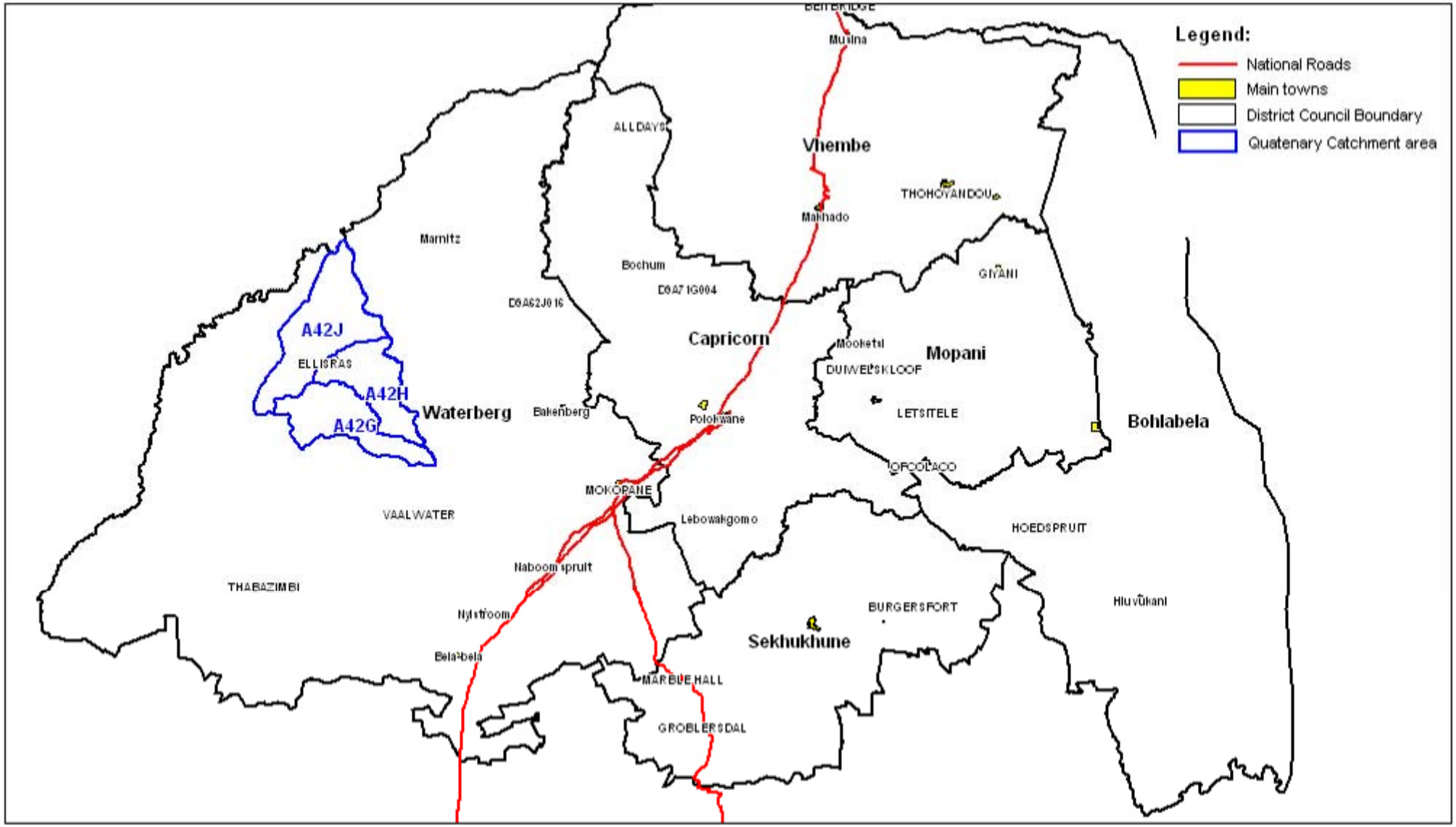
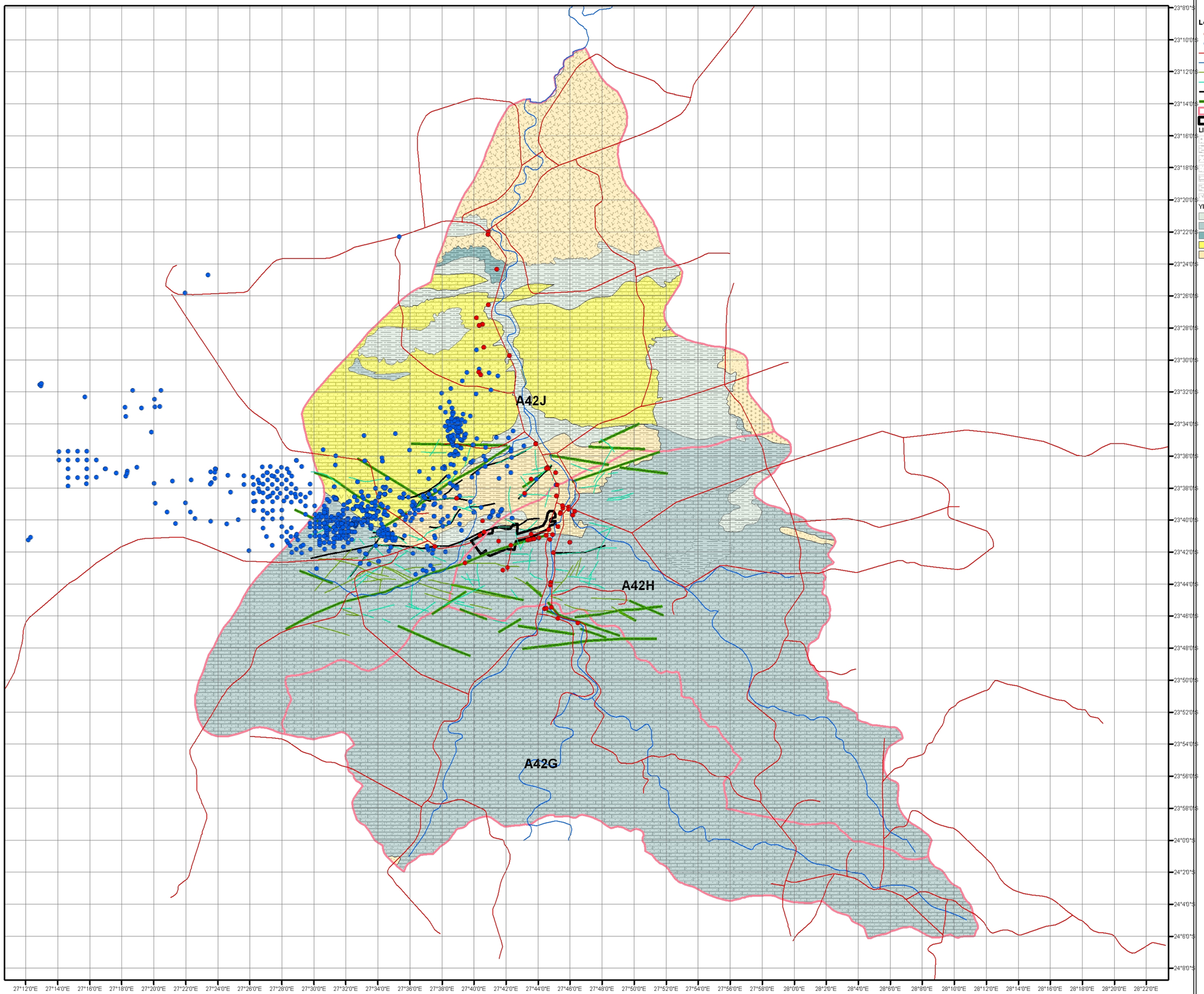
Plan 1 : Locality Map





Legend

- Captured data
- IGS data
- Roads
- Rivers
- Dykes
- Lineaments
- PossibleFault
- SRTMlinear
- Quaternary Drainage Region
- LEPHALALE

LITHOLOGY

- Acid/Intermediate/Alkaline intrusive rocks (various granitoids)
- Argillaceous and arenaceous rocks (approximately equal proportions)
- Mafic/ultra mafic extrusive rocks (basalt, andesite)
- Mafic/ultra mafic intrusive rocks (dolerite, diabase, diorite, gabbro, dunite, pyroxenite, norite, anorthosite, hornblendite, carbonatite)
- Predominantly arenaceous rocks (sandstone, feldspathic sandstone, arkose)
- Predominantly argillaceous rocks (shale, carbonaceous shale, claystone, mudstone, siltstone)
- Undifferentiated rocks and various mixed lithologies

YIELD SYMBOL

- b2 0.1 - 0.5l/s
- b3 0.5 - 2.0l/s
- b4 2.0 - 5.0l/s
- d2 0.1 - 0.5l/s
- d3 0.5 - 2.0l/s

N

0 5 10 20
Kilometers

1:305,000

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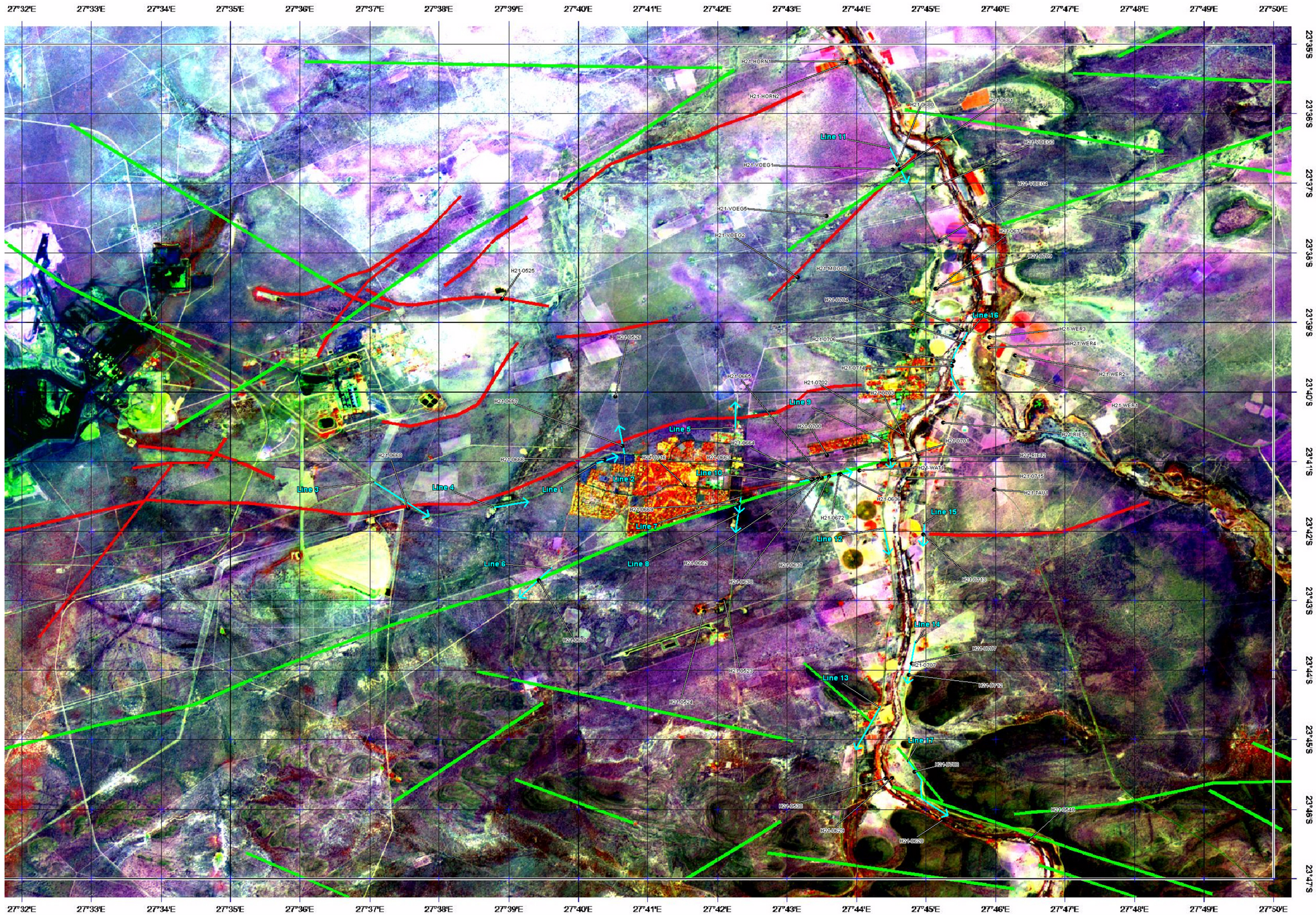
Plan 2 : Hydrogeology with hydrocensus boreholes.

ASTER False Colour Infrared
Major linear structures inferred from SRTM data and approximate positions of faults



Legend

- Borehole
- Geophysical Traverse
- Contacts
- Dykes

N

Scale & Projection

Projection : Geological Survey Degree (Longitude-Latitude)
WGS84 Projection

0 2 4
kilometres
1 : 50 000

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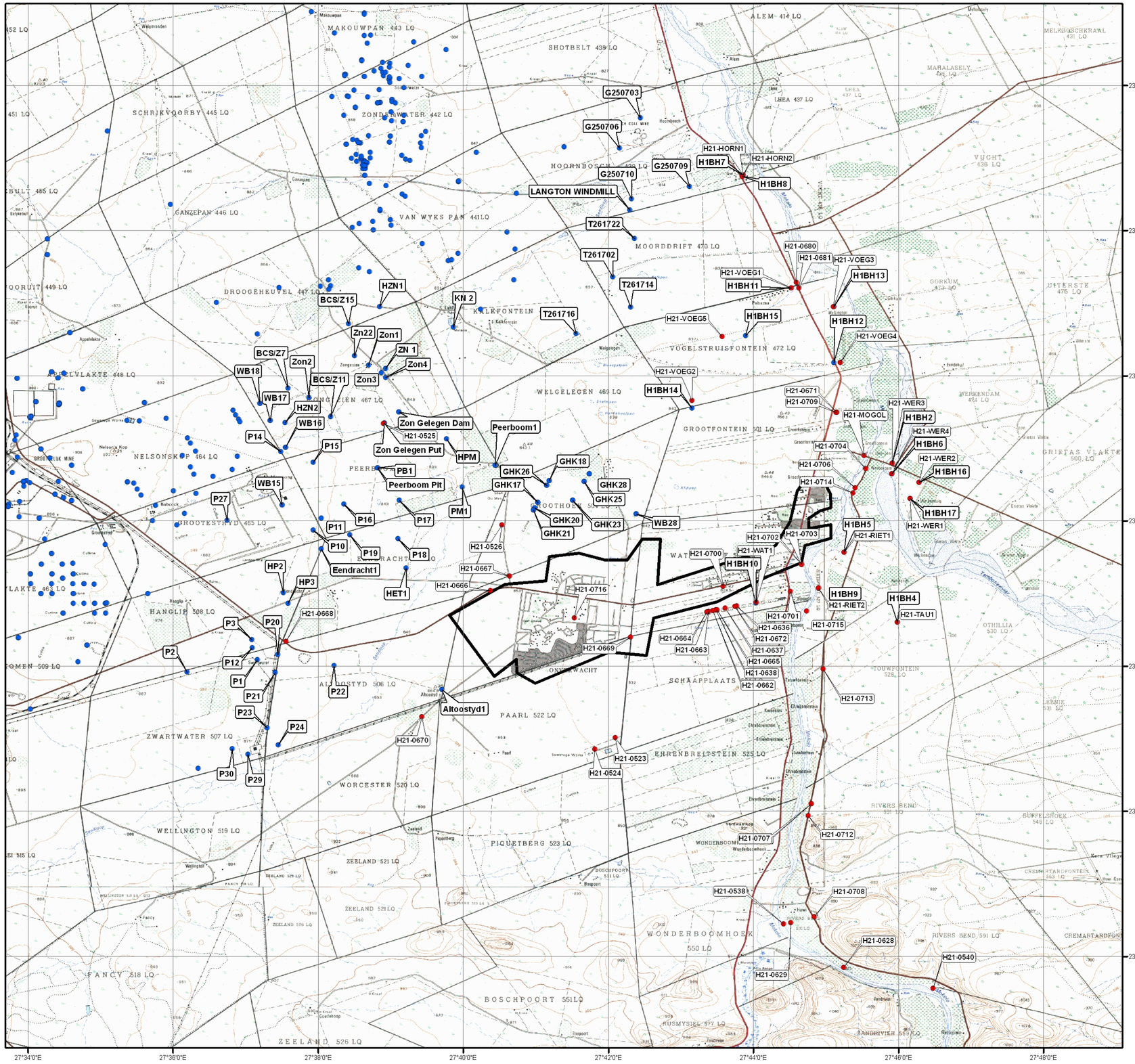
Plan 3 : Geological structures with geophysical traverse and borehole positions.



Legend

- Captured data
- IGS data
- LEPHALALE

N

0 1.25 2.5 5
Kilometers

1:75,000

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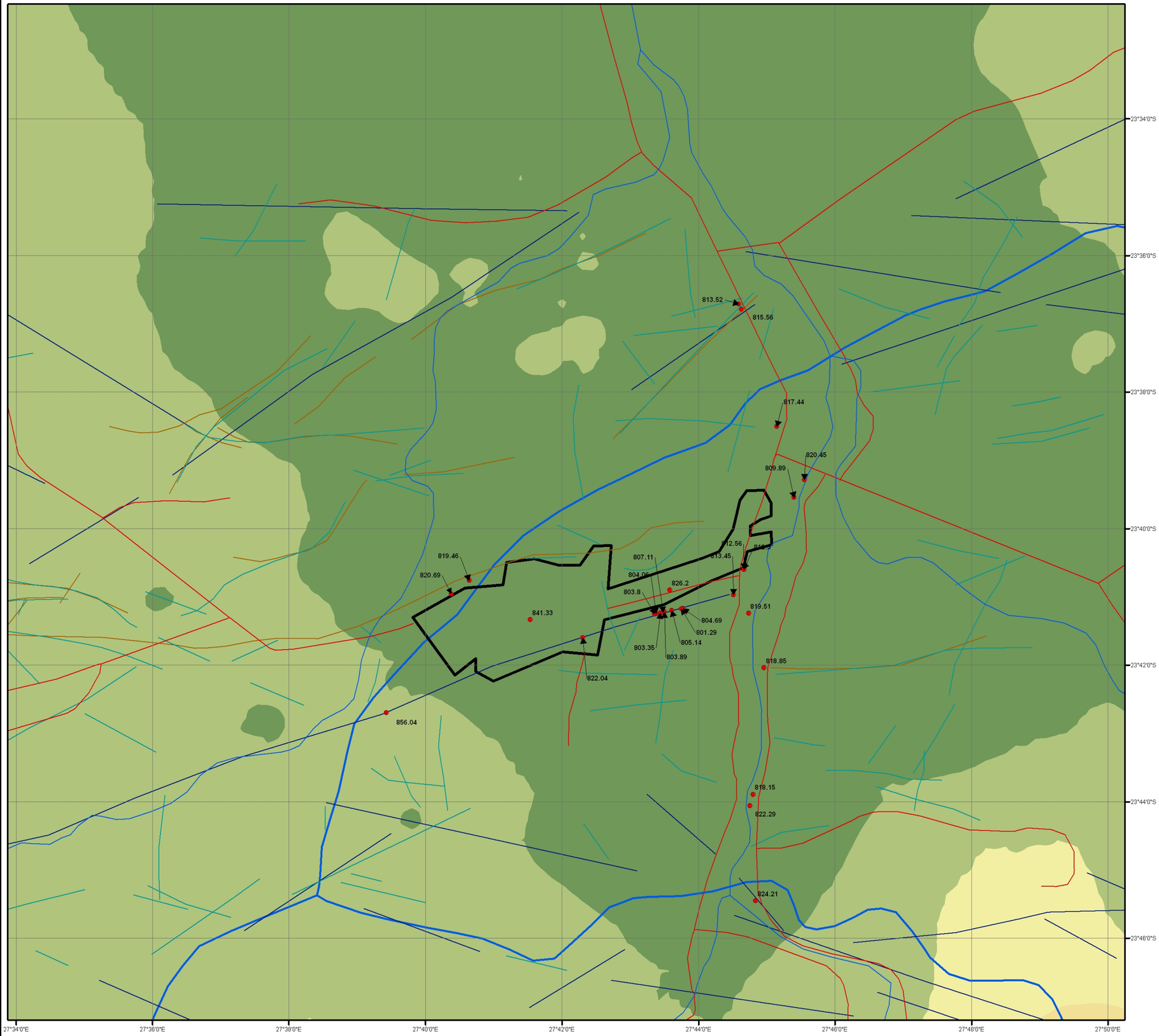
Plan 4 Topo with IGS Data and Exploration Boreholes.



Legend

- Exploration borehole
- Rivers
- Roads
- Lineaments
- PossibleFault
- SRTMlinear
- LEPHALALE
- Quatenary Catchments
- 765 - 850
- 850 - 950
- 950 - 1050
- 1050 - 1,150
- 1,150 - 1,250
- 1,250 - 1,300
- 1,300 - 1,400
- 1,400 - 1,450
- 1,450 - 1,500

N

0 0.5 1 2
Kilometers
1:75,000

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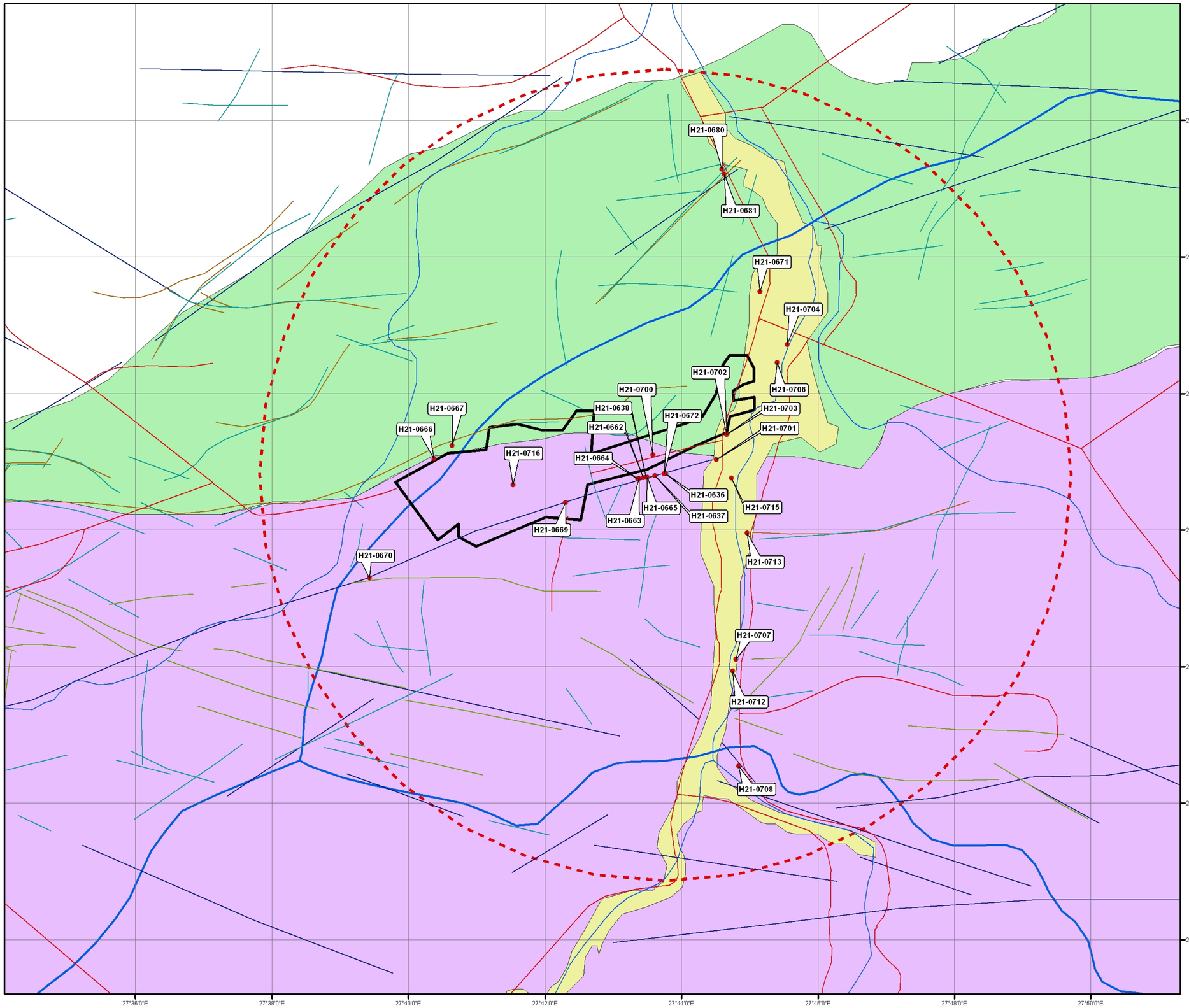
Plan 5 : Groundwater level elevations in Lephalale area. (mamsl)



Legend

- Exploration borehole
- Rivers
- Roads
- Lineaments
- PossibleFault
- SRTMlinear
- 10km Radius
- Quatenary Catchments
- LEPHALALE
- Alluvial aquifer
- Semi-confined aquifer
- Confined aquifer

N

0 1 2 4
Kilometers

1:75,000

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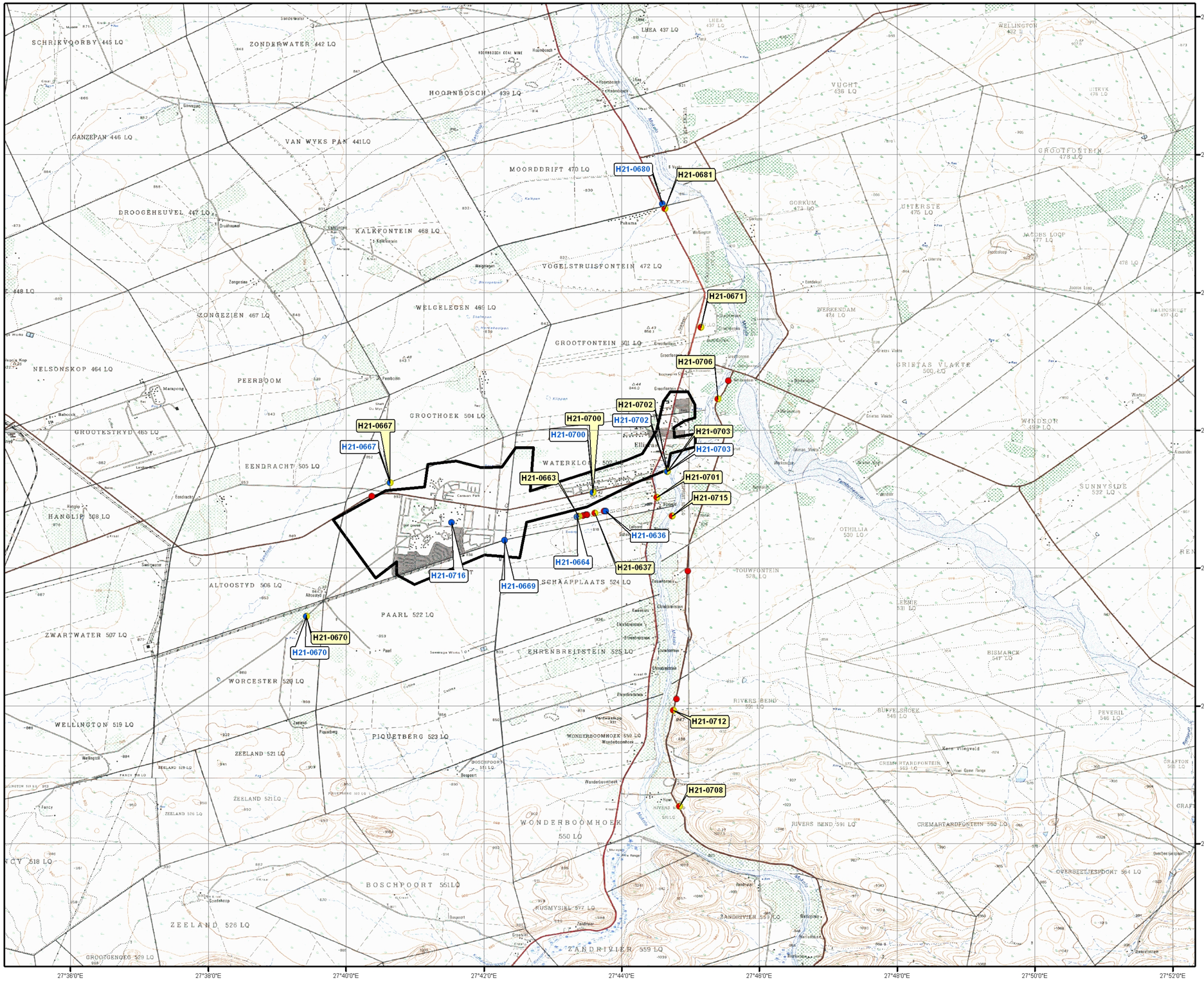
Plan 6 : Aquifer Units based on Geology.



Legend

- Water Quality Monitoring
- Waterlevel Monitoring
- Exploration Boreholes
- LEPHALALE

N

0 1 2 4
Kilometers
1:75,000

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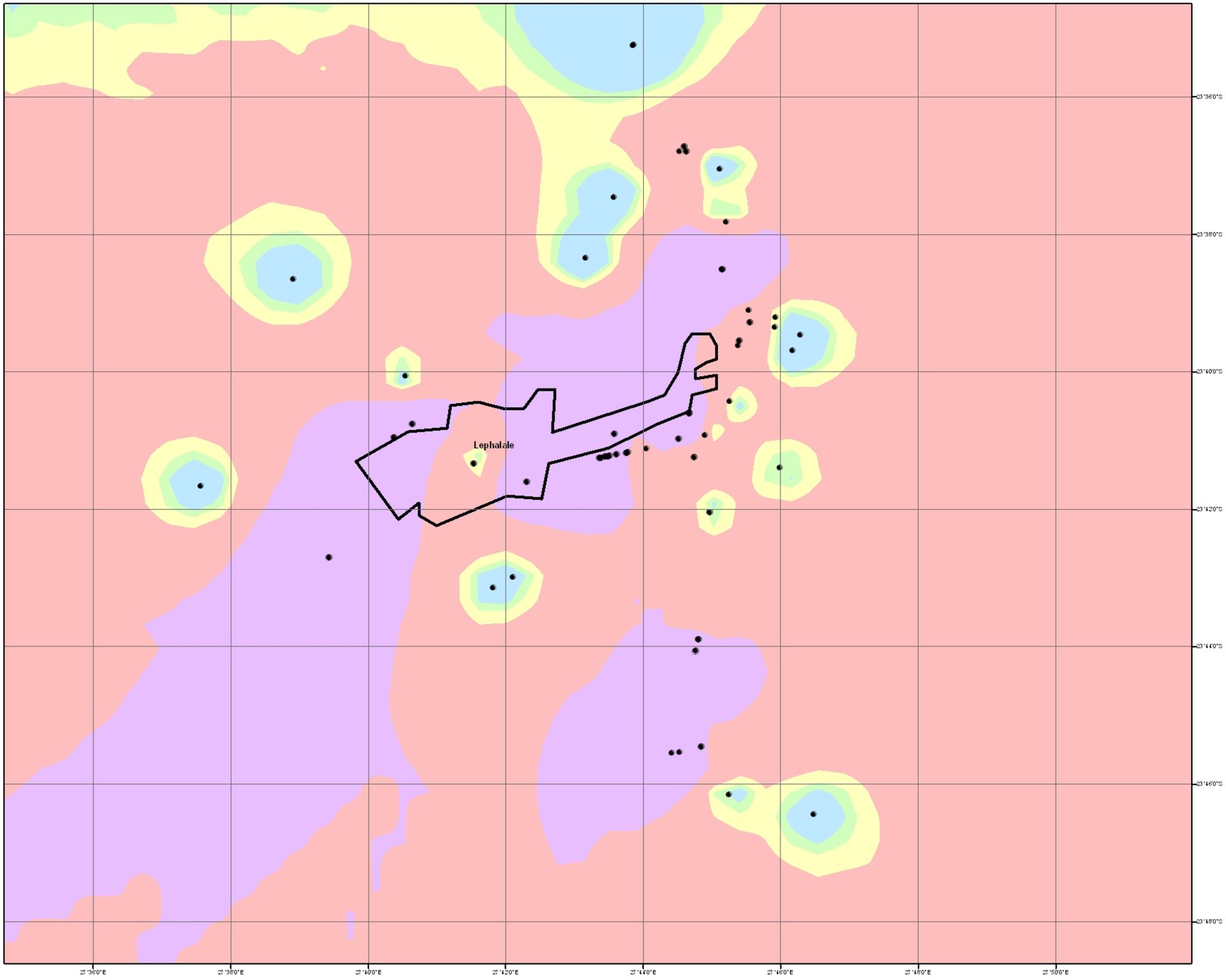
Plan 7: Captured Boreholes and monitoring network.



Legend

- Borehole
- LEPHALALE

FLUORIDE (F)

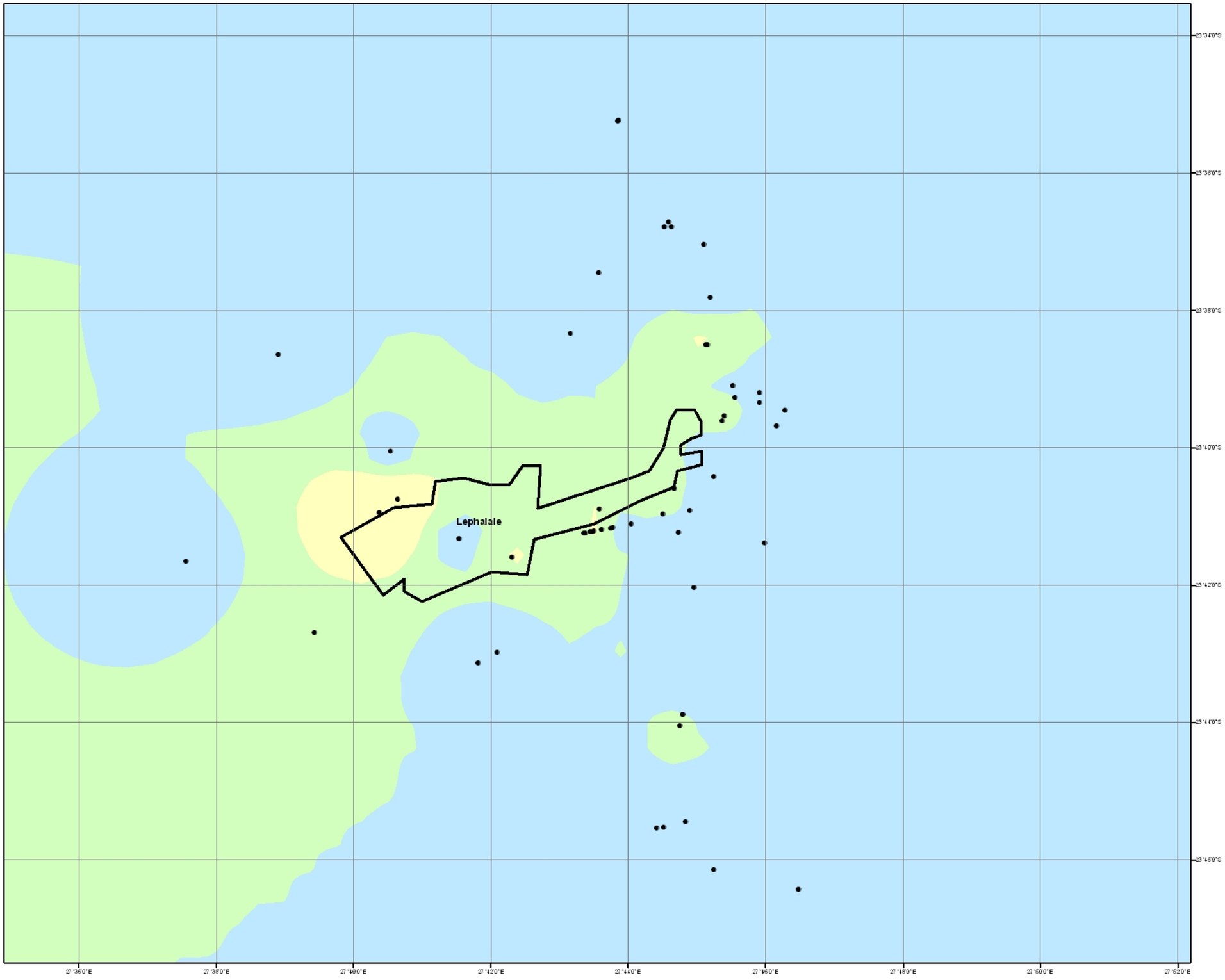
- 0 - 0.7 (IDEAL)
- 0.7 - 1.0 (GOOD)
- 1.0 - 1.5 (MARGINAL)
- 1.5 - 3.5 (POOR)
- 3.5 - 15 (UNACCEPTABLE)

N

0 1 2 4
Kilometers
1:75,000

Prepared By:

Plan 8: Fluoride



Legend

LEPHALALE

ELECTRICAL CONDUCTIVITY

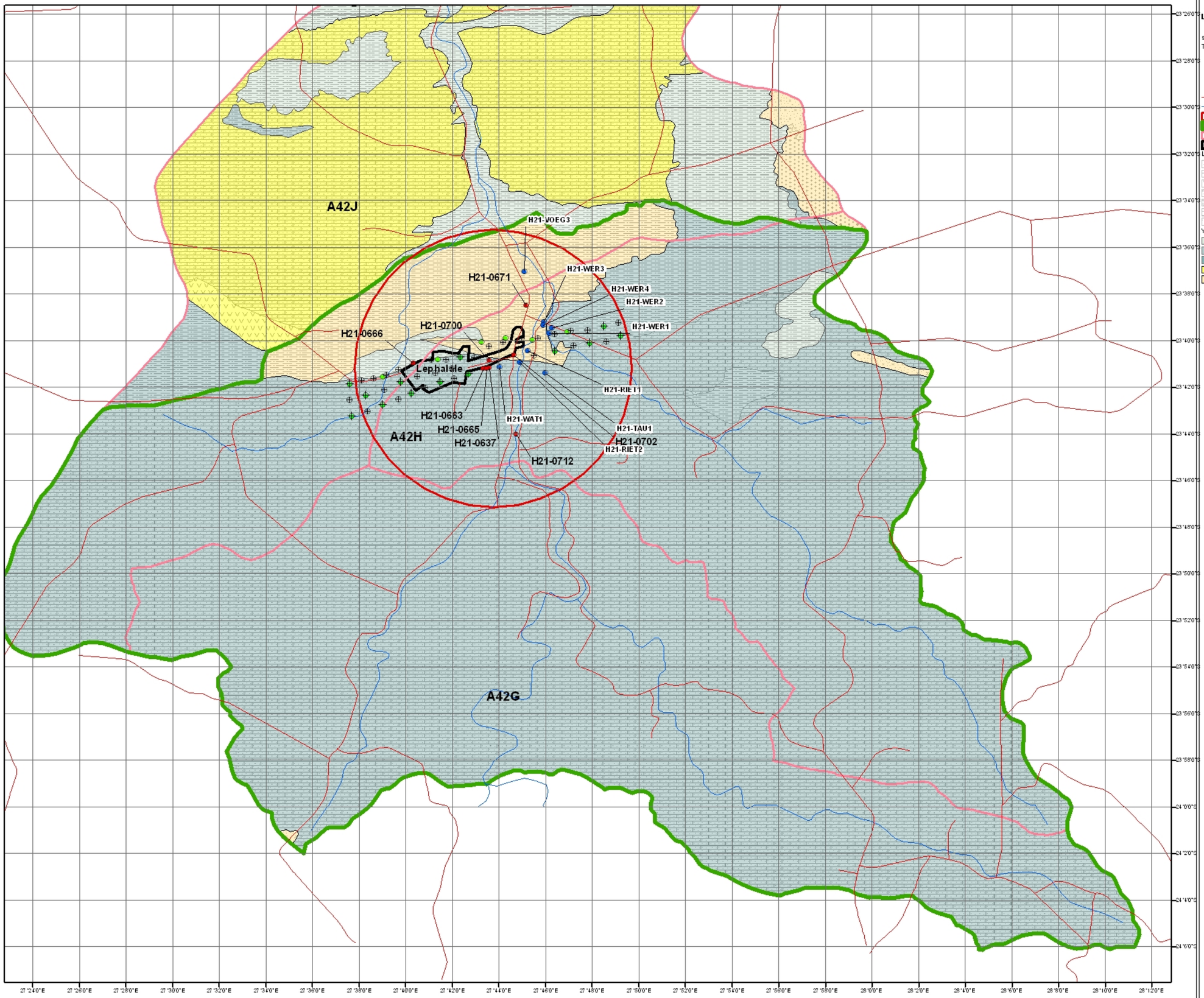
- 0.0 - 70 (IDEAL)
- 70.0 - 150 (GOOD)
- 150.0 - 370 (MARGINAL)
- 370.0 - 520 (POOR)
- 520.0 - 8,900 (UNACCEPTABLE)

N

0 1 2 4
Kilometers
1:75,000

Prepared By:

Plan 9: Electrical conductivity



Legend

WATER USERS

SCENARIOS

TYPE

- Pump Boreholes
- Scenario 3
- Scenario 3 AND 4
- Scenario 4
- Roads
- Rivers
- IGIS MRADI
- Groundwater model
- Quaternary Drainage Region
- LEPHALALE

LITHOLOGY

- Acid/Intermediate/Alkaline intrusive rocks (various granitoids)
- Argillaceous and arenaceous rocks (approximately equal proportions)
- Mafic/Ultramafic extrusive rocks (basalt, andesite)
- Mafic/Ultramafic intrusive rocks (dolerite, diabase, diorite, gabbro, diunite, pyroxenite, norite, anorthosite, hornblendite, carbonatite)
- Predominantly arenaceous rocks (sandstone, feldspathic sandstone, arkose)
- Predominantly argillaceous rocks (shale, carbonaceous shale, chystone, mudstone, siltstone)
- Undifferentiated rocks and various mixed lithologies

YIELD SYMBOL

- b2 0.1 - 0.5l/s
- b3 0.5 - 2.0l/s
- b4 2.0 - 5.0l/s
- d2 0.1 - 0.5l/s
- d3 0.5 - 2.0l/s

N

0 3.75 7.5 15

Kilometers

1:210,000

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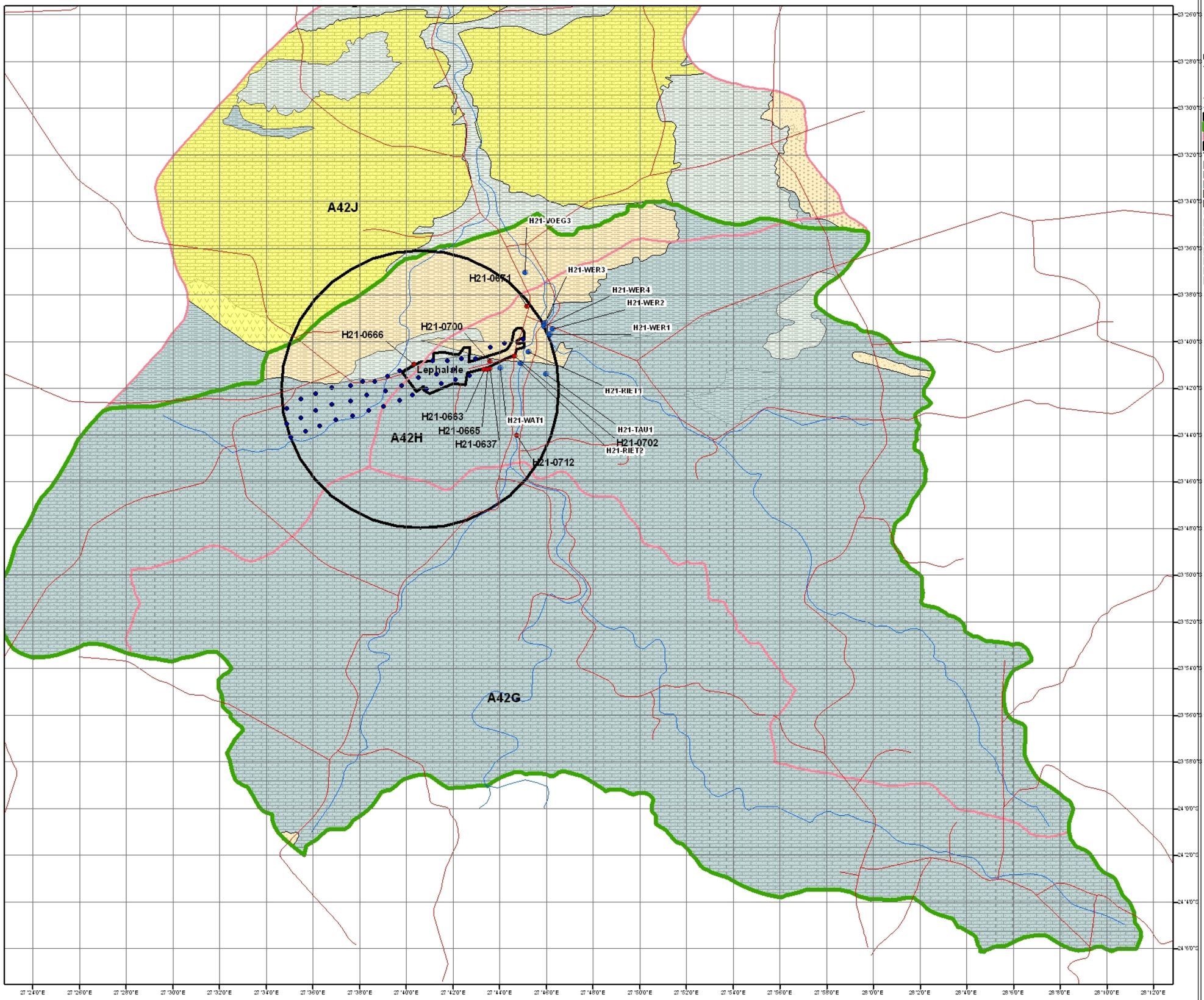
Plan 10 : Lephalale Groundwater Model.



Legend

TYPE

- Pump Borehole
- Scenario 5 Borehole
- Roads
- Rivers
- 10km Radius
- Groundwater model
- Quaternary Drainage Region
- LEPHALALE

YIELD SYMBOL

- b2 0.1 - 0.5l/s
- b3 0.5 - 2.0l/s
- b4 2.0 - 5.0l/s
- d2 0.1 - 0.5l/s
- d3 0.5 - 2.0l/s

LITHOLOGY

- Acidic/Intermediate/Alkaline intrusive rocks (batholith granitoids)
- Argillaceous and arenaceous rocks (approximately equal proportions)
- Mafic/Ultramafic extrusive rocks (basalt, andesite)
- Mafic/Ultramafic intrusive rocks (dolerite, diabase, diorite, gabbro, diorite, pyroxenite, norite, anorthosite, hornblendite, carbonatite)
- Predominantly arenaceous rocks (sandstone, feldspathic sandstone, arkose)
- Predominantly argillaceous rocks (shale, carbonaceous shale, chlorite, mudstone, siltstone)
- Undifferentiated rocks and various mixed lithologies

N

0 3.75 7.5 15

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Plan 11 : Lephalale Groundwater Model: Scenario 5