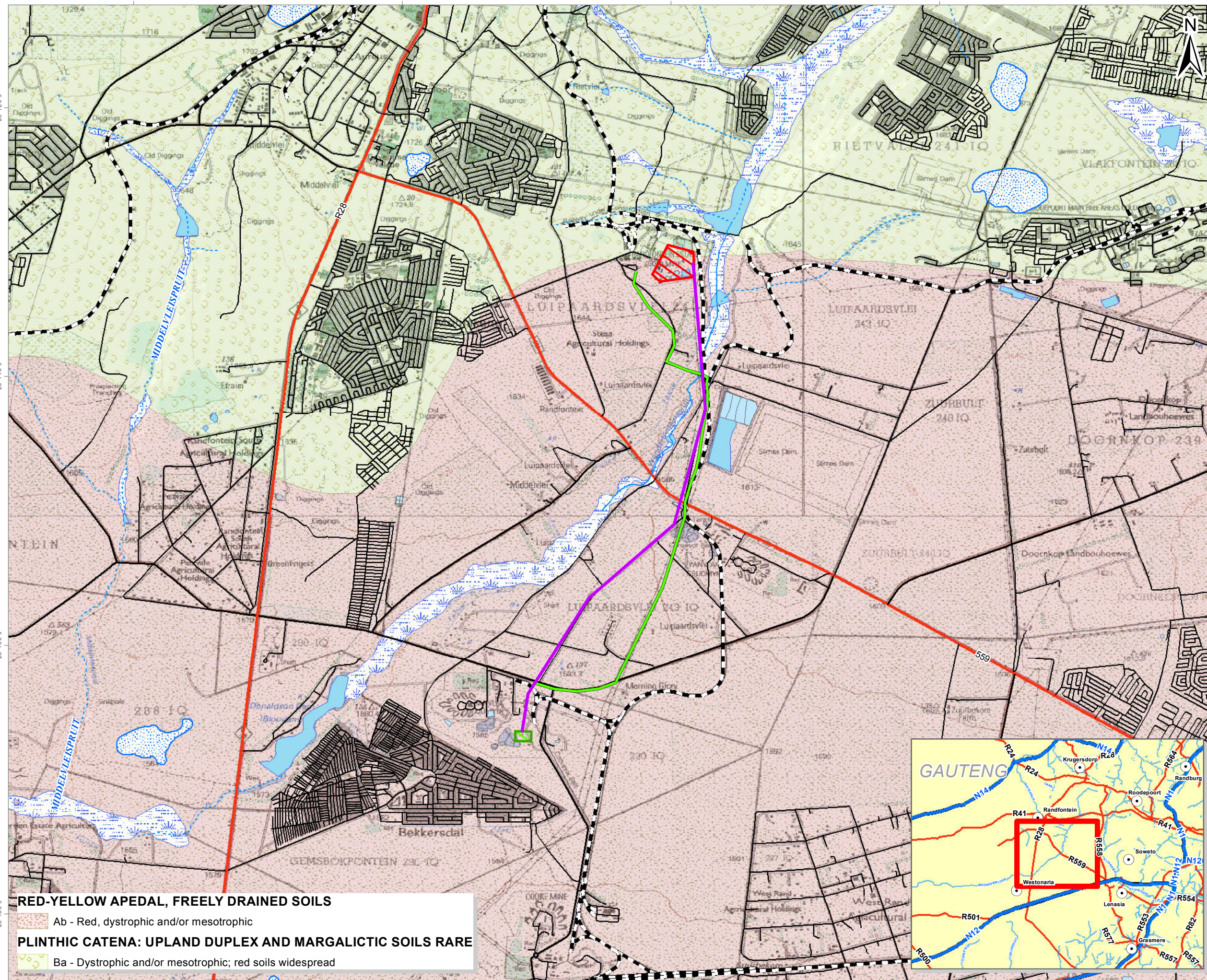


# GOLD ONE TAILINGS BACKFILL PROJECT: SOILS



### LEGEND

- Overland Line Option 1
- Overland line Option 2
- Railway Line

### Road Network

- National Route
- Main Road
- Secondary Road
- Street

### Rivers and Streams

- Non-Perennial
- Perennial

### Inland Water

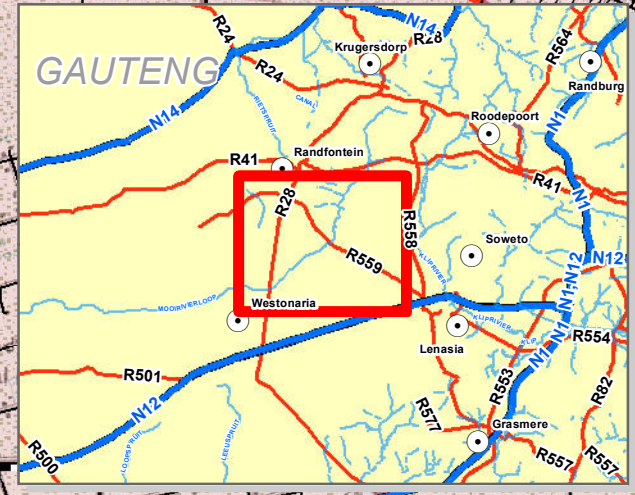
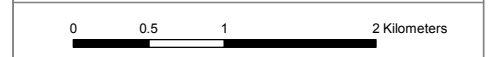
- Dams and lakes
- Dry pans
- Reservoirs and water tanks
- Marsh and swamps
- Non-perennial pans

- Existing Metallurgical Plant
- Proposed New Tailings Backfill Plant

Data Sources: Land types of South Africa: Digital map (1:250 000 scale), ARC-Institute for Soil, Climate and Water, Pretoria, 2006

Disclaimer:

FIGURE NO.:	-
MAP NUMBER:	12-561-20130129-05
DRAWN BY:	P. SNYDERS GIS TECHNICIAN
REVIEWED BY:	A.J. MAIN GIS TECHNOLOGIST
DATUM:	WGS84
PROJECTION:	GEOGRAPHIC
DATE:	29 JANUARY 2013
CLIENT:	GOLD ONE INTERNATIONAL LIMITED
PROJECT:	GOLD 1 TAILINGS BACKFILL PROJECT
SCALE:	1:50 000



### RED-YELLOW APEDAL, FREELY DRAINED SOILS

- Ab - Red, dystrophic and/or mesotrophic

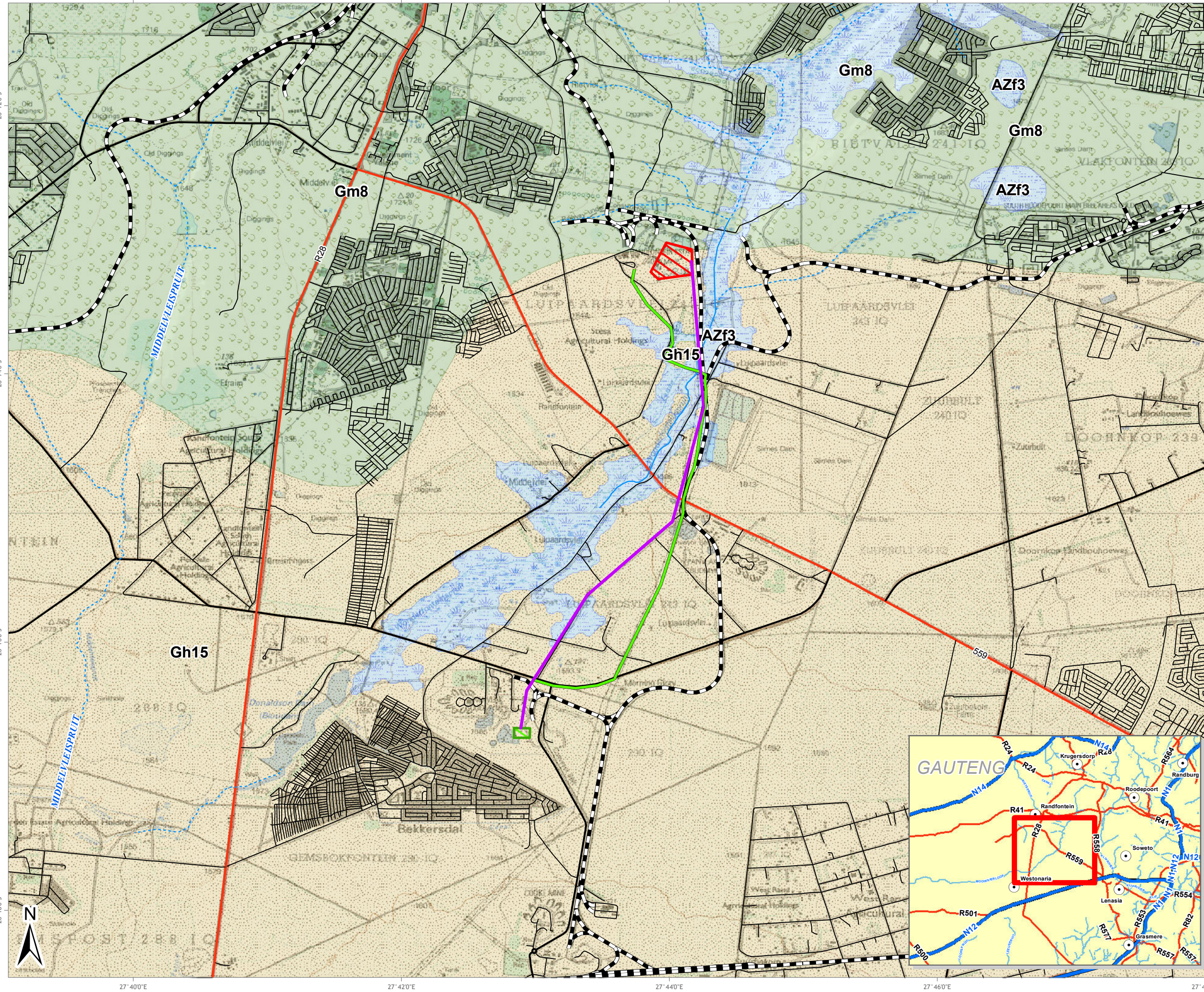
### PLINTHIC CATENA: UPLAND DUPLEX AND MARGALICTIC SOILS RARE

- Ba - Dystrophic and/or mesotrophic; red soils widespread

63 Wessel Road Woodmead  
PO Box 2597 Rivonia 2128  
South Africa  
Tel: +27 (0) 11 803 5726  
Fax: +27 (0) 11 803 5745  
E-mail: jhb@gcs-sa.biz  
www.gcs-sa.biz

27°40'0"E      27°42'0"E      27°44'0"E      27°46'0"E      27°48'0"E

# GOLD ONE TAILINGS BACKFILL PROJECT: VEGETATION



**LEGEND**

- Overland Line Option 1
- Overland line Option 2
- Railway Line

**Road Network**

- National Route
- Main Road
- Secondary Road
- Street

**Rivers and Streams**

- Non-Perennial
- Perennial

**Existing Metallurgical Plant**

**Proposed New Tailings Backfill Plant**

**Vegetation Classification**

- Gh 15 Carletonville Dolomite Grassland
- Gm 8 Soweto Highveld Grassland
- AZf 3 Eastern Temperate Freshwater Wetlands

Data Sources: Ladislav Mucina & Michael C. Rutherford (eds). 2006: The Vegetation of South Africa, Lesotho and Swaziland. SANBI.

Disclaimer:

FIGURE NO.:

MAP NUMBER: 12-561-20130129-05

DRAWN BY: P. SNYDERS GIS TECHNICIAN

REVIEWED BY: A.J. MAIN GIS TECHNOLOGIST

DATUM: WGS84  
PROJECTION: GEOGRAPHIC

DATE: 29 JANUARY 2013

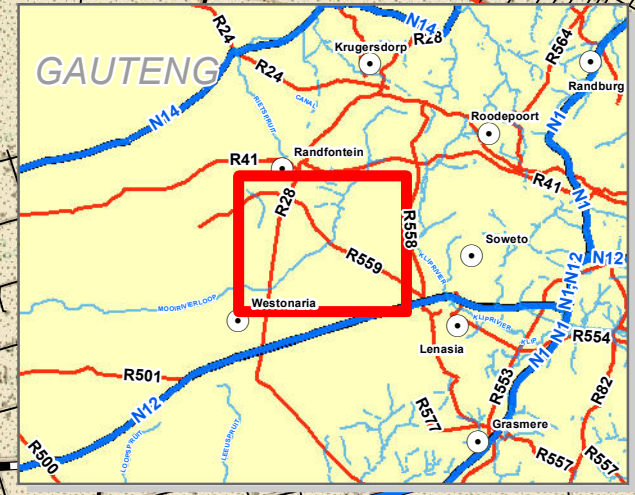
CLIENT: GOLD ONE INTERNATIONAL LIMITED

PROJECT: GOLD 1 TAILINGS BACKFILL PROJECT

SCALE: 1:50 000

0 0.5 1 2 Kilometers

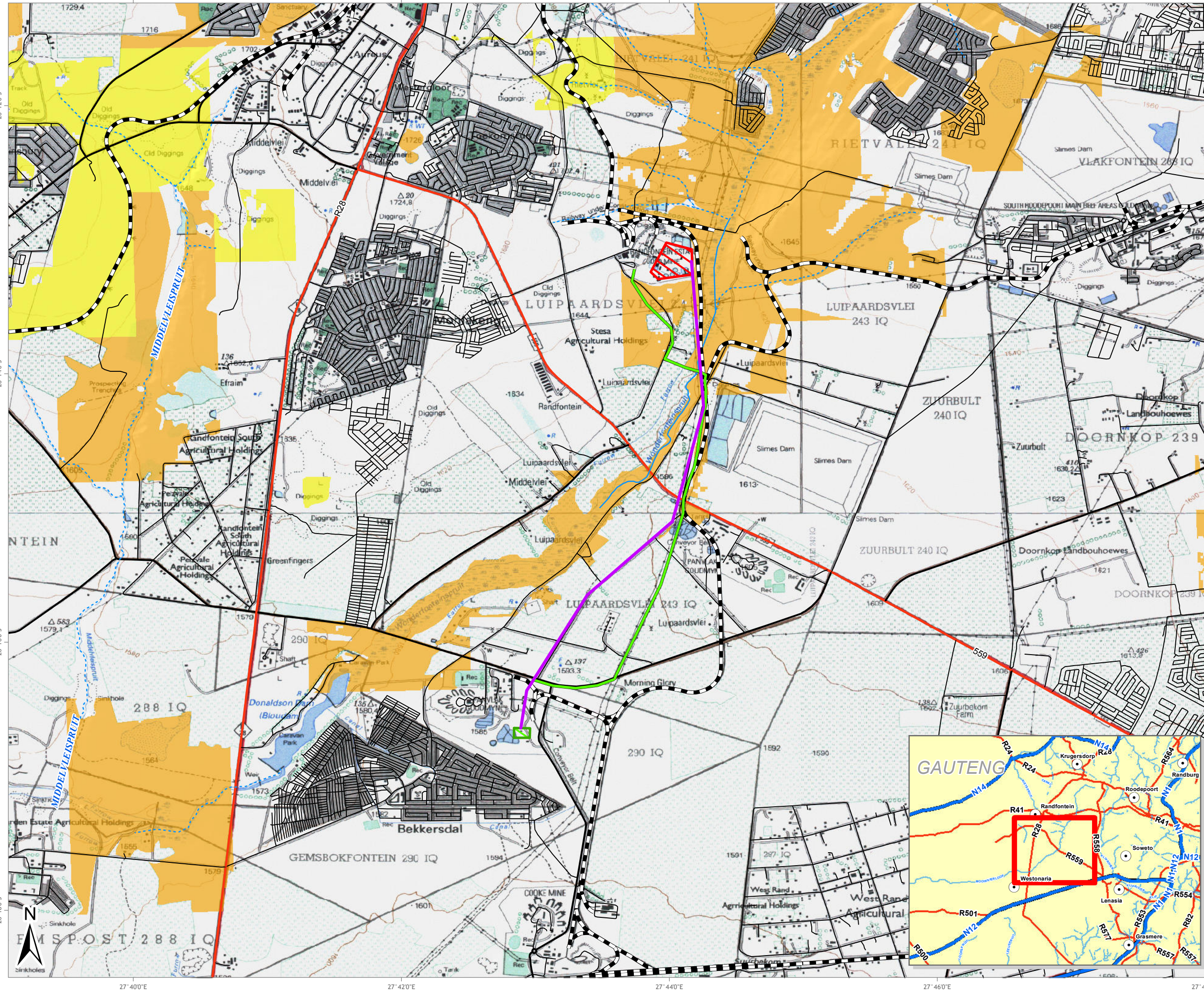
**GCS** Water & Environmental Consultants  
63 Wessel Road Woodmead  
PO Box 2597 Rivonia 2128  
South Africa  
Tel: +27 (0) 11 803 5726  
Fax: +27 (0) 11 803 5745  
E-mail: jhb@gcs-sa.biz  
www.gcs-sa.biz



26°12'0"S  
26°14'0"S  
26°16'0"S  
26°18'0"S

27°40'0"E 27°42'0"E 27°44'0"E 27°46'0"E 27°48'0"E

# GOLD ONE TAILINGS BACKFILL PROJECT: GAUTENG CONSERVATION PLAN



**LEGEND**

- Overland Line Option 1
- Overland line Option 2
- Railway Line

**Road Network**

- National Route
- Main Road
- Secondary Road
- Street

**Rivers and Streams**

- Non-Perennial
- Perennial

**Existing Metallurgical Plant**

- Existing Metallurgical Plant
- Proposed New Tailings Backfill Plant

**Gauteng Conservation Plan**

- Important Site
- Irreplaceable Site
- Reserved Site

Data Sources: Gauteng Department: Agriculture, Conservation and Environment Conservation Plan (version 2) - 2004

Disclaimer:

FIGURE NO.:

MAP NUMBER: 12-561-20130129-03

DRAWN BY: P. SNYDERS GIS TECHNICIAN

REVIEWED BY: A.J. MAIN GIS TECHNOLOGIST

DATUM: WGS84  
PROJECTION: GEOGRAPHIC

DATE: 29 JANUARY 2013

CLIENT: GOLD ONE INTERNATIONAL LIMITED

PROJECT: GOLD 1 TAILINGS BACKFILL PROJECT

SCALE: 1:50 000

**GCS**  
Water & Environmental Consultants

63 Wessel Road Woodmead  
PO Box 2597 Rivonia 2128  
South Africa  
Tel: +27 (0) 11 803 5726  
Fax: +27 (0) 11 803 5745  
E-mail: jhb@gcs-sa.biz  
www.gcs-sa.biz

# GOLD ONE TAILINGS BACKFILL PROJECT: QUATERNARY CATCHMENTS



**LEGEND**

- Towns
- Rivers
- National Roads
- Main Roads
- Overland Line Option 1
- Overland line Option 2
- Existing Metallurgical Plant
- Proposed New Tailings Backfill Plant
- Quaternary Drainage Region
- Water Management Area

Data Sources: Google Earth™ mapping service: 2013  
 Imagery Date: 10/04/2013

Disclaimer:

FIGURE NO.: -

MAP NUMBER: 12-561-20130626-01

DRAWN BY: P. SNYDERS  
GIS TECHNICIAN

REVIEWED BY: A.J. MAIN  
GIS TECHNOLOGIST

DATUM: WGS84  
PROJECTION: GEOGRAPHIC

DATE: 26 JUNE 2013

CLIENT: GOLD ONE INTERNATIONAL LIMITED

PROJECT: GOLD 1 TAILINGS BACKFILL PROJECT

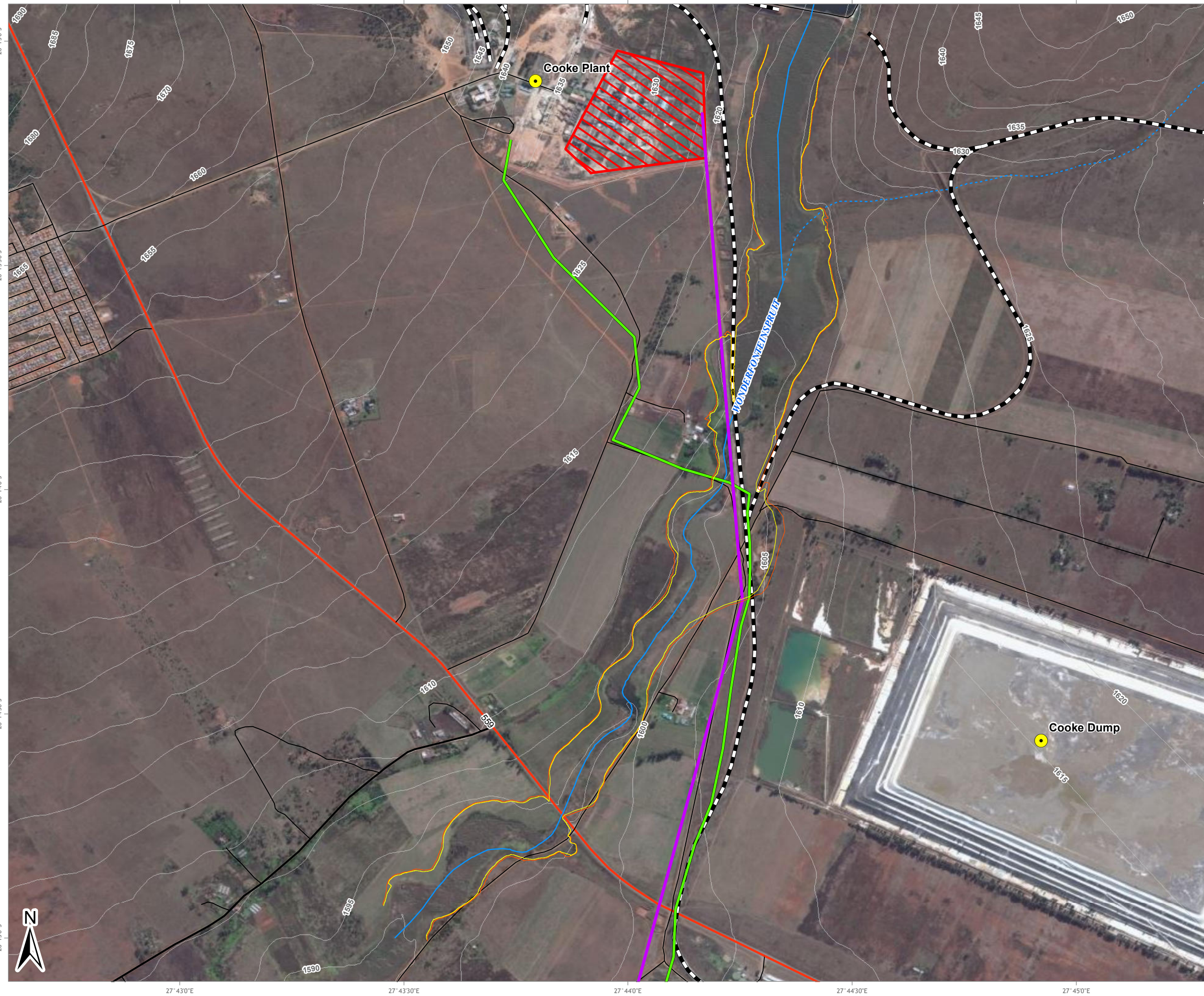
SCALE: 1:150 000

0 1.5 3 6 Kilometers

**GCS**  
Water & Environmental Consultants

63 Wessel Road Woodmead  
PO Box 2597 Rivonia 2128  
South Africa  
Tel: +27 (0) 11 803 5726  
Fax: +27 (0) 11 803 5745  
E-mail: jhb@gcs-sa.biz  
www.gcs-sa.biz

# GOLD ONE TAILINGS BACKFILL PROJECT: FLOODLINES



**LEGEND**

- Gold One Cooke Operations
- 1:50 year flood line
- 1:100 year flood line
- Overland Line Option 1
- Overland line Option 2
- Railway Line

**Road Network**

- National Route
- Main Road
- Secondary Road
- Street

**Rivers and Streams**

- Non-Perennial
- Perennial

- Existing Metallurgical Plant
- 5m Contours

Data Sources: Microsoft Bing Maps  
 (c) 2010 Microsoft Corporation and its data suppliers

Disclaimer:

FIGURE NO.: -

MAP NUMBER: 12-561-20130708-01

DRAWN BY: P. SNYDERS  
GIS TECHNICIAN

REVIEWED BY: A.J. MAIN  
GIS TECHNOLOGIST

DATUM: WGS84  
PROJECTION: GEOGRAPHIC

DATE: 8 JULY 2013

CLIENT: GOLD ONE INTERNATIONAL LIMITED

PROJECT: GOLD 1 TAILINGS BACKFILL PROJECT

SCALE: 1:15 000

0 150 300 600 Meters

**GCS**  
Water & Environmental  
Consultants

63 Wessel Road Woodmead  
PO Box 2597 Rivonia 2128  
South Africa  
Tel: +27 (0) 11 803 5726  
Fax: +27 (0) 11 803 5745  
E-mail: jhb@gcs-sa.biz  
www.gcs-sa.biz