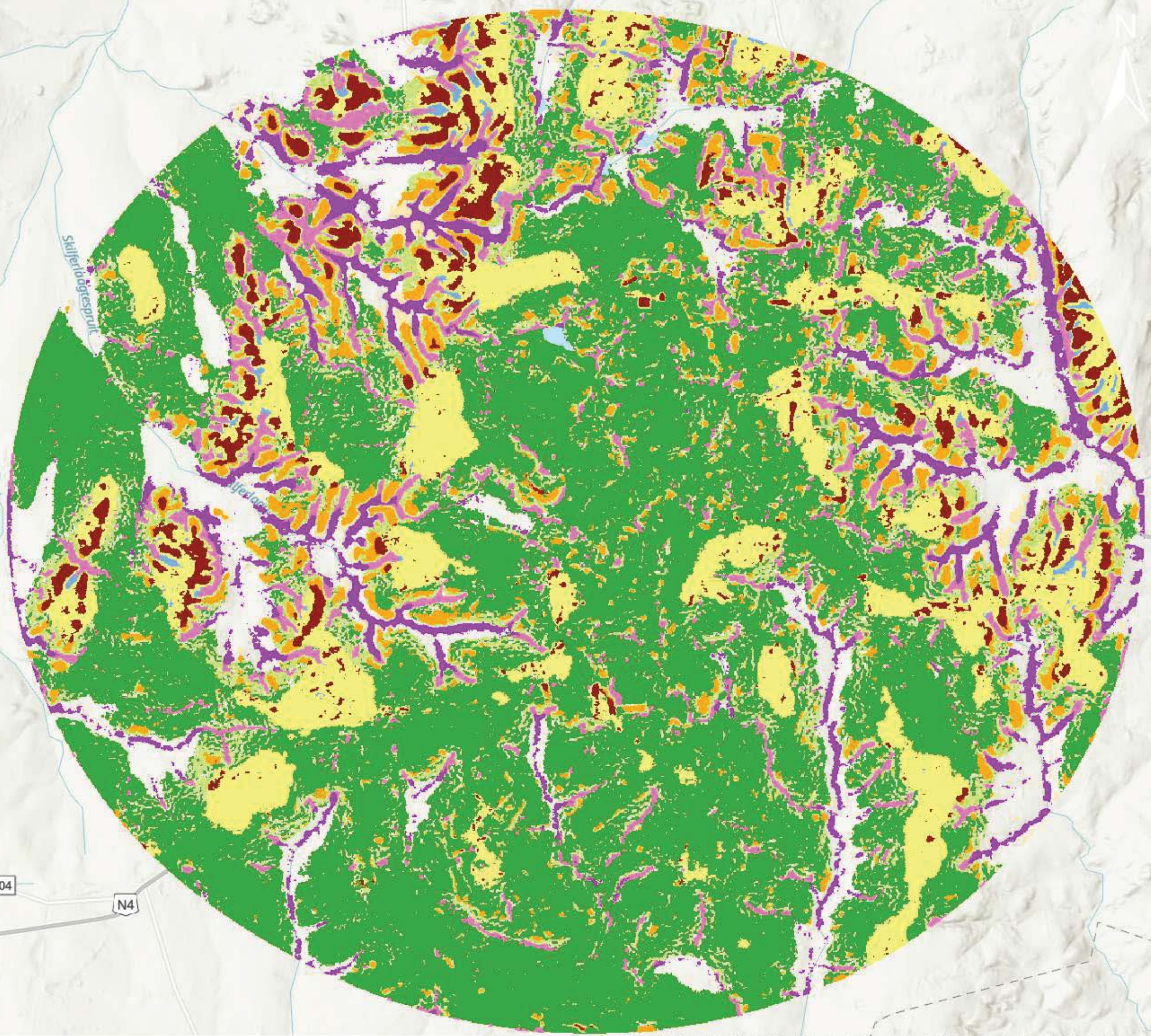


# Legend

## Landforms

### Type

-  Canyons, Deeply Incised Streams
-  Midslope Drainages, Shallow Valleys
-  Upland Drainages, Shallow Valleys
-  Plains
-  Open Slopes
-  Upper Slopes, Mesas
-  Local Ridges / Hilles in Valleys
-  Midslope Ridges, Small Hills in Plains
-  Mountain Tops, High Ridges



## Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

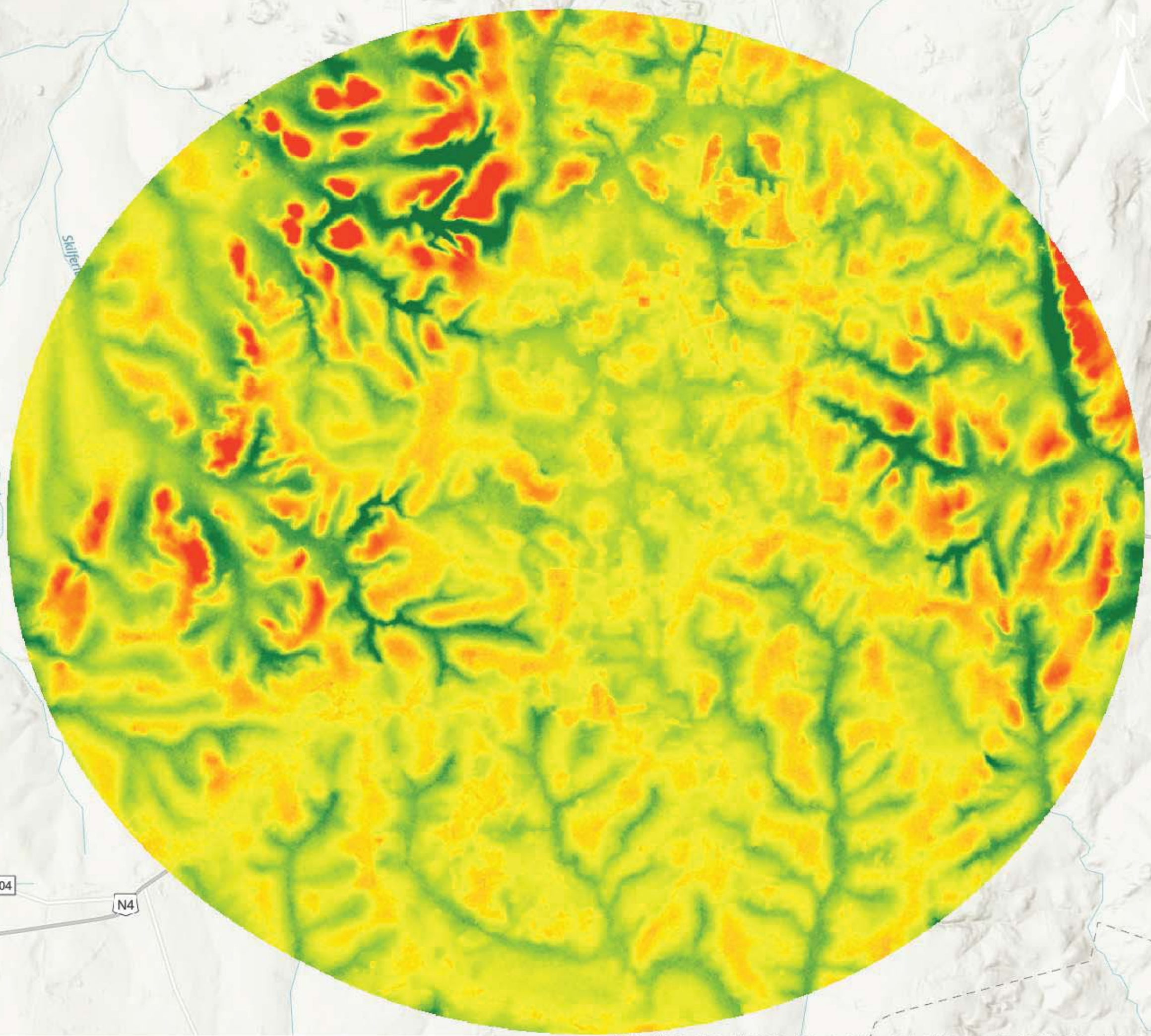
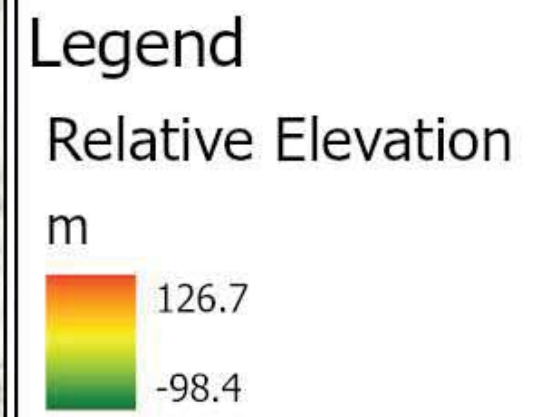
Map: Visual

Date Exported: 2021/05/05 4:08 PM



Esri, NASA, NGA, USGS, Esri South Africa, Esri, HERE, Garmin, METI/NASA, USGS





### Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual  
Date Exported: 2021/05/05 4:08 PM



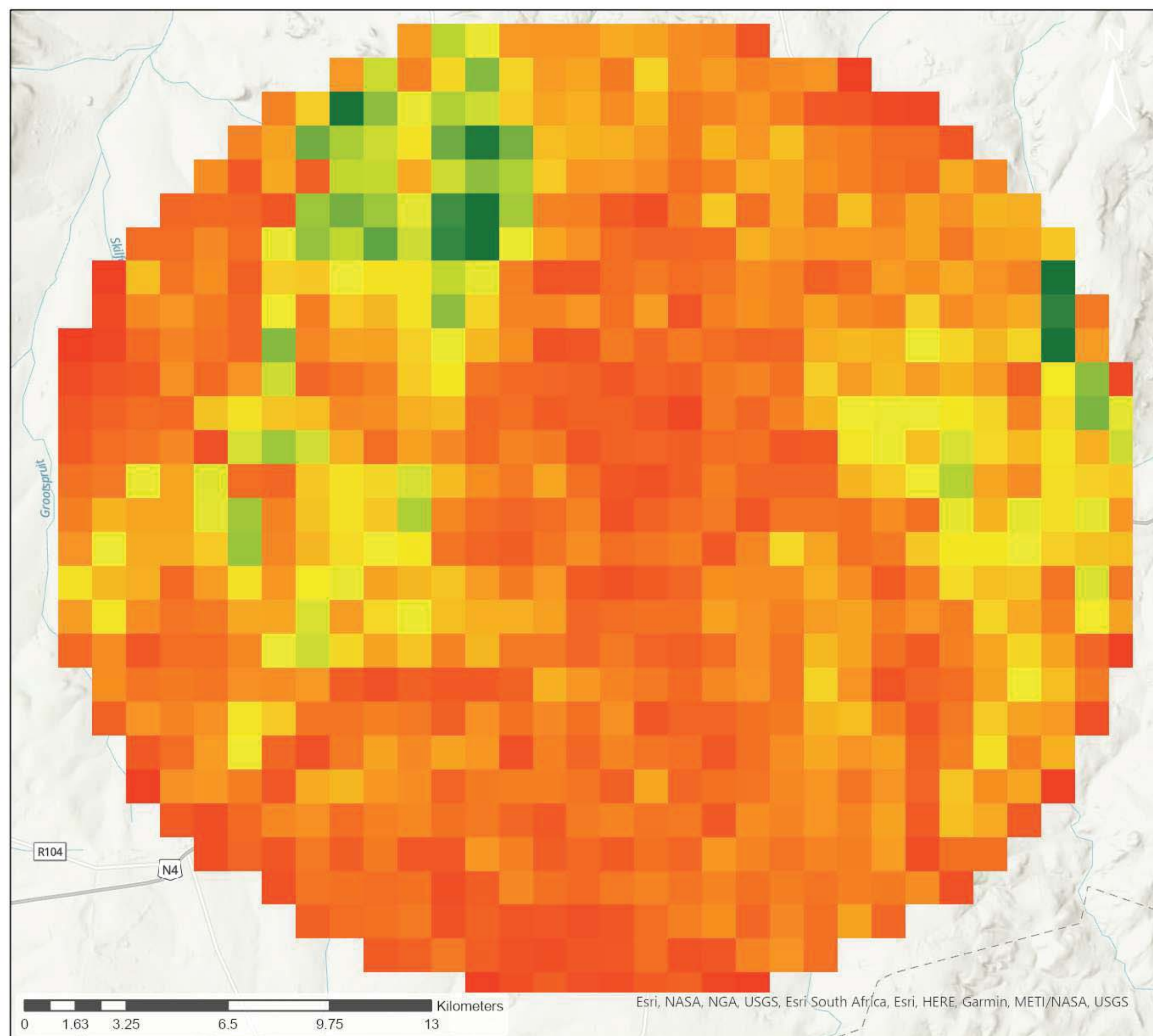
Esri, NASA, NGA, USGS, Esri South Africa, Esri, HERE, Garmin, METI/NASA, USGS



# Legend

## Ruggedness

### Value



### Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual

Date Exported: 2021/05/05 4:06 PM



ENVIRONMENTAL & ENGINEERING



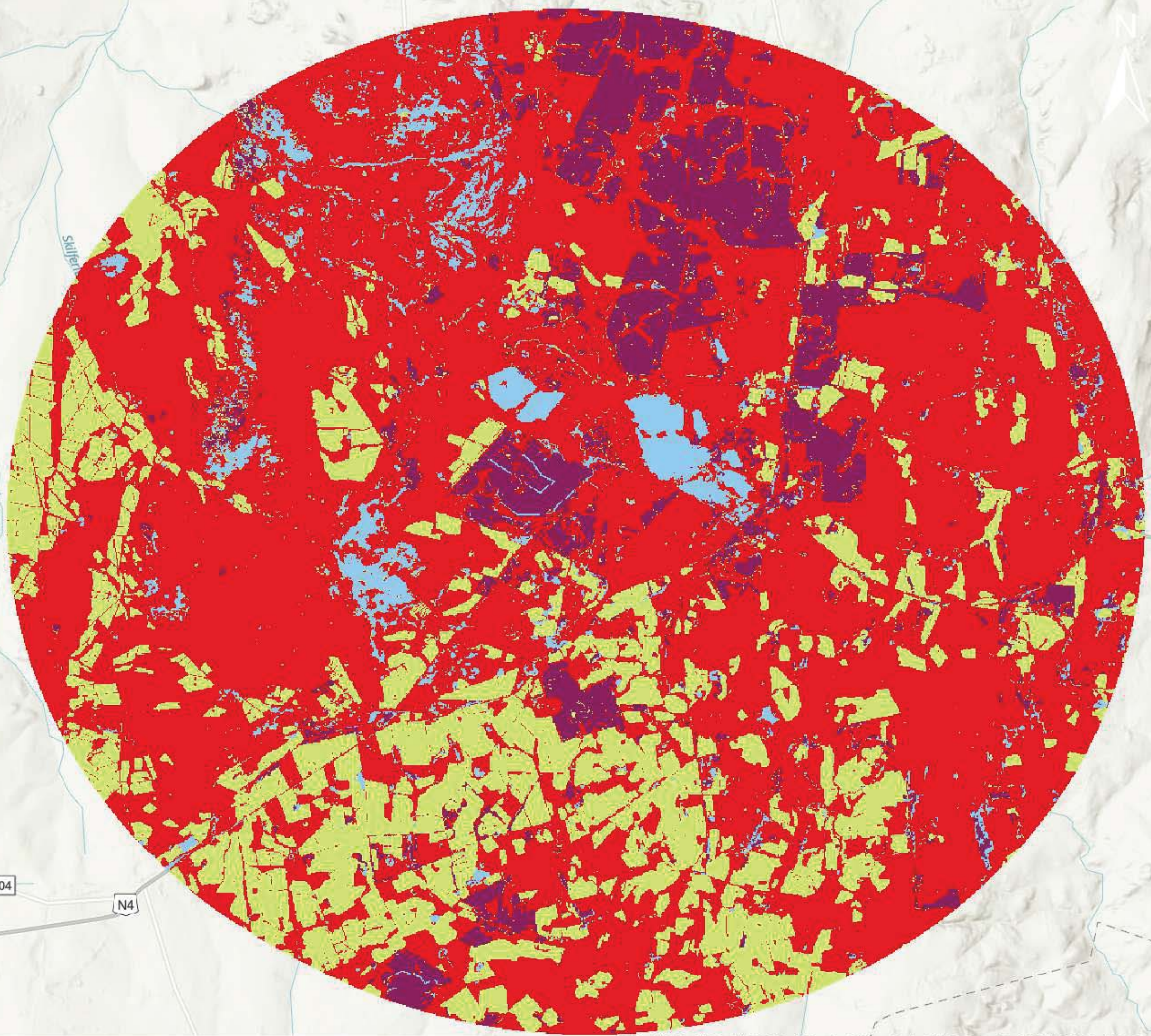
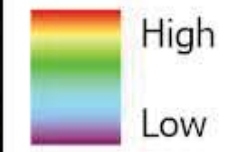
Esri, NASA, NGA, USGS, Esri South Africa, Esri, HERE, Garmin, METI/NASA, USGS



# Legend

## Landcover VAC

### Value



## Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual

Date Exported: 2021/05/05 4:05 PM



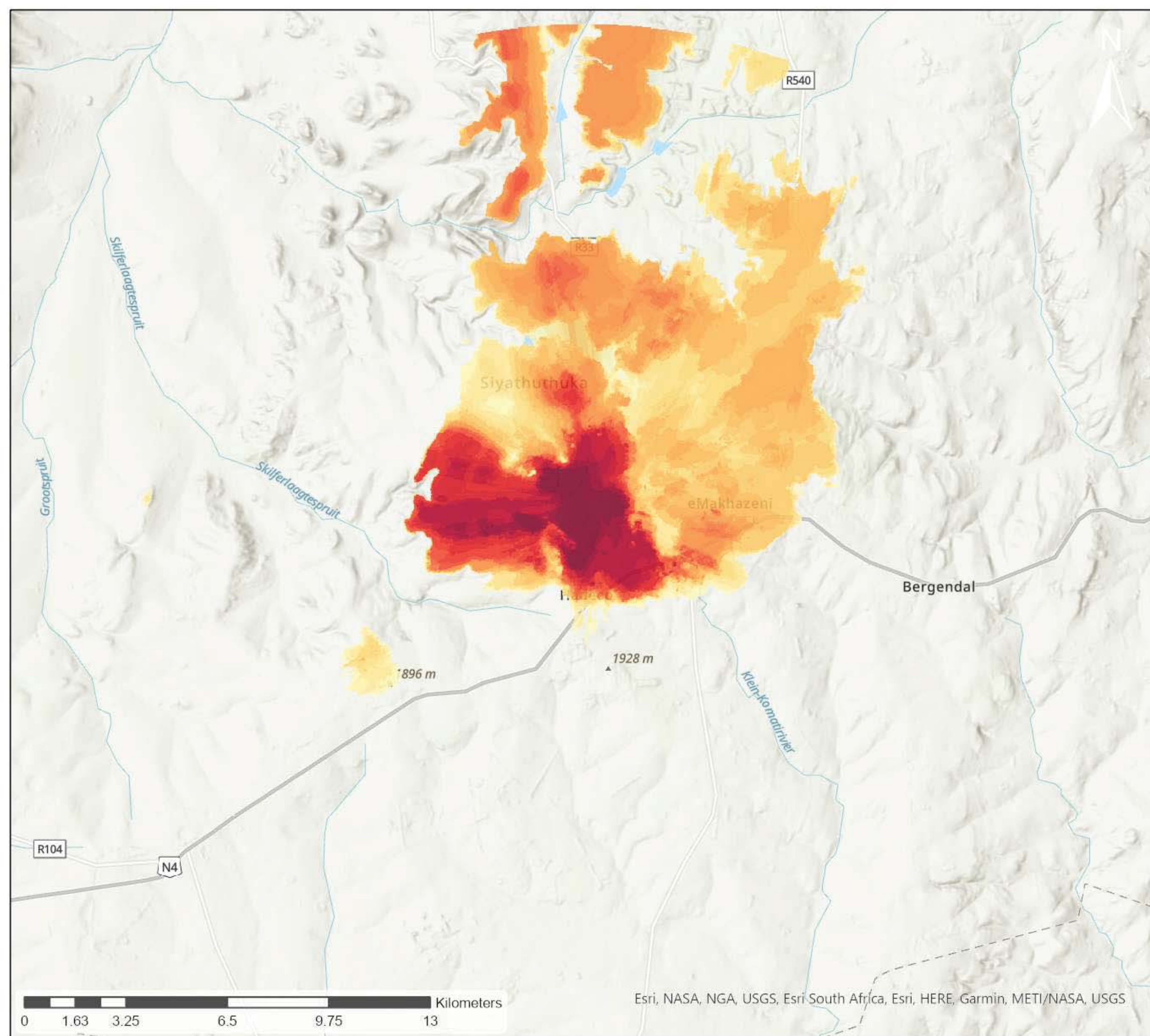
Esri, NASA, NGA, USGS, Esri South Africa, Esri, HERE, Garmin, METI/NASA, USGS



# Legend

## Visibility Count

Value



### Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual

Date Exported: 2021/05/05 4:11 PM

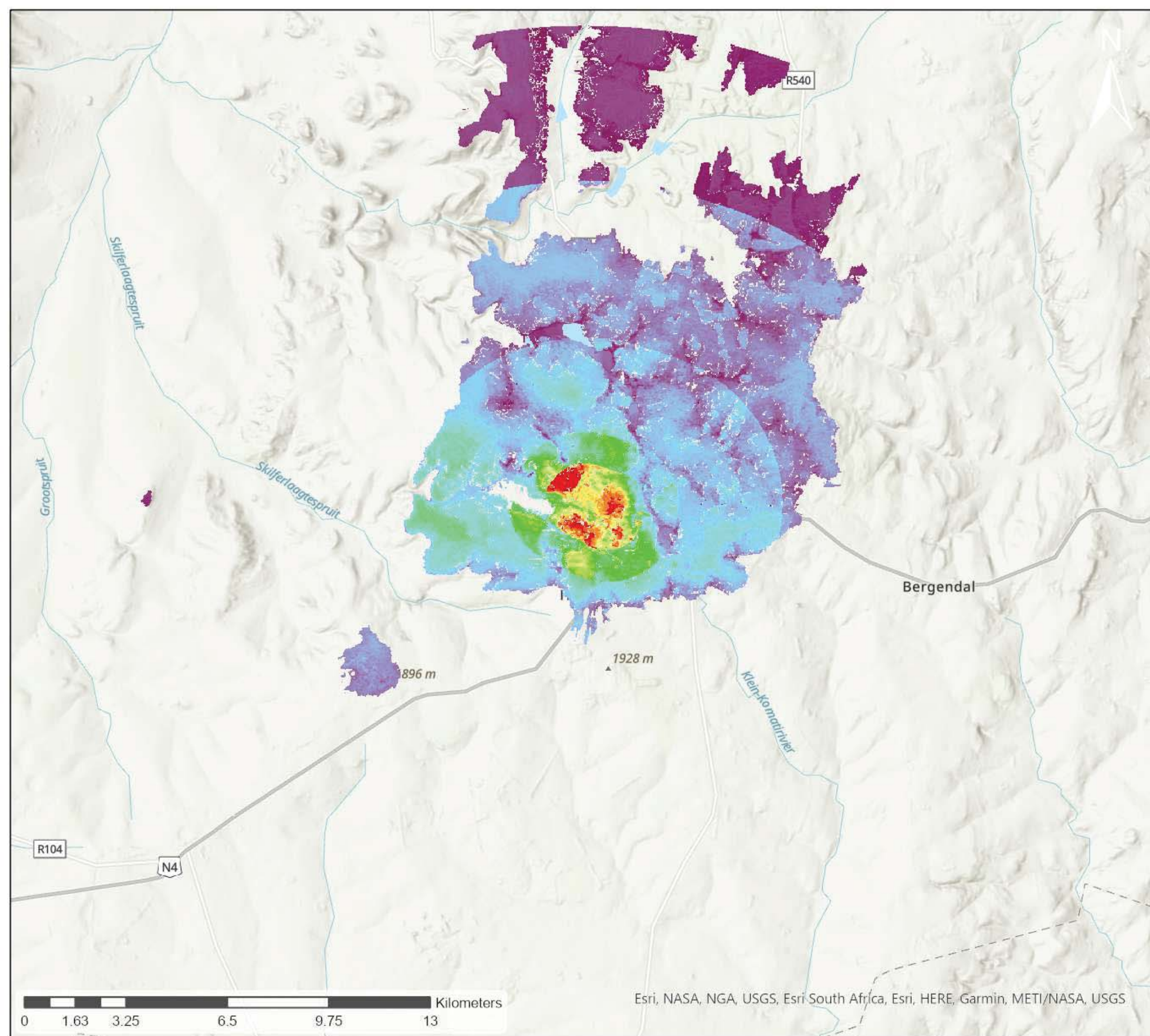
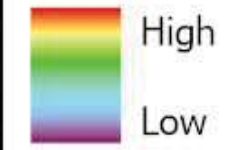




# Legend

## Visibility-Distance Rank

Value



### Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual

Date Exported: 2021/05/05 4:12 PM



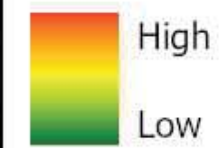
ENVIRONMENTAL & ENGINEERING



# Legend

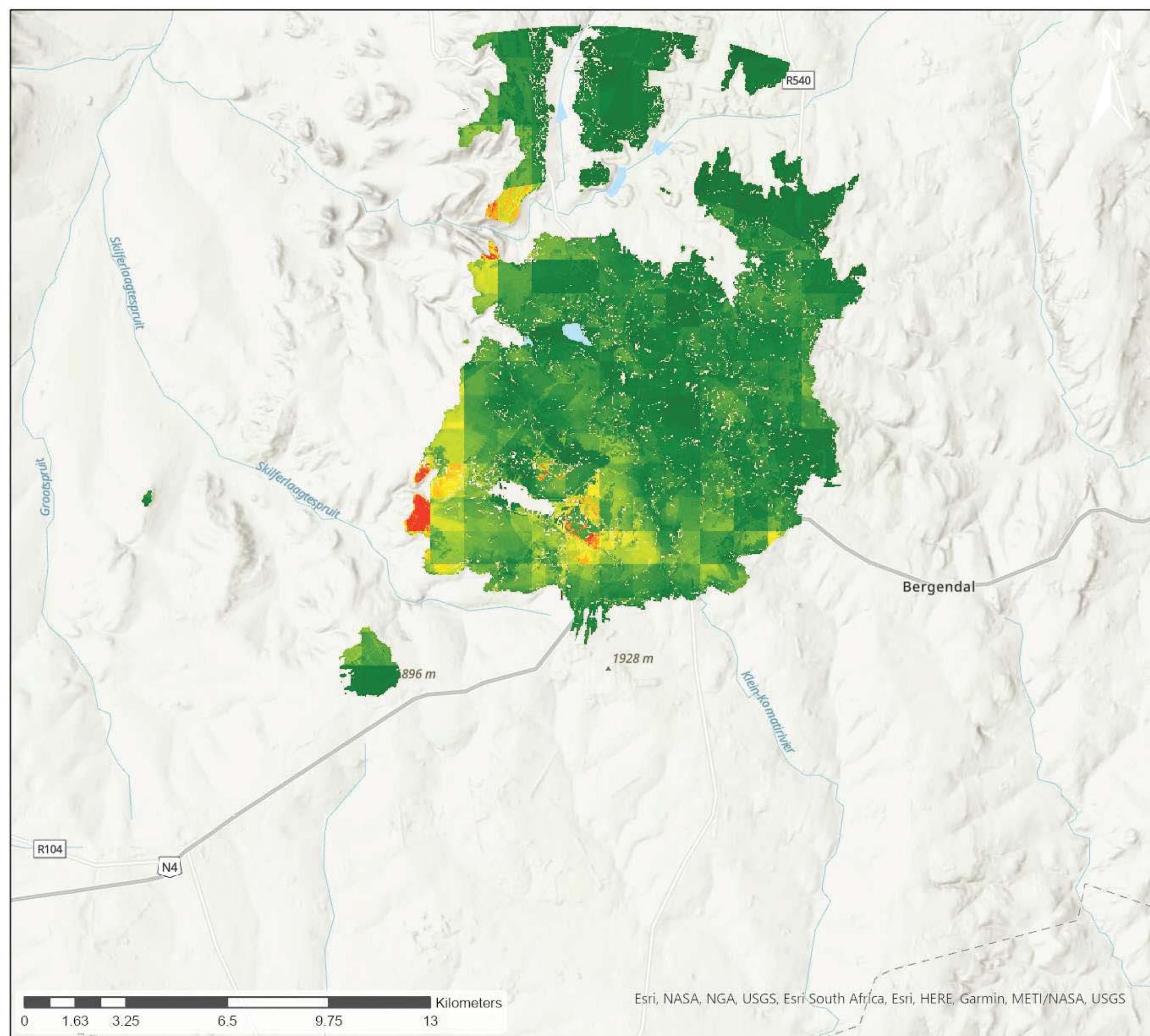
Visual Exposure Ranked

Rank



High

Low



## Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

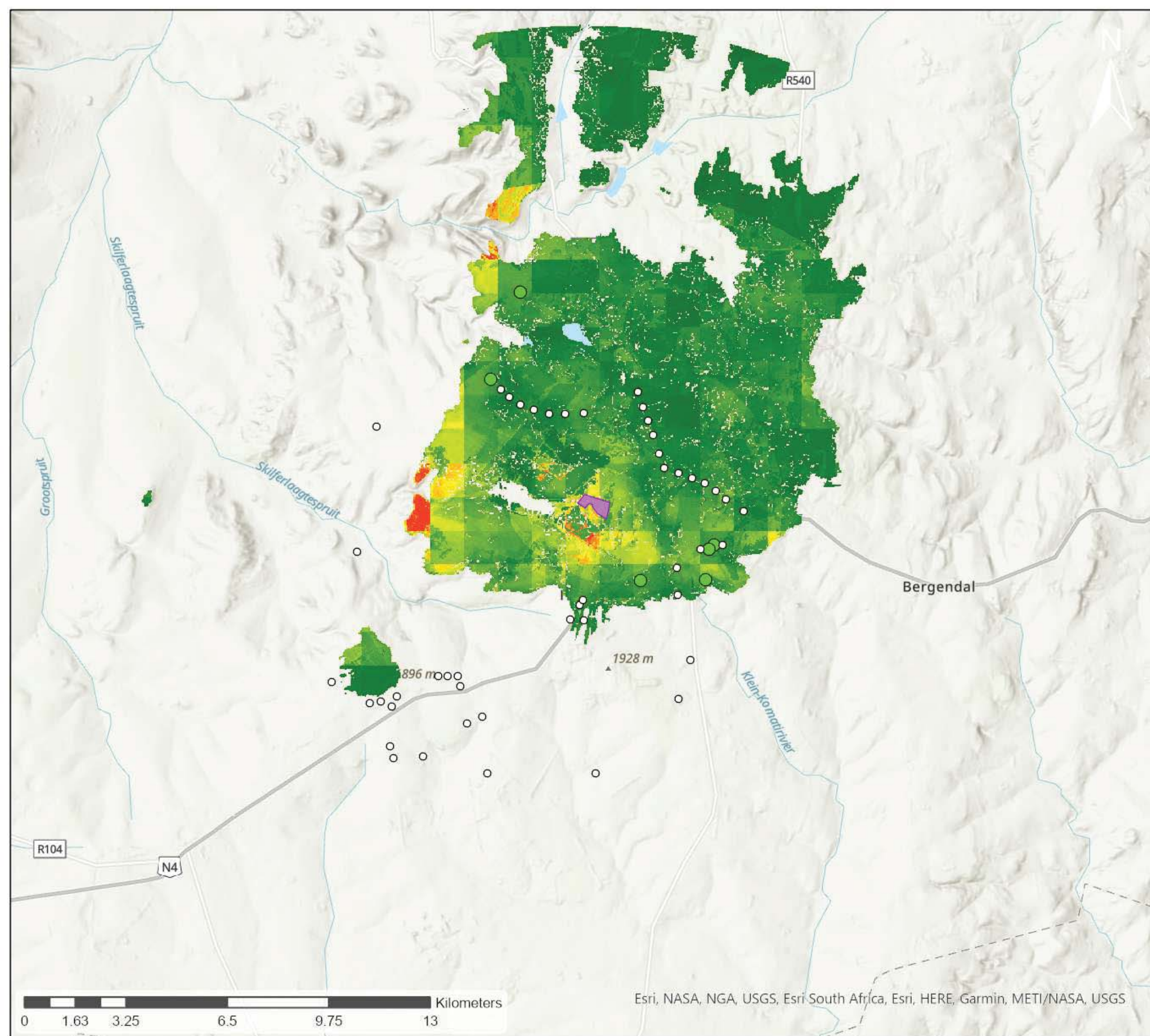
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ENVIRONMENTAL & ENGINEERING










### Legend


 DMF

### Value

-  ≤1
-  ≤2
-  ≤3
-  ≤4
-  ≤5

### Visual Exposure Ranked

### Rank

 High  
Low

### Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

Map: Visual

Date Exported: 2021/05/05 4:16 PM





# Glisa EMP & IWUL Consolidation Project

## LEGEND

- Towns
- Rivers and Streams**
  - Non-Perennial
  - Perennial
- Road Network**
  - National Route
  - Main Road
  - Railway Line
  - Pipeline
  - Powerline
  - Gravel Roads
  - Existing Layout
  - Consolidated Mining Right
  - Parent Farms
  - Farm Portions

- ### Layout
- Proposed Dewatering Pipeline
  - Culvert
  - Clean water channel
  - Dirty water Channel
  - Current Open Cast Area
  - PCD and Silt Trap
  - New Infrastructure
  - Emulsion Silo
  - Mine Dam; Seasonal Dam
  - Pan
  - Wetlands
  - Backfill
  - Discard Management Facility

## PREFERRED DEVELOPMENT FOOTPRINT

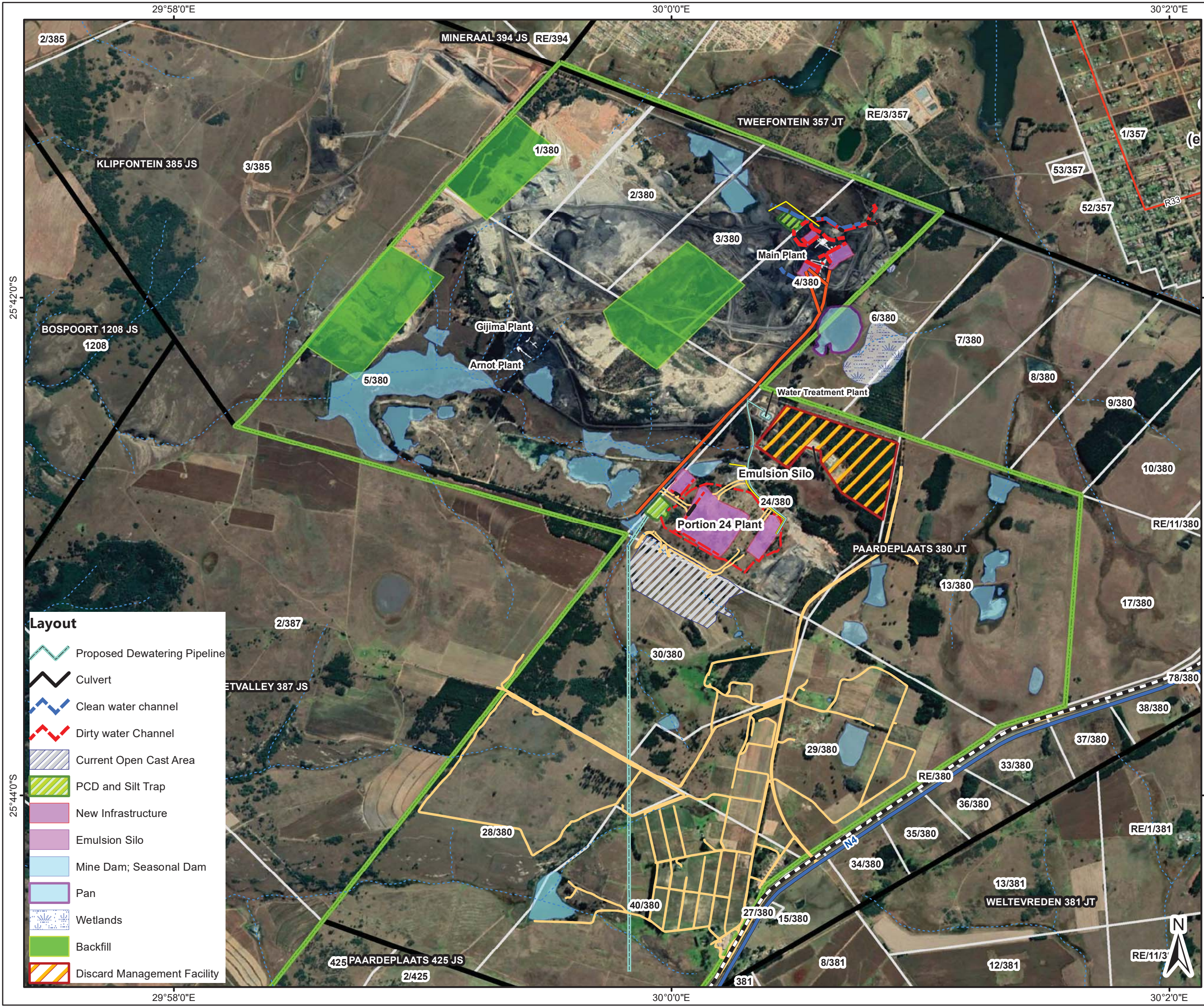
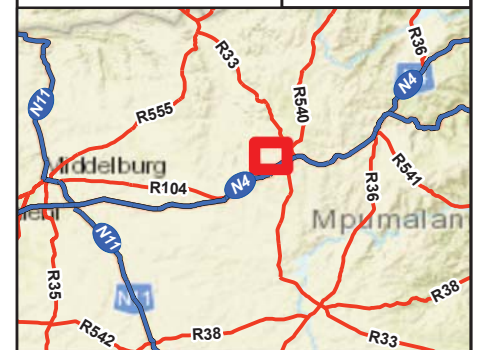


Reviewed: R. Janse Van Rensburg  
Environmental Compliance and Assessment Manager

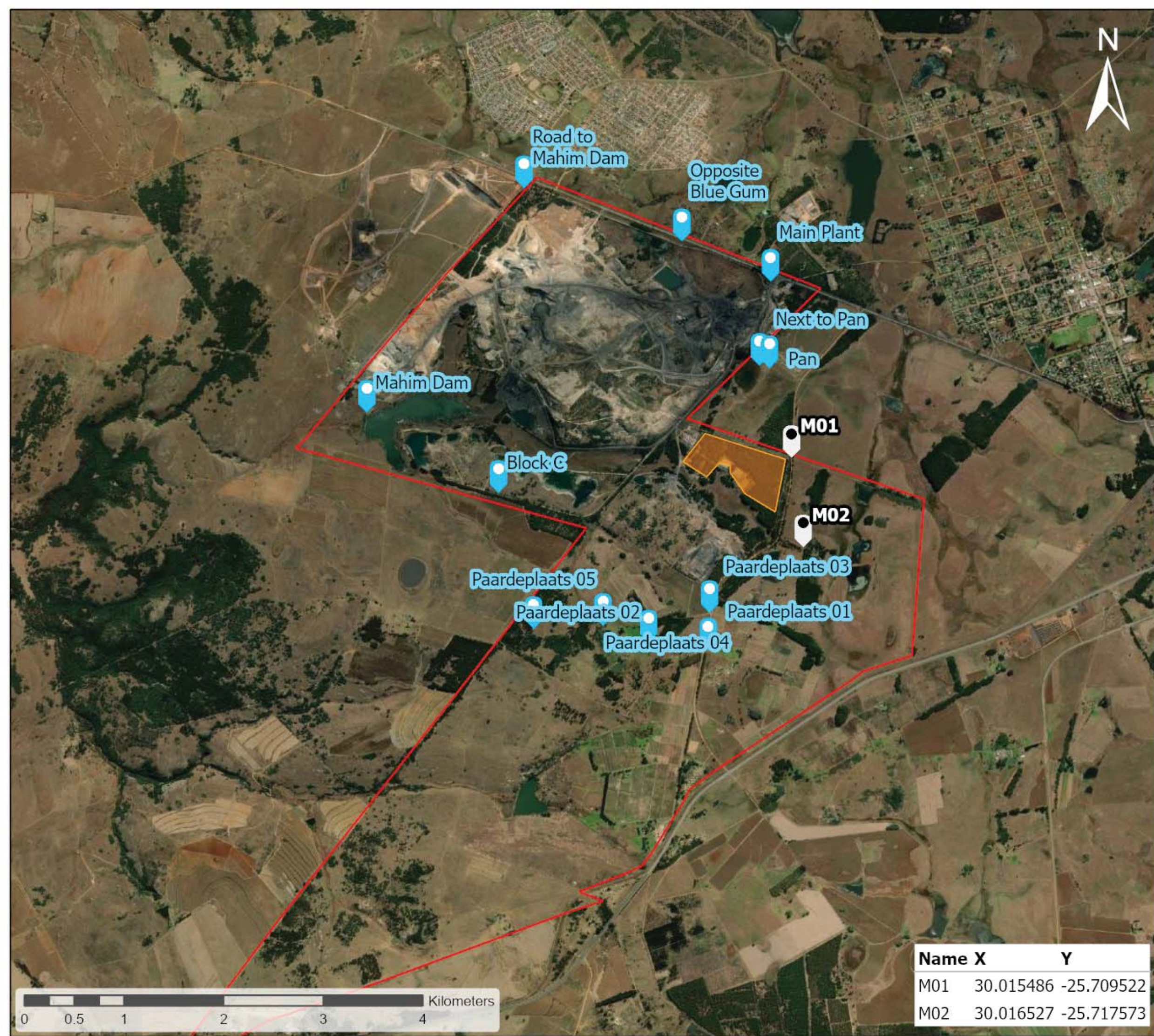
Drawn by: A Brower  
GIS Consultant

Coordinate System: GCS WGS 1984  
Datum: WGS 1984  
Units: Degree


Scale: 1:26 000  
CIGroup: 19-0001  
Map ID: 126-001-67-v2  
Date: 28/06/2021







### Legend

-  Site Boundary
-  Proposed Monitor Locations
-  Current Dust Monitor Locations
-  DMF



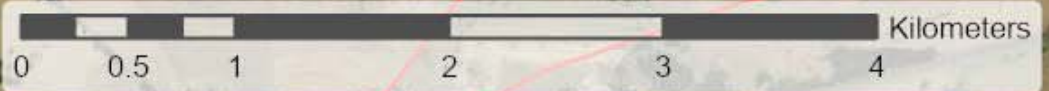
### Project Details

ProjectNr	ProjectName	ClientName
21-1381	Paardeplaats	NBC Colliery (Pty) Ltd

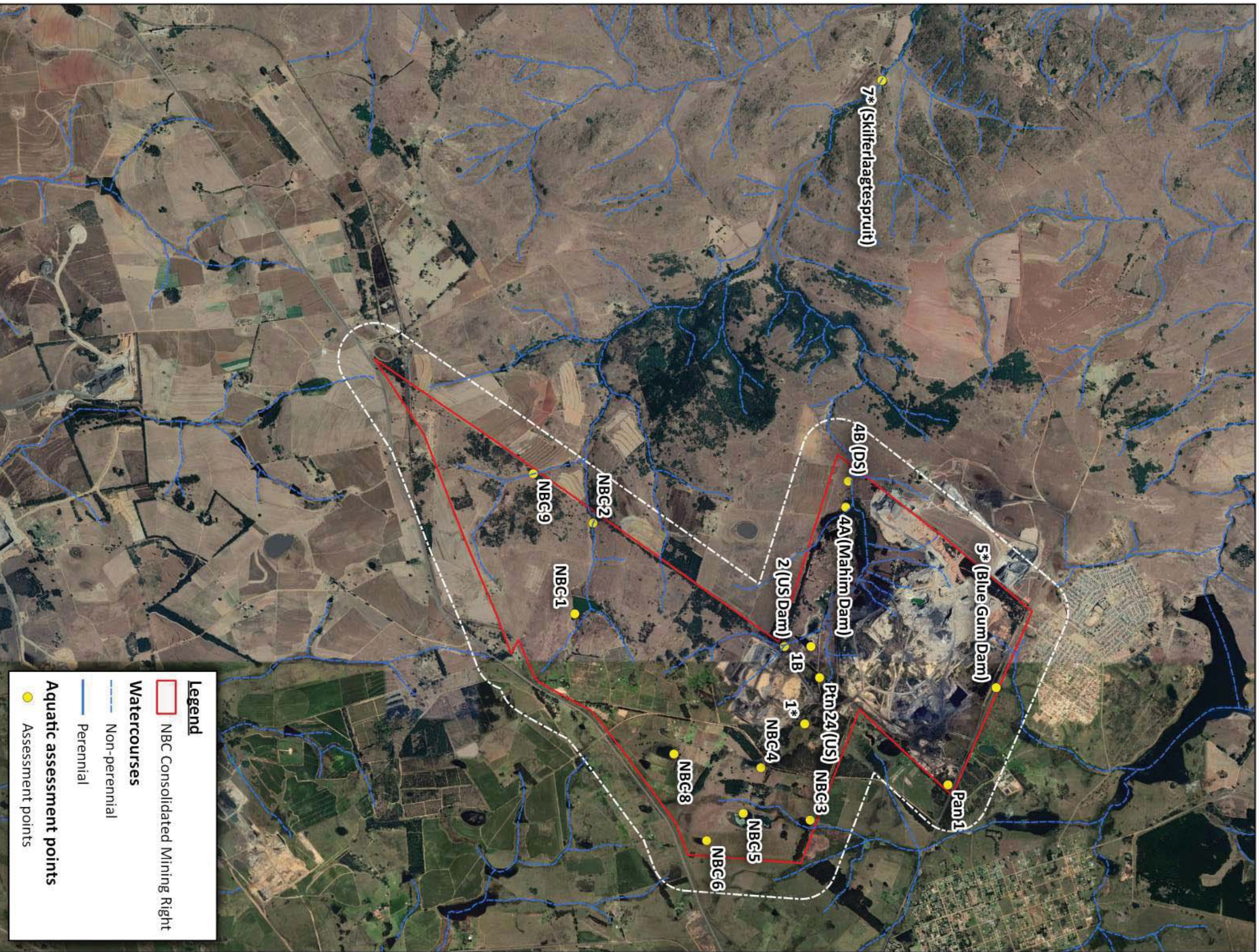
Map: Proposed Monitor Locations  
 Date Exported: 2021/05/11 2:37 PM



Name	X	Y
M01	30.015486	-25.709522
M02	30.016527	-25.717573







**Legend**

- NBC Consolidated Mining Right

**Watercourses**

- Non-perennial
- Perennial

**Aquatic assessment points**

- Assessment points

0.05 0 0.05 0.1 0.15 0.2 0.25 km



Date: May 2021

Coordinate System:  
Geographic: WGS84

## NBC Consolidation Project



### Aquatic assessment points

P.O. Box 145202  
Bracken Gardens  
1452

Tel. No.: (+27) 82 863 0769  
Email: [info@ecologyinternational.net](mailto:info@ecologyinternational.net)  
Web: [www.ecologyinternational.net](http://www.ecologyinternational.net)





# Glisa EMP & IWUL Consolidation Project

## LEGEND

- Towns
- Existing Monitoring Points**
  - Groundwater
  - Surface Water
- Rivers and Streams**
  - Non-Perennial
  - Perennial
- Road Network**
  - National Route
  - Main Road
  - Secondary Road
  - Street
  - Railway Line
  - Consolidated Mining Right
  - Parent Farms
  - Farm Portions

## EXISTING MONITORING SITES

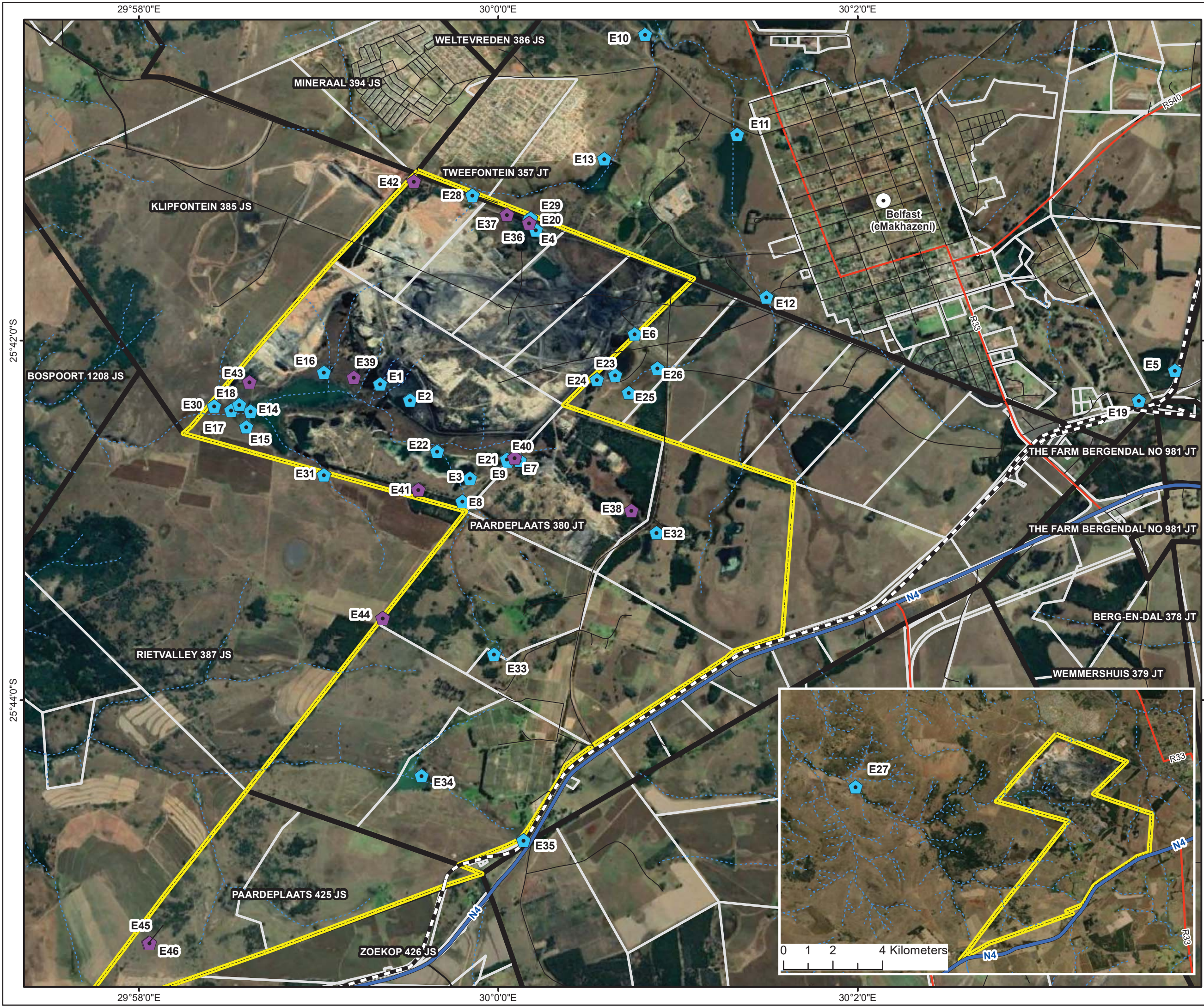
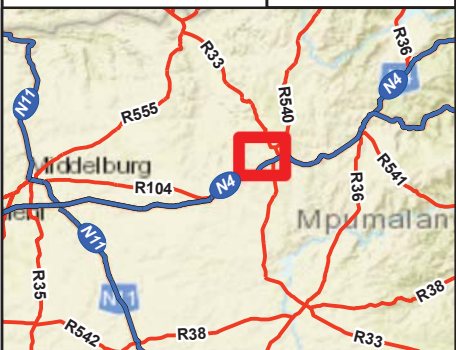


Reviewed: R. Janse Van Rensburg  
Environmental Compliance and Assessment Manager

Drawn by: A Brower  
GIS Consultant

Coordinate System: GCS WGS 1984  
Datum: WGS 1984  
Units: Degree

Scale: 1:36 000  
CIGroup: 19-0001  
Map ID: 126-001-68  
Date: 25/05/2021





# Glisa EMP & IWUL Consolidation Project

## LEGEND

○ Towns

### Proposed Monitoring Points

■ Groundwater

■ Surface Water

### Existing Monitoring Points

◆ Groundwater

◆ Surface Water

### Rivers and Streams

--- Non-Perennial

— Perennial

### Road Network

— National Route

— Main Road

— Secondary Road

— Street

— Railway Line

— Consolidated Mining Right

— Parent Farms

— Farm Portions



## PROPOSED & EXISTING MONITORING SITES



Reviewed:  
R. Janse Van Rensburg  
Environmental Compliance and  
Assessment Manager

Drawn by:  
A Brower  
GIS Consultant

Coordinate System: GCS WGS 1984  
Datum: WGS 1984  
Units: Degree

Scale: 1:36 000  
CIGroup: 19-0001  
Map ID: 126-001-69  
Date: 25/05/2021

