ARCHAEOLOGICAL DESKTOP STUDY

for the Application of a Prospecting Right on several Portions of the Farms Golden Valley 621 IQ, Kaalfontein 44 IQ, Koestersfontein 45 IQ, Migalsoord 152 IQ, Rietpoort 395 JQ, Sluis 46 IQ, Vaalbank 512 JQ and Zuikerboschfontein 151 IQ, Magaliesburg, Gauteng

Author ©:
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April 2021

An Archaeological Desktop Study for the Application of a Prospecting Right on several Portions of the Farms Golden Valley 621 IQ, Kaalfontein 44 IQ, Koestersfontein 45 IQ, Migalsoord 152 IQ, Rietpoort 395 JQ, Sluis 46 IQ, Vaalbank 512 JQ and Zuikerboschfontein 151 IQ, Magaliesburg, Gauteng

For: Elementum Sustainability (Pty) Ltd

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Version: 1

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- I, Tobias Coetzee, declare that –
- I act as the independent specialist;
- I am conducting any work and activity relating to the proposed Cold Gold Prospecting Project in an objective manner, even if this results in views and findings that are not favourable to the client;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have the required expertise in conducting the specialist report and I will comply with legislation, regulations and any guidelines that have relevance to the proposed activity;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this declaration are true and correct.

Coetzee

Date: 18 April 2021

List of Abbreviations

AIA – Archaeological Impact Assessment

CRM – Cultural Resource Management

EIA – Environmental Impact Assessment

ESA – Early Stone Age

ha – Hectare

HIA – Heritage Impact Assessment

km – Kilometre

LIA – Late Iron Age

LSA – Later Stone Age

m – Metre

MASL – Metres Above Sea Level

MEC – Member of the Executive Council

MSA – Middle Stone Age

NHRA – National Heritage Resources Act

SAHRA – South African Heritage Resources Agency

WMA – Water Management Area

Executive Summary

The author was appointed by Elemental Sustainability (Pty) Ltd to undertake an Archaeological Desktop study for Cold Gold on the demarcated project area intersecting the Farm Portions listed in **Table 1.** The project falls within the Mogale City Local Municipality and the West Rand District Municipality in the Gauteng Province. The study area is located roughly 2.5 km southwest of Magaliesburg, 26 km west of Krugersdorp and 30 km north-northeast of Carletonville. The aim of this report is to contextualise the general study area in terms of heritage resources and will provide the developers with general information regarding potentially sensitive areas. This will also shed light on what is to be expected during a Phase 1 Archaeological Impact Assessment (AIA) and aid in interpreting finds.

The study area is considered significant and sensitive from a heritage perspective as sites dating to the Stone Age, Iron Age and historic period have been identified. These include, graves/cemeteries, early gold mining activity, historical buildings, structures and sites associated with the South African War. The inspection of historical topographical maps and aerial images resulted in the identification of 148 potentially sensitive areas.

The surface and potential subsurface material remains of the identified sites might be significant from a heritage perspective. These sites should therefore be avoided by the proposed prospecting activities. Should this not possible, a qualified archaeologist should be present on-site during the prospecting phase in order to limit the potential impact on heritage resources. Areas surrounding perennial/non-perennial rivers and dams are potentially sensitive as well and care should be exercised when prospecting in these vicinities.

A full Phase 1 AIA must be done should any development that triggers an AIA result from the prospecting project, including if the cumulative impact of the proposed prospecting exceeds 0.5 ha.

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1. Project Background

1.1 Introduction

Elemental Sustainability (Pty) Ltd appointed the author to undertake an Archaeological Desktop study for Cold Gold on the demarcated area intersecting several farm portions (**Table 1**) of the farms Golden Valley 621 IQ, Kaalfontein 44 IQ, Koestersfontein 45 IQ, Migalsoord 152 IQ, Rietpoort 395 JQ, Sluis 46 IQ, Vaalbank 512 JQ and Zuikerboschfontein 151 IQ within the Mogale City Local Municipality and the West Rand District Municipality in the Gauteng Province. The study area is located roughly 2.5 km southwest of Magaliesburg, 26 km west of Krugersdorp and 30 km north-northeast of Carletonville (**Figure 1**). The purpose of this study is to contextualise the demarcated study area in order to determine the scope of heritage resources that might be encountered during the prospecting phase and subsequent heritage studies, as well as to provide recommendations for the safeguarding of archaeological resources during prospecting. The aim of this report is to provide the developer with information regarding heritage resources in the vicinity of the study area based on results from previous studies, written historical information and historical aerial images and topographical maps.

In the following report, a broad overview of the proposed prospecting for gold is provided and the study area is contextualised in terms of heritage resources. The legislation section included serves as a guide towards the effective identification and protection of heritage resources and will apply to any such material unearthed during the prospecting phase.

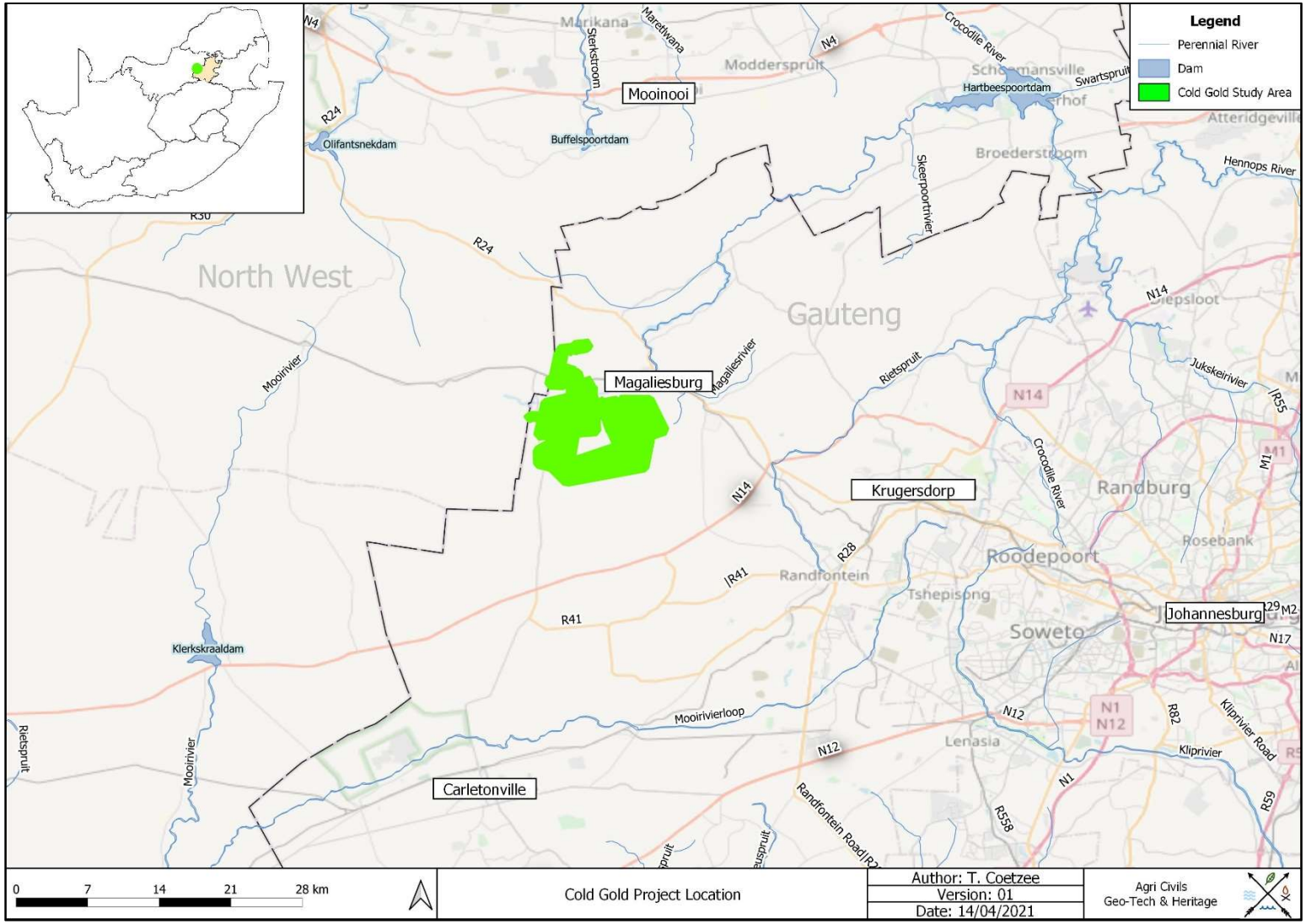

Figure 1: Regional and Provincial Location of the Study Area.

1.2 Legislation

The South African Heritage Resources Agency (SAHRA) aims to conserve and control the management, research, alteration and destruction of cultural resources of South Africa and to prosecute if necessary. It is therefore crucially important to adhere to heritage resource legislation contained in the Government Gazette of the Republic of South Africa (Act No.25 of 1999), as many heritage sites are threatened daily by development. Conservation legislation requires an impact assessment report to be submitted for development authorisation that must include an AIA if triggered.

Archaeological Impact Assessments (AIAs) should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources that might occur in areas of development and (b) make recommendations for protection or mitigation of the impact of the sites.

1.2.1 The EIA (Environmental Impact Assessment) and AIA processes

Phase 1 Archaeological Impact Assessments generally involve the identification of sites during a field survey with assessment of their significance, the possible impact that the development might have, and relevant recommendations.
All Archaeological Impact Assessment reports should include:

a. Location of the sites that are found;

b. Short descriptions of the characteristics of each site;

c. Short assessments of how important each site is, indicating which should be conserved and which mitigated;

d. Assessments of the potential impact of the development on the site(s);

e. In some cases a shovel test, to establish the extent of a site, or collection of material, to identify the associations of the site, may be necessary (a pre-arranged SAHRA permit is required); and

f. Recommendations for conservation or mitigation.

This AIA report is intended to inform the client about the legislative protection of heritage resources and their significance and make appropriate recommendations. It is essential to also provide the heritage authority with sufficient information about the sites to enable the authority to assess with confidence:

a. Whether or not it has objections to a development;

b. What the conditions are upon which such development might proceed;

c. Which sites require permits for mitigation or destruction;

d. Which sites require mitigation and what this should comprise;

e. Whether sites must be conserved and what alternatives can be proposed to relocate the development in such a way as to conserve other sites; and

f. What measures should or could be put in place to protect the sites which should be conserved.

When a Phase 1 AIA is part of an EIA, wider issues such as public consultation and assessment of the spatial and visual impacts of the development may be undertaken as part of the general study and may not be required from the archaeologist. If, however, the Phase 1 project forms a major component of an AIA it will be necessary to ensure that the study addresses such issues and complies with Section 38 of the National Heritage Resources Act (NHRA).

1.2.2 Legislation regarding archaeology and heritage sites

National Heritage Resource Act No.25 of April 1999

Buildings are among the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Farming Community settlements. The Act identifies heritage objects as:

- objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, meteorites and rare geological specimens;
- visual art objects;
- military objects;
- numismatic objects;
- objects of cultural and historical significance;
- objects to which oral traditions are attached and which are associated with living heritage;
- objects of scientific or technological interest;
- books, records, documents, photographic positives and negatives, graphic material, film or video or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996), or in a provincial law pertaining to records or archives;
- any other prescribed category.

With regards to activities and work on archaeological and heritage sites this Act states that:

"No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority." (34. [1] 1999:58)

and

"No person may, without a permit issued by the responsible heritage resources authority:

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites." (35. [4] 1999:58)

and

"No person may, without a permit issued by SAHRA or a provincial heritage resources authority:

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals." (36. [3] 1999:60)

On the development of any area the gazette states that:

"…any person who intends to undertake a development categorised as:

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50m in length;

(c) any development or other activity which will change the character of a site-

i. exceeding 5000m² in extent; or

ii. involving three or more existing erven or subdivisions thereof; or

iii. involving three or more erven or divisions thereof which have been consolidated within the past five years; or

iv. the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10000m² in extent; or

(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development."(38. [1] 1999:62-64)

and

"The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

(a) The identification and mapping of all heritage resources in the area affected;

(b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;

(c) an assessment of the impact of the development on such heritage resources;

(d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;

(e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;

(f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and

(g) plans for mitigation of any adverse effects during and after the completion of the proposed development." (38. [3] 1999:64)

Human Tissue Act and Ordinance 7 of 1925

The Human Tissues Act (65 of 1983) and Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC (Member of the Executive Council) as well as the relevant Local Authorities. Graves 60 years or older fall under the jurisdiction of the National Heritage Resources Act as well as the Human Tissues Act, 1983.

2. Study Area and Project Description

2.1 Location & Physical Environment

According to the project boundary supplied by Elemental Sustainability (2021) the proposed Cold Gold Prospecting Project is situated across the following 197 properties (**Table 1 & Figures 2 – 3**):

Table 1: Farm Portions & coordinates.

Property	Portion	Map Reference (1:50 000)	Lat (y)	Lon (x)	Extent (ha)
Kaalfontein 44 IQ	15/44	2627AB	-26.075841	27.447202	35.4
Kaalfontein 44 IQ	44/44	2627AB	-26.034779	27.437232	9.8
Kaalfontein 44 IQ	59/44	2627AB	-26.067038	27.446483	113.8
Kaalfontein 44 IQ	63/44	2627AB	-26.065166	27.457360	397.1
Kaalfontein 44 IQ	64/44	2627AB	-26.068997	27.467055	398.2
Koestersfontein 45 IQ	4/45	2627AB	-26.029697	27.473146	125.9
Koestersfontein 45 IQ	5/45	2627AB	-26.040505	27.451886	108.1
Koestersfontein 45 IQ	6/45	2627AB	-26.041110	27.458380	66.4
Koestersfontein 45 IQ	11/45	2627AB	-26.010981	27.481153	42.0
Koestersfontein 45 IQ	13/45	2627AB	-26.037875	27.478914	95.7
Koestersfontein 45 IQ	15/45	2627AB	-26.046375	27.456799	41.6
Koestersfontein 45 IQ	20/45	2627AB	-26.018786	27.470555	29.2
Koestersfontein 45 IQ	22/45	2627AB	-26.010840	27.487215	34.1
Koestersfontein 45 IQ	25/45	2627AB	-26.012706	27.471849	17.0
Koestersfontein 45 IQ	27/45	2627AB	-26.014886	27.487212	3.2
Koestersfontein 45 IQ	28/45	2627AB	-26.014822	27.488277	3.5
Koestersfontein 45 IQ	29/45	2627AB	-26.014775	27.489540	4.5
Koestersfontein 45 IQ	30/45	2627AB	-26.039833	27.459735	43.9
Koestersfontein 45 IQ	31/45	2627AB	-26.038702	27.463652	44.4
Koestersfontein 45 IQ	32/45	2627AB	-26.041456	27.462997	44.7
Koestersfontein 45 IQ	33/45	2627AB	-26.020443	27.482404	3.6
Koestersfontein 45 IQ	34/45	2627AB	-26.023606	27.480120	33.3
Koestersfontein 45 IQ	35/45	2627AB	-26.014124	27.474681	40.3
Koestersfontein 45 IQ	36/45	2627AB	-26.013555	27.477406	36.3
Koestersfontein 45 IQ	37/45	2627AB	-26.024704	27.476877	35.3
Koestersfontein 45 IQ	39/45	2627AB	-26.037332	27.485076	183.9
Koestersfontein 45 IQ	40/45	2627AB	-26.016196	27.483060	37.0
Koestersfontein 45 IQ	41/45	2627AB	-26.020243	27.489154	18.9
Koestersfontein 45 IQ	42/45	2627AB	-26.020502	27.487103	18.1
Koestersfontein 45 IQ	43/45	2627AB	-26.021239	27.484964	18.1

Property	Portion	Map Reference (1:50 000)	Lat (y)	Lon (x)	Extent (ha)
Koestersfontein 45 IQ	44/45	2627AB	-26.023783	27.482861	12.1
Koestersfontein 45 IQ	45/45	2627AB	-26.035918	27.481396	7.0
Koestersfontein 45 IQ	46/45	2627AB	-26.027793	27.448509	24.9
Koestersfontein 45 IQ	47/45	2627AB	-26.028347	27.451317	32.6
Koestersfontein 45 IQ	48/45	2627AB	-26.038145	27.453123	21.3
Koestersfontein 45 IQ	51/45	2627AB	-26.023474	27.457602	79.2
Koestersfontein 45 IQ	52/45	2627AB	-26.035714	27.446170	10.5
Koestersfontein 45 IQ	53/45	2627AB	-26.044269	27.446321	84.6
Koestersfontein 45 IQ	54/45	2627AB	-26.034988	27.467673	280.2
Sluis 46 IQ	1/46	2627BA	-26.060521	27.524089	34.4
Sluis 46 IQ	2/46	2627AB	-26.089569	27.469829	18.3
Sluis 46 IQ	3/46	2627AB	-26.085323	27.470546	19.9
Sluis 46 IQ	4/46	2627AB	-26.088718	27.473999	18.7
Sluis 46 IQ	5/46	2627AB	-26.084230	27.474741	21.1
Sluis 46 IQ	6/46	2627AB	-26.087870	27.478127	19.5
Sluis 46 IQ	7/46	2627AB	-26.083210	27.478926	22.0
Sluis 46 IQ	8/46	2627AB	-26.086947	27.482450	22.4
Sluis 46 IQ	9/46	2627AB	-26.082088	27.483228	24.1
Sluis 46 IQ	10/46	2627AB	-26.080242	27.473956	41.1
Sluis 46 IQ	11/46	2627AB	-26.075804	27.474736	47.0
Sluis 46 IQ	12/46	2627AB	-26.077729	27.482478	36.9
Sluis 46 IQ	13/46	2627AB	-26.073035	27.483269	39.0
Sluis 46 IQ	14/46	2627AB	-26.076009	27.489179	27.8
Sluis 46 IQ	15/46	2627AB	-26.071558	27.489194	23.4
Sluis 46 IQ	16/46	2627AB	-26.070094	27.493019	21.8
Sluis 46 IQ	17/46	2627AB	-26.074422	27.494576	22.4
Sluis 46 IQ	18/46	2627AB	-26.068669	27.496651	18.8
Sluis 46 IQ	19/46	2627AB & 2627BA	-26.073049	27.498457	19.4
Sluis 46 IQ	20/46	2627AB & 2627BA	-26.067519	27.500382	22.1
Sluis 46 IQ	21/46	2627BA	-26.066292	27.504284	22.2
Sluis 46 IQ	22/46	2627BA	-26.064495	27.508052	21.3
Sluis 46 IQ	23/46	2627AB & 2627BA	-26.071266	27.503673	38.0
Sluis 46 IQ	24/46	2627AB	-26.086207	27.486684	21.4
Sluis 46 IQ	25/46	2627AB	-26.081026	27.488292	30.7
Sluis 46 IQ	26/46	2627AB	-26.085259	27.490612	20.7
Sluis 46 IQ	27/46	2627AB	-26.079639	27.492964	23.1
Sluis 46 IQ	28/46	2627AB	-26.084441	27.494460	21.9
Sluis 46 IQ	29/46	2627AB	-26.078687	27.496761	22.2
Sluis 46 IQ	30/46	2627AB & 2627BA	-26.083195	27.498984	29.5
Sluis 46 IQ	31/46	2627AB & 2627BA	-26.077041	27.501496	35.9
Sluis 46 IQ	32/46	2627BA	-26.082973	27.503456	24.9
Sluis 46 IQ	33/46	2627BA	-26.076822	27.506354	28.5
Sluis 46 IQ	34/46	2627BA	-26.081849	27.507462	22.1
Sluis 46 IQ	35/46	2627BA	-26.075896	27.510449	22.9
Sluis 46 IQ	36/46	2627BA	-26.081216	27.511179	21.4
Sluis 46 IQ	37/46	2627BA	-26.075510	27.514290	22.8
Sluis 46 IQ	38/46	2627BA	-26.080534	27.514992	22.8
Sluis 46 IQ	39/46	2627BA	-26.075129	27.518389	23.1
Sluis 46 IQ	40/46	2627BA	-26.079905	27.519061	22.3
Sluis 46 IQ	41/46	2627BA	-26.074774	27.522684	22.5
Sluis 46 IQ	42/46	2627BA	-26.079272	27.523297	21.9
Sluis 46 IQ	43/46	2627BA	-26.074374	27.527291	24.0

Property	Portion	Map Reference (1:50 000)	Lat (y)	Lon (x)	Extent (ha)
Sluis 46 IQ	44/46	2627BA	-26.078584	27.527859	22.6
Sluis 46 IQ	45/46	2627BA	-26.077468	27.533150	29.2
Sluis 46 IQ	46/46	2627BA	-26.070105	27.534399	22.7
Sluis 46 IQ	47/46	2627BA	-26.065979	27.535372	34.2
Sluis 46 IQ	48/46	2627BA	-26.070272	27.528612	21.0
Sluis 46 IQ	49/46	2627BA	-26.066095	27.530164	22.3
Sluis 46 IQ	50/46	2627BA	-26.070426	27.523618	20.6
Sluis 46 IQ	51/46	2627BA	-26.066184	27.525842	22.7
Sluis 46 IQ	52/46	2627BA	-26.065940	27.521670	23.2
Sluis 46 IQ	53/46	2627BA	-26.066143	27.517673	24.7
Sluis 46 IQ	54/46	2627BA	-26.070924	27.517940	28.9
Sluis 46 IQ	55/46	2627BA	-26.070720	27.510450	40.8
Sluis 46 IQ	56/46	2627BA	-26.065746	27.514474	23.2
Sluis 46 IQ	57/46	2627BA	-26.064946	27.511306	23.6
Sluis 46 IQ	58/46	2627BA	-26.061128	27.518050	35.0
Sluis 46 IQ	59/46	2627BA	-26.057791	27.527847	21.3
Sluis 46 IQ	60/46	2627BA	-26.061541	27.529741	25.3
Sluis 46 IQ	61/46	2627BA	-26.056363	27.532320	21.3
Sluis 46 IQ	62/46	2627BA	-26.060711	27.534080	23.6
Sluis 46 IQ	63/46	2627BA	-26.054653	27.536663	21.7
Sluis 46 IQ	64/46	2627BA	-26.058227	27.538375	37.8
Sluis 46 IQ	65/46	2627BA	-26.073650	27.531511	14.3
Sluis 46 IQ	66/46	2627BA	-26.073385	27.535156	14.3
Zuikerboschfontein 151 IQ	11/151	2627BA	-26.047883	27.515110	29.5
Zuikerboschfontein 151 IQ	12/151	2627BA	-26.052226	27.518052	29.1
Zuikerboschfontein 151 IQ	13/151	2627BA	-26.055979	27.520569	29.8
Migalsoord 152 IQ	RE/152	2627AB & 2627BA	-26.045559	27.508354	190.3
Golden Valley 621 IQ	RE/621	2627BA	-26.024174	27.506971	22.3
Golden Valley 621 IQ	1/621	2627AB	-26.045410	27.491162	21.6
Golden Valley 621 IQ	2/621	2627AB	-26.040713	27.490855	21.5
Golden Valley 621 IQ	3/621	2627AB	-26.035860	27.490794	21.5
Golden Valley 621 IQ	4/621	2627AB	-26.031583	27.491094	21.7
Golden Valley 621 IQ	5/621	2627AB	-26.027916	27.491118	21.5
Golden Valley 621 IQ	8/621	2627AB & 2627BA	-26.023736	27.500037	21.1
Golden Valley 621 IQ	9/621	2627AB & 2627BA	-26.025299	27.502682	22.0
Golden Valley 621 IQ	11/621	2627BA	-26.023609	27.510416	21.7
Golden Valley 621 IQ	13/621	2627BA	-26.021541	27.518130	21.4
Golden Valley 621 IQ	14/621	2627BA	-26.022636	27.523213	24.0
Golden Valley 621 IQ	15/621	2627BA	-26.022007	27.527110	24.3
Golden Valley 621 IQ	16/621	2627BA	-26.021063	27.533087	24.1
Golden Valley 621 IQ	17/621	2627BA	-26.022574	27.539122	21.8
Golden Valley 621 IQ	18/621	2627BA	-26.024109	27.534653	21.2
Golden Valley 621 IQ	19/621	2627BA	-26.025770	27.530392	21.4
Golden Valley 621 IQ	20/621	2627BA	-26.027287	27.526215	21.3
Golden Valley 621 IQ	23/621	2627BA	-26.027903	27.510688	21.1
Golden Valley 621 IQ	24/621	2627BA	-26.029272	27.506556	21.2
Golden Valley 621 IQ	25/621	2627BA	-26.032881	27.509054	21.9
Golden Valley 621 IQ	26/621	2627BA	-26.031184	27.513191	21.9
Golden Valley 621 IQ	27/621	2627BA	-26.030780	27.517854	21.4
Golden Valley 621 IQ	28/621	2627BA	-26.029107	27.522145	22.6
Golden Valley 621 IQ	29/621	2627BA	-26.033023	27.524057	21.4
Golden Valley 621 IQ	30/621	2627BA	-26.031120	27.528163	21.6

Property	Portion	Map Reference (1:50 000)	Lat (y)	Lon (x)	Extent (ha)
Golden Valley 621 IQ	31/621	2627BA	-26.029536	27.532462	21.4
Golden Valley 621 IQ	32/621	2627BA	-26.027873	27.536684	22.4
Golden Valley 621 IQ	33/621	2627BA	-26.026487	27.540987	22.1
Golden Valley 621 IQ	34/621	2627BA	-26.030384	27.542983	21.8
Golden Valley 621 IQ	35/621	2627BA	-26.031812	27.538650	21.7
Golden Valley 621 IQ	36/621	2627BA	-26.033347	27.534386	21.5
Golden Valley 621 IQ	37/621	2627BA	-26.034878	27.530075	21.5
Golden Valley 621 IQ	38/621	2627BA	-26.036769	27.525416	21.2
Golden Valley 621 IQ	39/621	2627BA	-26.038879	27.521508	22.5
Golden Valley 621 IQ	40/621	2627BA	-26.034572	27.519740	21.5
Golden Valley 621 IQ	41/621	2627BA	-26.038747	27.517440	22.1
Golden Valley 621 IQ	42/621	2627BA	-26.035279	27.514232	21.2
Golden Valley 621 IQ	43/621	2627BA	-26.037650	27.511487	23.4
Golden Valley 621 IQ	44/621	2627BA	-26.041914	27.516242	22.3
Golden Valley 621 IQ	45/621	2627BA	-26.044638	27.519204	22.0
Golden Valley 621 IQ	46/621	2627BA	-26.042211	27.524369	21.3
Golden Valley 621 IQ	47/621	2627BA	-26.040244	27.528130	21.5
Golden Valley 621 IQ	48/621	2627BA	-26.038704	27.531915	21.6
Golden Valley 621 IQ	49/621	2627BA	-26.037200	27.536182	21.2
Golden Valley 621 IQ	50/621	2627BA	-26.035633	27.540518	21.7
Golden Valley 621 IQ	51/621	2627BA	-26.034255	27.544876	21.1
Golden Valley 621 IQ	52/621	2627BA	-26.038074	27.546773	21.3
Golden Valley 621 IQ	53/621	2627BA	-26.039426	27.542383	21.7
Golden Valley 621 IQ	54/621	2627BA	-26.041010	27.538079	21.6
Golden Valley 621 IQ	55/621	2627BA	-26.042590	27.533841	21.7
Golden Valley 621 IQ	56/621	2627BA	-26.044342	27.528405	21.6
Golden Valley 621 IQ	57/621	2627BA	-26.046831	27.521754	23.0
Golden Valley 621 IQ	58/621	2627BA	-26.050400	27.522531	21.6
Golden Valley 621 IQ	59/621	2627BA	-26.049032	27.526618	22.1
Golden Valley 621 IQ	60/621	2627BA	-26.047092	27.530579	21.7
Golden Valley 621 IQ	61/621	2627BA	-26.046395	27.535777	21.4
Golden Valley 621 IQ	62/621	2627BA	-26.044795	27.540085	21.4
Golden Valley 621 IQ	63/621	2627BA	-26.043232	27.544326	21.3
Golden Valley 621 IQ	64/621	2627BA	-26.041908	27.548649	21.2
Golden Valley 621 IQ	65/621	2627BA	-26.045707	27.550552	21.1
Golden Valley 621 IQ	66/621	2627BA	-26.047115	27.546307	21.5
Golden Valley 621 IQ	67/621	2627BA	-26.048597	27.542043	21.9
Golden Valley 621 IQ	68/621	2627BA	-26.050127	27.537673	21.4
Golden Valley 621 IQ	69/621	2627BA	-26.050751	27.533435	22.2
Golden Valley 621 IQ	70/621	2627BA	-26.052682	27.529794	22.3
Golden Valley 621 IQ	71/621	2627BA	-26.054085	27.525571	21.2
Rietpoort 395 JQ	3/395	2527CD & 2627AB	-25.981113	27.461320	156.2
Rietpoort 395 JQ	4/395	2527CD & 2627AB	-25.980552	27.469245	144.6
Rietpoort 395 JQ	8/395	2627AB	-26.005047	27.467427	3.0
Rietpoort 395 JQ	9/395	2627AB	-26.006276	27.466592	5.6
Rietpoort 395 JQ	11/395	2627AB	-26.005258	27.462548	8.7
Rietpoort 395 JQ	15/395	2627AB	-26.004857	27.460515	9.0
Rietpoort 395 JQ	16/395	2627AB	-26.004434	27.458508	12.1
Rietpoort 395 JQ	17/395	2627AB	-26.004234	27.456116	15.1
Rietpoort 395 JQ	18/395	2627AB	-26.003753	27.453692	16.4
Rietpoort 395 JQ	21/395	2527CD	-25.979230	27.476343	98.4
Rietpoort 395 JQ	22/395	2527CD & 2627AB	-25.996772	27.460056	25.7

Property	Portion	Map Reference (1:50 000)	Lat (y)	Lon (x)	Extent (ha)
Rietpoort 395 JQ	23/395	2527CD	-25.986302	27.462107	25.7
Rietpoort 395 JQ	25/395	2527CD	-25.994505	27.470007	21.5
Rietpoort 395 JQ	26/395	2527CD	-25.996962	27.469174	21.7
Rietpoort 395 JQ	27/395	2527CD & 2627AB	-26.000803	27.466161	21.5
Rietpoort 395 JQ	28/395	2527CD & 2627AB	-26.001624	27.468940	21.4
Rietpoort 395 JQ	29/395	2627AB	-26.005610	27.464505	5.1
Rietpoort 395 JQ	30/395	2527CD & 2627AB	-26.000297	27.457257	4.0
Vaalbank 512 JQ	61/512	2527CD & 2627AB	-26.001644	27.472551	34.2
Vaalbank 512 JQ	62/512	2527CD & 2627AB	-26.001259	27.476488	37.6
Vaalbank 512 JQ	106/512	2627AB	-26.005565	27.481562	17.8
Vaalbank 512 JQ	107/512	2627AB	-26.006607	27.472423	14.9

The study area is located roughly 2.5 km southwest of Magaliesburg, 26 km west of Krugersdorp and 30 km north-northeast of Carletonville. The study area falls within the Mogale City Local Municipality and the West Rand District Municipality in the Gauteng Province. The R24 primary road runs northwest-southeast approximately 2 km to the northeast of the proposed study area, while the R509 and R500 secondary roads respectively intersect the northern and western sections of the study area.

In terms of vegetation, the southern section of the study area falls within the Grassland Biome, Dry Highveld Grassland Bioregion and the Carletonville Dolomite Grassland vegetation unit. The remaining area falls within the Savanna Biome, Central Bushveld Bioregion and is divided between Gauteng Shale Mountain Bushveld, Moot Plains Bushveld and Gold Reef Mountain Bushveld (Mucina & Rutherfords 2006).

Carletonville Dolomite Grassland is found in the North West and Gauteng Provinces and marginally in the Free State Province. Areas include Potchefstroom, Ventersdorp and Carletonville, but also extends to Ottoshoop in the west and Centurion and Bapsfontein in the east. Carletonville Dolomite Grassland is considered vulnerable with a conservation target of 24%. A small area is conserved in statutory and in several private conservation areas. Roughly a quarter of this vegetation unit has been transformed for cultivation, by urban sprawl, or mining activities, as well as by the building of the Boskop and Klerkskraal Dams. Erosion varies between low and very low for this vegetation unit (Mucina & Rutherfords 2006).

Gauteng Shale Mountain Bushveld occurs in the Gauteng and North West Provinces and mainly on the ridge of the Gatsrand south of Carletonville-Westonaria-Lenasia. A narrow band also runs from between Tarlton and Magaliesberg in the west, through Sterkfontein, Pelindaba and Atteridgeville to Klapperkop and south-eastern Pretoria in the east. Gauteng Shale Mountain Bushveld is considered vulnerable and has a conservation target of 24%. Approximately 2% is conserved in nature reserves, while about 21% has been has been transformed mainly by urban and built-up areas, mines and quarries, cultivation and plantations. Wattles is a common invasive plant species and erosion ranges between low and very low (Mucina & Rutherfords 2006).

Moot Plains Bushveld is associated with the Gauteng and North West Provinces. The main belt occurs immediately south of the Magaliesberg from the Selons River Valley in the west through Maanhaarrand, filling the valley bottom of the Magalies River, proceeding east of the Hartebeestpoort Dam between the Magaliesberg and Daspoort mountain ranges to Pretoria. A narrow belt also occurs immediately north of the Magaliesberg from Rustenburg in the West to just east of the Crocodile River in the east. Moot Plains Bushveld is considered vulnerable with a conservation target of 19%. Some 13% is statutorily conserved mainly in the Magaliesberg Nature Reserve Area, while about 28% is transformed mainly by cultivation and urban and built-up areas. Very scattered occurrences of alien vegetation are found while erosion varies between very low and low (Mucina & Rutherfords 2006).

Gold Reef Mountain Bushveld is distributed between the North West, Gauteng, Mpumalanga and Free State Provinces. This vegetation unit is associated with the rocky quartzite ridges of the Magaliesberg, as well as the parallel ridge to the south from Koster in the west to Bronkhorstspruit in the east. The vegetation unit also includes the west-east ridge of the Witwatersrand from Krugersdorp to Bedfordview. Inner ridges of the Vredefort Dome and part of the Suikerbosrand are included as well. Gold Reef Mountain Bushveld is considered to be least threatened with a conservation target of 24%. About 22% is statutorily conserved in the Magaliesberg Nature Reserve and other nature reserves such as Rustenburg, Wonderboom and Suikerbosrand. Roughly 15% has been transformed by cultivation and urban built-up areas. Some alien vegetation species occur along drainage lines and erosion vary between low and very low (Mucina & Rutherfords 2006)

The average elevation for Carletonville Dolomite Grassland ranges from 1360 to 1620 MASL (Metres Above Sea Level), Gauteng Shale Mountain Bushveld from 1300 to 1750 MASL, Moot Plains Bushveld from 1050 to 1450 MASL and Gold Reef Mountain Bushveld from 1200 to 1750 MASL (Mucina & Rutherfords 2006). The average elevation of the project area is 1650 MASL and is associated with mountainous terrain.

The study area falls within the summer rainfall region and the average annual rainfall is roughly 751 mm per year. The average annual temperature is 16.9 ºC. The average summer temperature is 20.8 ºC, while the average winter temperature averages 10.5 ºC (Climate-data.org accessed 15/04/2021).

The majority of the study area falls within the A21F quaternary catchment, while a small section intersecting the farms Kaalfontein 44 IQ & Sluis 46 IQ to the south intersects C23E. Quaternary catchment A21F falls within the Crocodile West and Marico WMA (Water Management Area) and C23E within the Vaal WMA. The closest perennial rivers to the study area are the Magalies River that flows approximately 2 km to the northeast of the study area, and the Bloubank River that intersects the farms Kaalfontein 44 IQ, Koestersfontein 45 IQ and Zuikerboschfontein 151 IQ. The Bloubank River flows west-east and divides the study aera into a northern and southern section. Several non-perennial offshoots and minor dams are associated with the demarcated study area as well.

When the general environment is considered, the study area appears to be associated with crop cultivation and grazing veldt for cattle. Access to the farm portions appear to be through the R500 and R509 secondary roads, as well as local farm roads (**Figures 2 & 3**).

Topographical maps dating to 1938, 1943, 1944, 1957, 1968, 1975, 1976, 2006 and 2010 (**Figure 2 & Appendix A**) show that in terms of cultivation, the demarcated study areas experienced an increase in cultivated fields. Mining activity is also indicated as early as 1944.

2.2 Project description

The prospecting right application for gold covers about 6443 ha (**Figures 2 & 3)**. For the prospecting phase, however, several sites will be selected for geotechnical drilling. These boreholes and its associated activities will impact on a surface area of between 250 and 625 m². The full extent of the drill site will also be demarcated and no drilling will be done outside of the boundary.

Prospecting activities will include the following:

Current access roads will be used as far as possible, but in cases where access roads to drill sites do not exist, a single track will be selected based on the area where the least environmental impact will occur. The same tracks will be used should repeated access be required. Vegetation and topsoil excavated during the drilling process will be stockpiled next to sumps where it will serve as a storm water diversion berm. On completion of the drilling process, the rehabilitated sumps will be backfilled with the stockpiled material. Because a constant water supply is needed for the drilling process, 15 000l will be stored in tanks. The plastic-lined sumps will be used to recycle water through a filter process in order to maintain a constant clean water source for the purpose of drilling. In terms of potable water for employees and workers, a temporary 260l tank will be placed on-site. Additional facilities will include temporary portable toilets, berms, and a maximum of 60m³ of diesel fuel located on an impermeable surface with bunds.

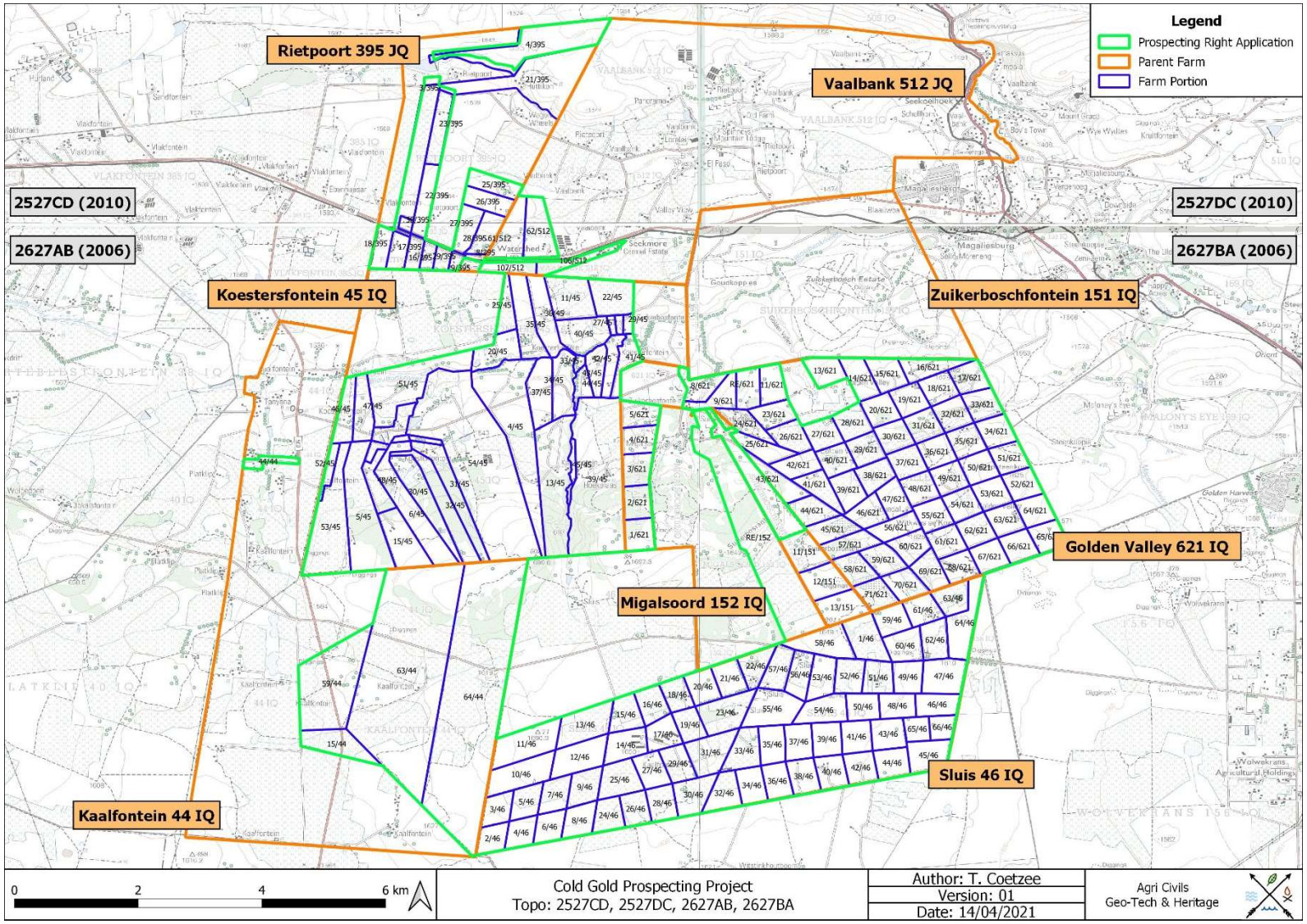

Figure 2: Segments of SA 1: 50 000 2527CD, 2527DC, 2627AB and 2627BA indicating the study area.

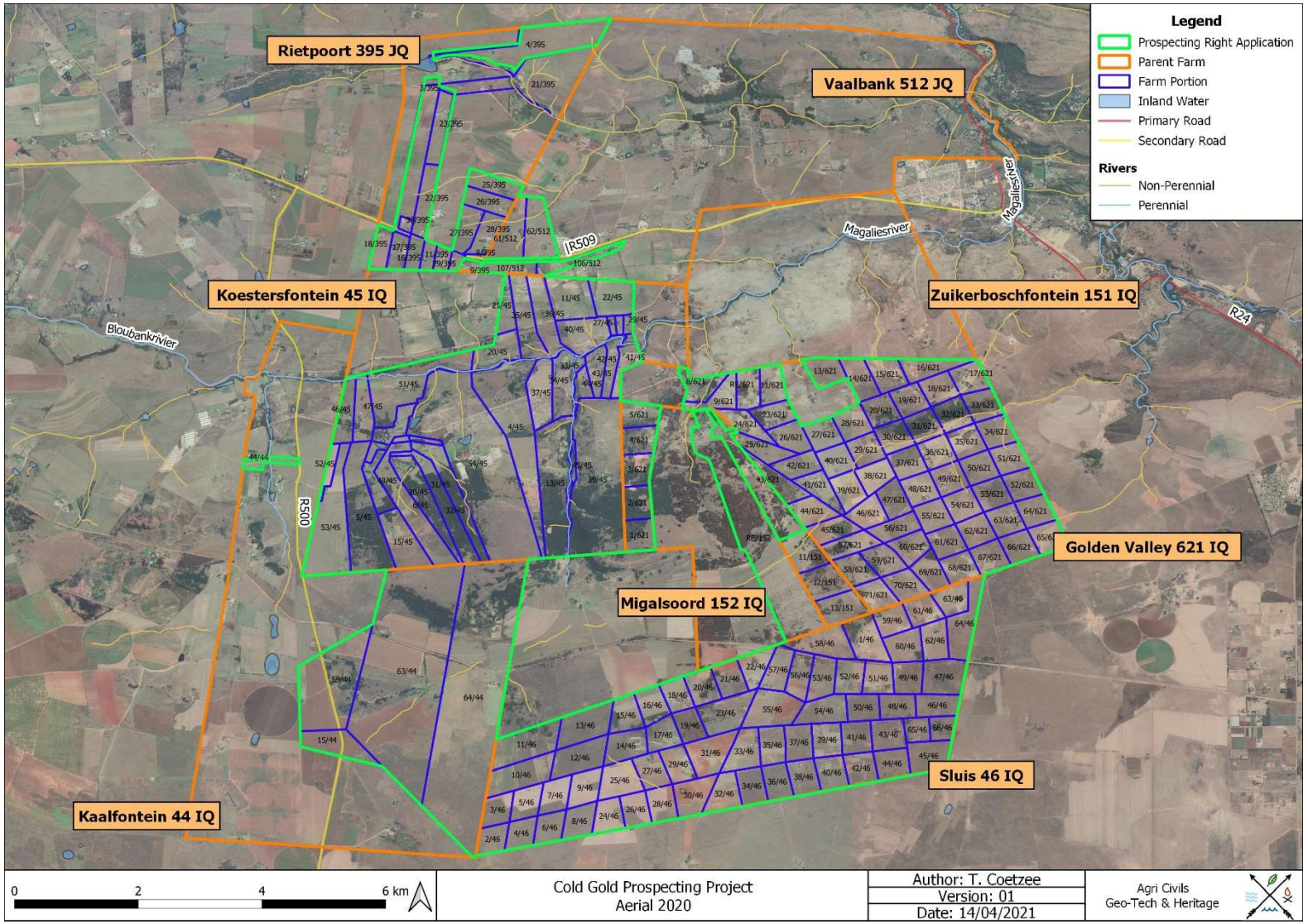

Figure 3: Proposed prospecting area portrayed on a 2020 aerial backdrop.

3. Archaeological Background

Southern African archaeology is broadly divided into the Early, Middle and Later Stone Ages; Early, Middle and Later Iron Ages; and Historical or Colonial Periods. This section of the report provides a general background to archaeology in South Africa.

3.1 The Stone Age

The earliest stone tool industry, the Oldowan, was developed by early human ancestors which were the earliest members of the genus *Homo,* such as *Homo habilis*, around 2.6 million years ago. It comprises tools such as cobble cores and pebble choppers (Toth & Schick 2007). Archaeologists suggest these stone tools are the earliest direct evidence for culture in southern Africa (Clarke & Kuman 2000). The advent of culture indicates the advent of more cognitively modern hominins (Mitchell 2002: 56, 57).

The Acheulean industry completely replaced the Oldowan industry. The Acheulian industry was first developed by *Homo ergaster* between 1.8 to 1.65 million years ago and lasted until around 300 000 years ago. Archaeological evidence from this period is also found at Swartkrans, Kromdraai and Sterkfontein. The most typical tools of the ESA (Early Stone Age) are handaxes, cleavers, choppers and spheroids. Although hominins seemingly used handaxes often, scholars disagree about their use. There are no indications of hafting, and some artefacts are far too large for it. Hominins likely used choppers and scrapers for skinning and butchering scavenged animals and often obtained sharp ended sticks for digging up edible roots. Presumably, early humans used wooden spears as early as 5 million years ago to hunt small animals.

Middle Stone Age (MSA) artefacts started appearing about 250 000 years ago and replaced the larger Early Stone Age bifaces, handaxes and cleavers with smaller flake industries consisting of scrapers, points and blades. These artefacts roughly fall in the 40-100 mm size range and were, in some cases, attached to handles, indicating a significant technical advance. The first *Homo sapiens* species also emerged during this period. Associated sites are Klasies River Mouth, Blombos Cave and Border Cave (Deacon & Deacon 1999).

Although the transition from the Middle Stone Age to the Later Stone Age (LSA) did not occur simultaneously across the whole of southern Africa, the Later Stone Age ranges from about 20 000 to 2000 years ago. Stone tools from this period are generally smaller, but were used to do the same job as those from previous periods; only in a different, more efficient way. The Later Stone Age is associated with: rock art, smaller stone tools (microliths), bows and arrows, bored stones, grooved stones, polished bone tools, earthenware pottery and beads. Examples of Later Stone Age sites are Nelson Bay Cave, Rose Cottage Cave and Boomplaas Cave (Deacon & Deacon 1999). These artefacts are often associated with rocky outcrops or water sources. **Figures 4 – 6** below shows examples of stone tools often associated with the ESA, MSA and LSA of southern Africa.

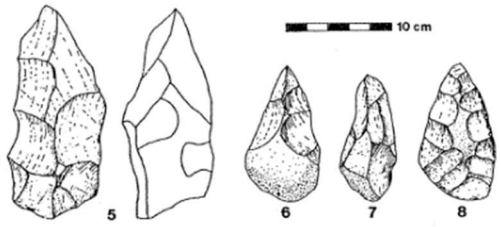

Figure 4: ESA artefacts from Sterkfontein (Volman 1984).

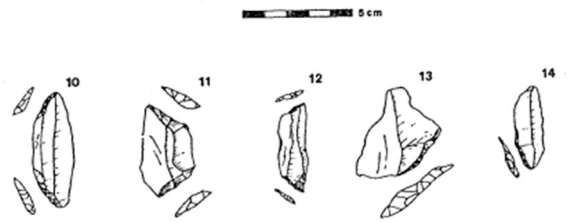

Figure 5: MSA artefacts from Howiesons Poort (Volman 1984).

Figure 6: LSA scrapers (Klein 1984).

3.2 The Iron Age & Historical Period

The Early Iron Age marks the movement of farming communities into South Africa in the first millennium AD, or around 2500 years ago (Mitchell 2002:259, 260). These groups were agro-pastoralist communities that settled in the vicinity of water in order to provide subsistence for their cattle and crops. Archaeological evidence from Early Iron Age sites is mostly artefacts in the form of ceramic assemblages. The origins and archaeological identities of this period are largely based upon ceramic typologies. Some scholars classify Early Iron Age ceramic traditions into different "streams" or "trends" in pot types and decoration, which emerged over time in southern Africa. These "streams" are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). Early Iron Age ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. This period continued until the end of the first millennium AD (Mitchell 2002; Huffman 2007). Some well-known Early Iron Age sites include the Lydenburg Heads in Mpumalanga, Happy Rest in the Limpopo Province and Mzonjani in Kwa-Zulu Natal.

The Middle Iron Age roughly stretches from AD 900 to 1300 and marks the origins of the Zimbabwe culture. During this period cattle herding appeared to play an increasingly important role in society. However, it was proved that cattle remained an important source of wealth throughout the Iron Age. An important shift in the Iron Age of southern Africa took place in the Shashe-Limpopo basin during this period, namely the development of

class distinction and sacred leadership. The Zimbabwe culture can be divided into three periods based on certain capitals. Mapungubwe, the first period, dates from AD 1220 to 1300, Great Zimbabwe from AD 1300 to 1450, and Khami from AD 1450 to 1820 (Huffman 2007: 361, 362).

The Late Iron Age (LIA) roughly dates from AD 1300 to 1840. It is generally accepted that Great Zimbabwe replaced Mapungubwe. Some characteristics include a greater focus on economic growth and the increased importance of trade. Specialisation in terms of natural resources also started to play a role, as can be seen from the distribution of iron slag which tend to occur only in certain localities compared to a wide distribution during earlier times. It was also during the Late Iron Age that different areas of South Africa were populated, such as the interior of KwaZulu Natal, the Free State, the Gauteng Highveld and the Transkei. Another characteristic is the increased use of stone as building material. Some artefacts associated with this period are knife-blades, hoes, adzes, awls, other metal objects as well as bone tools and grinding stones.

The Historical period mainly deals with Europe's discovery, settlement and impact on southern Africa. Some topics covered by the Historical period include Dutch settlement in the Western Cape, early mission stations, Voortrekker routes and the Anglo Boer War. This time period also saw the compilation of early maps by missionaries, explorers, military personnel, etc.

3.2.1 General History

Henry Lewis, an Australian prospector who is generally credited with discovering the first quartz gold in the Witwatersrand area, announced the discovery of gold in 1874 on the Farm Blaauwbank that is located approximately 3 km northeast of the proposed Cold Gold Project area. On 28 January 1875 Albert Broderick, a Pretoria storekeeper, took the lead in the establishment of the Nil Desperandum Cooperative Quartz Company, but was unsuccessful as the company lasted only 14 years (Shorten 1970, cited in Birkholtz 2006).

Hind's Store, a store that became significant during the Jameson Raid of 1895-6, appears to be located in the general study area. Although some discrepancy exists, it is possible that the store was located either on the Farm Blaauwbank or Steenkoppie. The store is regarded as Dr Leaner Starr Jamesons' last halting place before reaching Krugersdorp. Prior to the raid, Dr Henry Wolf established resting stops all along Jameson's intended route to Johannesburg. The column consisted of 350 volunteers and 150 members of the Bechaunaland Border Police. Upon nearing Hind's store, scouts realised they were surrounded by Boer Commando's. The column surprised the Boers, who retreated to Krugersdorp. The column reached the store at 13:30 on 1 January 1896, but found few supplies left in the store. After resting for an hour and a half the column continued to Krugersdorp, where the fist battle of the raid took place a short distance to the northwest of Krugersdorp (Birkholtz 2006).

Thomas Hinds was a burger of the Zuid-Afrikaansche Republiek and fought on the side of the Boers during the initial stages of the South African War (1899 – 1902). However, in June 1899 he surrendered, received a protection pass and continued to live at the store until January 1901 when he was ordered to move to Krugersdorp. During his stay at the store the British, as well as the Boers, frequented him to obtain forage (Birkholtz 2006).

During the South African War, several battles and skirmishes took place in the general area. The most noteworthy of these is the Battle of Nooitgedacht that took place on 13 December 1900. The battel saw the Boer commandos of De La Rey, Beyers and Kemp clash with Major-General R.A.P. Clement. Clement and his 1500 men camped at the southern foot of the Magaliesberg mountain on the farm Nooitgedacht. The signalling corps posted to the top of the mountain were overrun by the commandos which resulted in Clement ordering retreat to a nearby hill known as Vaalkop or Yeomanry Hill and successfully defended it. From here Clement moved back to Pretoria (Carruthers 2000 cited in Fourie 2006). According to Grant (1910, cited in Fourie 2006), 74 British soldiers were killed, 186 were wounded and 368 were missing or taken prisoner. On the Boers side between 15 and 30 were killed and between 46 and 61 wounded (Oosthuizen 1949, cited in Birkholtz 2006).

According to the Archival Study done by Birkholtz (2006), the possibility exists that David Beresford Pratt's house and property might be located in the vicinity of the project area. David Beresford Pratt is known for the attempt on Prime Minister H.F. Verwoerd's life on 9 April 1960 during a speech at the Rand Easter Show. Pratt fired two rounds at the Prime Minister, was arrested and declared mentally disordered and epileptic. Pratt eventually hanged himself in the Oranje Mental Hospital on his 52nd Birthday (1 October 1961). According to the study, Pratt owned two undivided half-shares of the Farm Steenkoppie. The one half-share was obtained from the Arthur Pratt Trust under Deed of Sale, while the second was comprised of a certain remaining extent of a portion of the Freehold Farm Steenkoppie, a certain portion 2 of Portion C of quitrent Farm Delarey and the Remaining Extent of a Portion called "Rietfontein" on the Freehold Farm Steenkoppie.

Another prominent feature in the general area is the railway line running in an east-west direction. According to Birkholtz (2006) the railway line was constructed between 1902/1903 and 1913. Accordingly, the line forms part of the Krugersdorp – Zeerust line that was constructed to serve the needs of farmers in the Zeerust and Rustenburg areas to provide ease of access to the Witwatersrand markets.

The area was also associated with tobacco factories. The fist tobacco factory was established in the 1870s on the farm Blaauwbank by J. & J. Jennings. Shortly afterwards another tobacco factory was established on the farm Vaalbank by F. H. Hartley. Frederick Beer took over the factory in 1891, renamed it to 'The Orient Magaliesberg Tobacco Company' and eventually moved the operation to the Farm Steenkoppie. In 1905 the tobacco was so popular that it was transported across South Africa, as well as to England, Europe, Australia and other British Colonies (Birkholtz 2006).

3.2.2 Examples of heritage sites often encountered

Figures 7 – 14 are examples of some heritage sites often encountered – such areas should be avoided.

Figure 7: Example of undecorated potsherds.

Figure 8: Example of a decorated potsherd.

Figure 9: Example of a potential granary base.

Figure 10: Example of a stone-walled site.

Figure 11: Example of a broken lower grinding stone.

Figure 12: Example of a dilapidated stone-walled site.

Figure 13: Example of a historical building.

Figure 14: Example of a potential informal grave.

3.3 Previous Heritage Studies

Blaauwbank Historic Gold Mine, Magaliesburg

A Heritage Scoping Study was conducted by Matakoma Consultants on the farm Suikerboschfontein 151 IR near Magaliesburg for a mining and tourism project. The study area borders the proposed Cold Gold Prospecting Project to the northeast. During the survey, several sites of heritage significance were observed. These include circular and angular stone-walled remains that likely date to the 1890s and the early mining days, old mine shafts, as well as stone cairns that could indicate graves (Fourie 2002).

Maloney's Eye 169 IQ and Steenkoppie 153 IQ

A Heritage Impact Assessment (HIA) was done for the development of a low to medium density estate on the farm Maloney's Eye 169 IQ and Steenkoppie 153 IQ. The demarcated impact area was approximately 600 ha and borders the proposed Cold Gold project to the east. The study recorded 16 sites of cultural significance. These include one stone age site, one Iron Age site, two cemeteries and 13 sites or clusters of historical structures (Fourie 2006).

Kruitfontein 511 JQ

A Phase 1 Heritage Impact Assessment was conducted for the access road on portions 11, the Remaining Extent of Portion 12, the Remaining Extent of Portion 13 and portions of Portion 24 and 74 of the Farm Kruitfontein 511 JQ (Marais 2018). The Kruitfontein project is located roughly 3.5 km north-northeast of the proposed Cold Gold Prospecting Project study area concerned in this report. The study identified three cemeteries and structures older than 60 years.

4. Evaluation

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

A fundamental aspect in the conservation of a heritage resource relates to whether the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. There are many aspects that must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and if appropriate mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed.

5. Statement of Significance & Recommendations

5.1 Statement of significance

The study area: Select portions of the Farms Farms Golden Valley 621 IQ, Kaalfontein 44 IQ, Koestersfontein 45 IQ, Migalsoord 152 IQ, Rietpoort 395 JQ, Sluis 46 IQ, Vaalbank 512 JQ and Zuikerboschfontein 151 IQ, Magaliesburg, Gauteng

As can be seen from previous research done in the area, the general region is significant from a heritage perspective. Heritage sites are likely to include cemeteries/graves, Stone Age Sites, Iron Age and historical sites. Since gold mining can be dated to at least 1874 on the Farm Blaauwbank that is located approximately 1.8 km to the northeast of the study area, it can be assumed that similar mining activities took place in the general area during the same time. Remnants of the South African War of 1899 – 1902 are also likely to be encountered within the study area. Since heritage sites, such as burial sites, are not always clearly identifiable due to disturbed/removed surface features, care must be exercised when prospecting.

The **Appendix A** figures indicate the study area on 1938, 1943, 1944, 1957, 1968, 1975, 1976, 2006 and 2010 topographical maps, as well as on 1961 aerial images. **Table 2** lists the 148 potential sites and sensitive areas, type of site, location, estimated extent and current status as observed on recent aerial imagery. **Figures 15 & 16** indicate the identified potential sites on a 2020 aerial backdrop, while hills and areas surrounding water sources that are often associated with archaeological sites, are indicated on **Figure 17**. **Figure 18** shows the potential sites classified according to sites that appear to be associated with surface remains and those that appear to be demolished. It should also be noted that the 'mining' category in **Figures 15 & 16** consists of early mines, as well as prospecting pits. The 'building' category includes any building, school, shop etc., while 'structures' refer to any other form of construction such as windmills and kraals.

Table 2 and Figures 15 & 16 show that 98 buildings or clusters of buildings were identified, 38 which appear to have been demolished. Two locations associated with graves or cemeteries were identified, one of which surface remains appear to be present.

Twenty-three areas associated with huts were identified, while only three areas appear to be associated with surface remains.

Seven areas show the presence of historical mining activity. Only one of these areas shows the presence of surface remains.

In eight instances historical topographical maps indicate the presence of ruins. On contemporary aerial imagery, however, surface remains are visible at two sites only.

The 10 instances where structures were identified on historical data sources appear to have been demolished as these areas are associated with cultivated fields or open veldt.

The identified sites dating to 1938, 1944, 1957 and 1961 exceed 60 years of age and are therefore protected by the NHRA 25 of 1999. The sites dating to 1975 and 1976 might not be visible on earlier data sources, which means that these sites might exceed 60 years as well. It should also be noted that demolished sites might be associated with surface/subsurface cultural material remains and would be protected by the NHRA 25 of 1999 as well.

Table 2: Potential site location.

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B001	Building - 1961	Rietpoort 395 JQ	26/395; 27/395	Demolished	2.89	27.466139	-25.998162
B002	Hut - 1938	Rietpoort 395 JQ	16/395	Surface remains	3.09	27.457652	-26.005154
B003	Building - 1938	Rietpoort 395 JQ	16/395; 15/395	Surface remains	1.48	27.459910	-26.004954
B004	Building - 1938	Vaalbank 512 JQ	106/512	Surface remains	1.04	27.481968	-26.005417
B005	Building - 1938	Vaalbank 512 JQ	106/512	Surface remains	6.21	27.486346	-26.003903
B006	Building - 1938	Koestersfontein 45 IQ	35/45; 25/45	Surface remains	2.58	27.471984	-26.009321
B007	Building - 1938	Koestersfontein 45 IQ	36/45	Surface remains	1.17	27.477205	-26.013218
B008	Hut - 1938	Koestersfontein 45 IQ	36/45	Demolished	1.36	27.478251	-26.014598
B009	Building - 1938	Koestersfontein 45 IQ	40/45	Surface remains	2.32	27.480703	-26.015307
B010	Building - 1938	Koestersfontein 45 IQ	40/45; 27/45	Surface remains	1.19	27.487086	-26.014221
B011	Hut - 1938	Koestersfontein 45 IQ	29/45; 22/45	Demolished	0.95	27.490074	-26.013468
B012	Building - 1938	Koestersfontein 45 IQ	42/45; 41/45	Surface remains	1.31	27.487952	-26.017948
B013	Building - 1938	Koestersfontein 45 IQ	41/45	Surface remains	1.71	27.490039	-26.020057
B014	Building - 1938	Koestersfontein 45 IQ	42/45; 41/45	Surface remains	1.52	27.487764	-26.019265
B015	Building - 1938	Koestersfontein 45 IQ	43/45	Surface remains	3.95	27.484937	-26.019672
B016	Structure - 1938	Koestersfontein 45 IQ	42/45; 41/45	Demolished	1.43	27.487590	-26.020361
B017	Building - 1938	Koestersfontein 45 IQ	34/45	Surface remains	2.81	27.480557	-26.020051
B018	Ruin - 1938	Koestersfontein 45 IQ	44/45	Surface remains	1.17	27.483183	-26.022820
B019	Hut - 1938	Koestersfontein 45 IQ	39/45; 43/45; 42/45	Demolished	1.23	27.485832	-26.025417
B020	Hut - 1938	Koestersfontein 45 IQ	35/45	Demolished	1.68	27.475066	-26.019237
B021	Building - 1938	Koestersfontein 45 IQ	4/45	Surface remains	2.37	27.472386	-26.021577

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B022	Building - 1938	Koestersfontein 45 IQ	20/45	Surface remains	2.30	27.468835	-26.019966
B023	Building - 1938	Koestersfontein 45 IQ	4/45	Surface remains	0.97	27.468053	-26.022442
B024	Building - 1938	Koestersfontein 45 IQ	54/45	Demolished	7.14	27.462590	-26.025914
B025	Building - 1938	Koestersfontein 45 IQ	51/45	Surface remains	6.52	27.456657	-26.023640
B026	Building - 1938	Koestersfontein 45 IQ	51/45; 5/45	Surface remains	1.06	27.455887	-26.028937
B027	Building - 1938	Koestersfontein 45 IQ	51/45	Demolished	1.47	27.454125	-26.029135
B028	Building - 1938	Koestersfontein 45 IQ	51/45	Demolished	0.80	27.453121	-26.028010
B029	Building - 1938	Koestersfontein 45 IQ	47/45	Surface remains	1.63	27.450425	-26.028864
B030	Hut - 1938	Koestersfontein 45 IQ	54/45	Demolished	1.53	27.463118	-26.029953
B031	Building - 1938	Koestersfontein 45 IQ	6/45; 30/45	Surface remains	2.68	27.456168	-26.035551
B032	Building - 1938	Koestersfontein 45 IQ	6/45	Surface remains	0.99	27.455141	-26.037202
B033	Building - 1938	Koestersfontein 45 IQ	54/45	Surface remains	2.66	27.465443	-26.034166
B034	Hut - 1938	Koestersfontein 45 IQ	32/45	Demolished	1.31	27.461913	-26.036907
B035	Building - 1938	Koestersfontein 45 IQ	53/45; 52/45	Surface remains	2.55	27.445757	-26.038526
B036	Building - 1938	Koestersfontein 45 IQ	5/45	Demolished	0.89	27.448207	-26.039321
B037	Building - 1938	Koestersfontein 45 IQ	6/45; 48/45	Demolished	1.31	27.455183	-26.040029
B038	Building - 1938	Koestersfontein 45 IQ	32/45	Surface remains	1.58	27.459525	-26.034260
B039	Ruin - 1938	Koestersfontein 45 IQ	37/45	Surface remains	1.49	27.477748	-26.028464
B040	Building - 1938	Koestersfontein 45 IQ	13/45	Demolished	1.38	27.477749	-26.037650
B041	Building - 1938	Koestersfontein 45 IQ	13/45	Surface remains	2.03	27.480486	-26.035630
B042	Building - 1938	Koestersfontein 45 IQ	39/45; 45/45	Surface remains	1.08	27.481987	-26.037100
B043	Hut - 1938	Golden Valley 621 IQ	4/621	Surface remains	1.09	27.493128	-26.032012
B044	Ruin - 1938	Kaalfontein 44 IQ	64/44	Demolished	1.74	27.467708	-26.061554
B045	Structure - 1938	Kaalfontein 44 IQ	59/44	Demolished	1.74	27.447571	-26.062297
B046	Ruin - 1938	Kaalfontein 44 IQ	63/44; 59/44	Demolished	1.12	27.449395	-26.068955
B047	Hut - 1938	Kaalfontein 44 IQ	59/44	Demolished	1.48	27.449312	-26.065721
B048	Ruin - 1938	Kaalfontein 44 IQ	59/44	Demolished	1.18	27.446912	-26.067552
B049	Hut - 1938	Kaalfontein 44 IQ	59/44	Demolished	1.14	27.447117	-26.066479
B050	Building - 1938	Kaalfontein 44 IQ	63/44	Surface remains	1.74	27.458373	-26.067893
B051	Structure - 1938	Kaalfontein 44 IQ	63/44	Demolished	1.71	27.460320	-26.065618
B052	Building - 1938	Kaalfontein 44 IQ	63/44; 59/44	Demolished	1.15	27.449763	-26.070033
B053	Building - 1938	Kaalfontein 44 IQ	64/44	Demolished	1.67	27.468296	-26.068402
B054	Ruin - 1938	Kaalfontein 44 IQ	64/44	Demolished	1.30	27.467984	-26.070140

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B055	Hut - 1938	Sluis 46 IQ	17/46; 19;/46; 29/46; 31/46	Surface remains	4.53	27.496644	-26.075561
B056	Hut - 1938	Sluis 46 IQ	13/46; 15/46	Demolished	1.80	27.487316	-26.071405
B057	Hut - 1938	Sluis 46 IQ	16/46; 17/46	Demolished	2.01	27.494297	-26.071947
B058	Ruin - 1938	Sluis 46 IQ	16/46	Demolished	1.27	27.494649	-26.070951
B059	Building - 1938	Vaalbank 512 JQ	62/512	Demolished	0.54	27.479304	-26.004564
B060	Building - 1938	Vaalbank 512 JQ	61/512	Surface remains	0.90	27.473992	-26.000857
B061	Building - 1975	Rietpoort 395 JQ	28/395	Surface remains	1.74	27.468534	-26.002680
B062	Structure - 1975	Rietpoort 395 JQ	27/395	Demolished	1.30	27.464618	-26.003472
B063	Building - 1975	Vaalbank 512 JQ	61/512	Surface remains	1.24	27.473816	-26.001893
B064	Building - 1975	Koestersfontein 45 IQ	35/45; 25/45	Surface remains	3.74	27.471809	-26.011482
B065	Building - 1975	Vaalbank 512 JQ	106/512	Surface remains	0.66	27.481058	-26.005879
B066	Building - 1975	Vaalbank 512 JQ	106/512	Demolished	0.44	27.482843	-26.005052
B067	Building - 1975	Koestersfontein 45 IQ	36/45; 40/45	Demolished	1.17	27.479236	-26.014852
B068	Building - 1975	Koestersfontein 45 IQ	40/45; 22/45	Demolished	0.71	27.485980	-26.013932
B069	Building - 1975	Koestersfontein 45 IQ	40/45	Demolished	1.02	27.481547	-26.016513
B070	Building - 1975	Koestersfontein 45 IQ	27/45; 28/45; 42/45	Demolished	1.13	27.487881	-26.016103
B071	Grave/Cemetery - 1975	Koestersfontein 45 IQ	42/45	Surface remains	0.76	27.487138	-26.020238
B072	Building - 1975	Koestersfontein 45 IQ	35/45; 20/45	Demolished	0.77	27.473713	-26.019472
B073	Building - 1961	Koestersfontein 45 IQ	5/45	Surface remains	1.32	27.456650	-26.029754
B074	Structure - 1975	Koestersfontein 45 IQ	51/45; 47/45	Demolished	0.71	27.452502	-26.028553
B075	Building - 1975	Koestersfontein 45 IQ	4/45	Demolished	1.03	27.474214	-26.024400
B076	Building - 1975	Koestersfontein 45 IQ	43/45; 42/45	Surface remains	3.94	27.485803	-26.024275
B077	Building - 1975	Golden Valley 621 IQ	4/621; 5/621	Demolished	1.20	27.489731	-26.029762
B078	Building - 1975	Koestersfontein 45 IQ	13/45	Surface remains	1.26	27.478866	-26.036158
B079	Building - 1975	Koestersfontein 45 IQ	4/45	Surface remains	1.41	27.476045	-26.038373
B080	Building - 1975	Koestersfontein 45 IQ	32/45	Surface remains	2.23	27.460168	-26.033323
B081	Building - 1961	Koestersfontein 45 IQ	48/45; 6/45; 47/45	Surface remains	3.20	27.452027	-26.035530
B082	Building - 1961	Koestersfontein 45 IQ	53/45	Demolished	1.82	27.446326	-26.039555
B083	Building - 1961	Koestersfontein 45 IQ	6/45	Surface remains	1.13	27.455211	-26.038528
B084	Building - 1975	Kaalfontein 44 IQ	64/44; 63/44	Surface remains	1.79	27.464695	-26.057974
B085	Building - 1961	Kaalfontein 44 IQ	64/44	Surface remains	2.01	27.468842	-26.059515
B086	Building - 1975	Kaalfontein 44 IQ	63/44	Demolished	2.15	27.459732	-26.064724

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B087	Building - 1975	Kaalfontein 44 IQ	64/44; 63/44	Demolished	1.66	27.462230	-26.067307
B088	Structure - 1961	Kaalfontein 44 IQ	63/44	Demolished	2.28	27.460946	-26.069454
B089	Structure - 1975	Kaalfontein 44 IQ	63/44	Demolished	0.92	27.451019	-26.069944
B090	Structure - 1961	Kaalfontein 44 IQ	63/44; 59/44	Demolished	1.53	27.449700	-26.067280
B091	Mining - 1975	Kaalfontein 44 IQ	63/44	Demolished	1.74	27.453312	-26.069230
B092	Building - 1975	Sluis 46 IQ	27/46	Surface remains	2.95	27.492252	-26.078648
B093	Building - 1975	Sluis 46 IQ	14/46; 15/46; 16/46; 17/46	Demolished	3.11	27.492469	-26.073200
B094	Building - 1975	Sluis 46 IQ	18/46; 20/46; 19/46; 23/46	Surface remains	9.84	27.497573	-26.069842
B095	Building - 1975	Sluis 46 IQ	18/46; 20/46	Demolished	2.64	27.497942	-26.066435
B096	Building - 1944	Migalsoord 152 IQ	RE/152	Surface remains	4.15	27.500281	-26.030667
B097	Mining - 1944	Golden Valley 621 IQ	23/621; 24/621	Demolished	11.94	27.511369	-26.028106
B098	Hut - 1944	Golden Valley 621 IQ	14/621	Demolished	3.35	27.523132	-26.022886
B099	Hut - 1944	Golden Valley 621 IQ	43/621	Demolished	5.34	27.512180	-26.038556
B100	Hut - 1944	Migalsoord 152 IQ	RE/152	Demolished	10.05	27.509326	-26.046975
B101	Structure - 1944	Migalsoord 152 IQ	RE/152	Demolished	0.65	27.509871	-26.044428
B102	Mining - 1944	Sluis 46 IQ	23/46	Demolished	4.95	27.501211	-26.070921
B103	Mining - 1944	Sluis 46 IQ	33/46; 35/46	Demolished	6.22	27.509471	-26.077433
B104	Mining - 1944	Sluis 46 IQ	34/46; 36/46	Demolished	1.90	27.509430	-26.081927
B105	Mining - 1944	Sluis 46 IQ	1/46; 58/46; 13/151; RE/152	Demolished	7.50	27.519303	-26.058749
B106	Building - 1957	Golden Valley 621 IQ	8/621	Demolished	1.72	27.501332	-26.023135
B107	Hut - 1957	Migalsoord 152 IQ	RE/152	Demolished	3.38	27.502874	-26.034513
B108	Grave/Cemetery - 1957	Migalsoord 152 IQ	RE/152	Unknown	1.01	27.508474	-26.049152
B109	Building - 1957	Zuikerboschfontein 151 IQ	11/151	Surface remains	2.14	27.515021	-26.046666
B110	Hut - 1957	Sluis 46 IQ	1/46; 58/46	Demolished	0.95	27.521372	-26.059581
B111	Building - 1957	Sluis 46 IQ	1/46	Demolished	1.10	27.521721	-26.058616
B112	Hut - 1957	Sluis 46 IQ	61/46; 70/621	Demolished	2.81	27.531506	-26.054936
B113	Hut - 1957	Sluis 46 IQ	56/46; 53/46	Demolished	1.56	27.515740	-26.064192
B114	Hut - 1957	Sluis 46 IQ	55/46	Demolished	1.28	27.507348	-26.070054
B115	Building - 1957	Sluis 46 IQ	55/46	Demolished	1.38	27.507400	-26.069141
B116	Hut - 1957	Sluis 46 IQ	65/46	Demolished	2.25	27.531290	-26.074403
B117	Ruin - 1957	Sluis 46 IQ	47/46; 49/46	Demolished	2.60	27.532701	-26.067826
B118	Hut - 1957	Zuikerboschfontein 151 IQ	11/151; 12/151	Demolished	2.24	27.516792	-26.050154
B119	Building - 1957	Golden Valley 621 IQ	9/621	Demolished	0.72	27.501397	-26.026910

Site No	Type	Parent Farm	Farm Portion	Current Status	Estimated Extent (ha)	Lat (y)	Lon (x)
B120	Building - 1976	Sluis 46 IQ	55/46; 57/46	Surface remains	1.60	27.509011	-26.068066
B121	Building - 1961	Sluis 46 IQ	57/46; 56/46	Demolished	2.12	27.513841	-26.063293
B122	Mining - 1976	Sluis 46 IQ	43/46; 41/46	Surface remains	11.57	27.526762	-26.074383
B123	Building - 1976	Sluis 46 IQ	62/46	Surface remains	2.58	27.533199	-26.062807
B124	Building - 1976	Sluis 46 IQ	62/46	Surface remains	1.55	27.535416	-26.061292
B125	Building - 1976	Golden Valley 621 IQ	57/621	Surface remains	1.78	27.520698	-26.046336
B126	Building - 1976	Golden Valley 621 IQ	70/621; 59/621	Demolished	1.46	27.528066	-26.051135
B127	Building - 1961	Golden Valley 621 IQ	40/621	Surface remains	2.96	27.518460	-26.034354
B128	Building - 1976	Golden Valley 621 IQ	41/621	Surface remains	1.18	27.516963	-26.036834
B129	Building - 1976	Golden Valley 621 IQ	32/621; 31/321	Surface remains	3.66	27.534289	-26.028213
B130	Building - 1976	Golden Valley 621 IQ	36/621; 31/321	Surface remains	3.49	27.533808	-26.030770
B131	Building - 1976	Golden Valley 621 IQ	47/621; 56/621	Surface remains	4.80	27.529692	-26.041694
B132	Building - 1976	Sluis 46 IQ	23/46	Surface remains	1.77	27.505893	-26.070389
B133	Building - 1976	Golden Valley 621 IQ	9/621	Demolished	0.46	27.500082	-26.026936
B134	Building - 1961	Rietpoort 395 JQ	4/395	Demolished	2.36	27.468264	-25.975490
B135	Building - 1938	Kaalfontein 44 IQ	44/44	Surface remains	2.01	27.435548	-26.035232
B136	Building - 1961	Koestersfontein 45 IQ	54/45	Demolished	0.36	27.462778	-26.030826
B137	Building - 1961	Kaalfontein 44 IQ	63/44	Demolished	1.18	27.460227	-26.068166
B138	Building - 1961	Kaalfontein 44 IQ	63/44	Surface remains	0.81	27.461808	-26.068421
B139	Building - 1961	Koestersfontein 45 IQ	4/45	Demolished	0.79	27.475302	-26.021153
B140	Building - 1961	Koestersfontein 45 IQ	47/45; 51/45; 5/45	Surface remains	1.26	27.452779	-26.030089
B141	Building - 1961	Koestersfontein 45 IQ	4/45	Demolished	0.44	27.469155	-26.021872
B142	Structure - 1961	Golden Valley 621 IQ	5/621	Demolished	0.70	27.493332	-26.028089
B143	Building - 1961	Kaalfontein 44 IQ	63/44	Demolished	0.45	27.458932	-26.055128
B144	Building - 1961	Sluis 46 IQ	65/46; 43/46	Demolished	0.65	27.529745	-26.072269
B145	Building - 1961	Golden Valley 621 IQ	49/621	Surface remains	1.17	27.535281	-26.037994
B146	Building - 1961	Golden Valley 621 IQ	24/621	Demolished	0.47	27.507498	-26.029215
B147	Building - 1961	Golden Valley 621 IQ	8/621; 9/621	Surface remains	4.05	27.498413	-26.025088
B148	Building - 1961	Golden Valley 621 IQ	8/621	Surface remains	0.97	27.497884	-26.022308

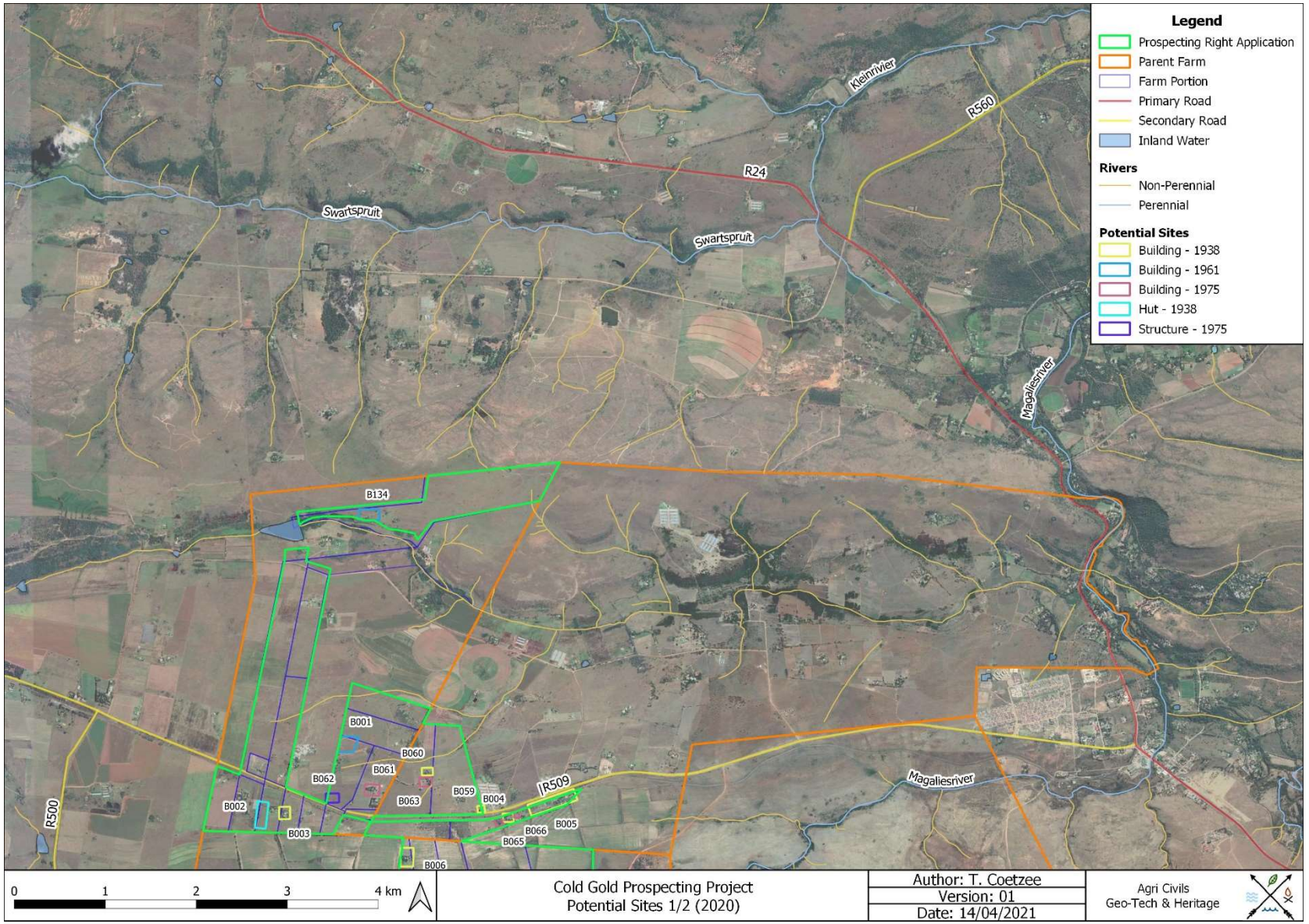

Figure 15: Potential Sites – 1/2.

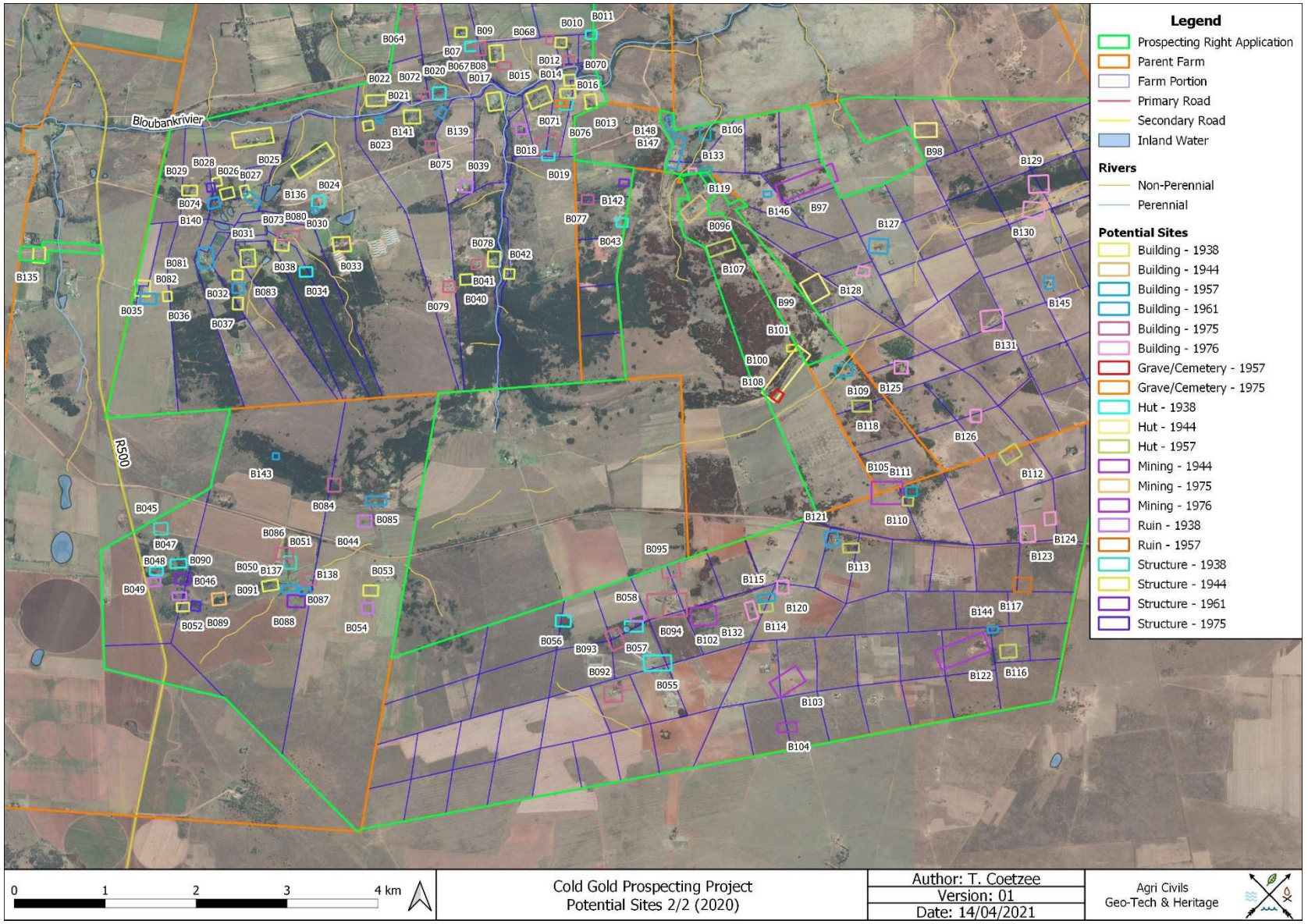

Figure 16: Potential Sites – 2/2.

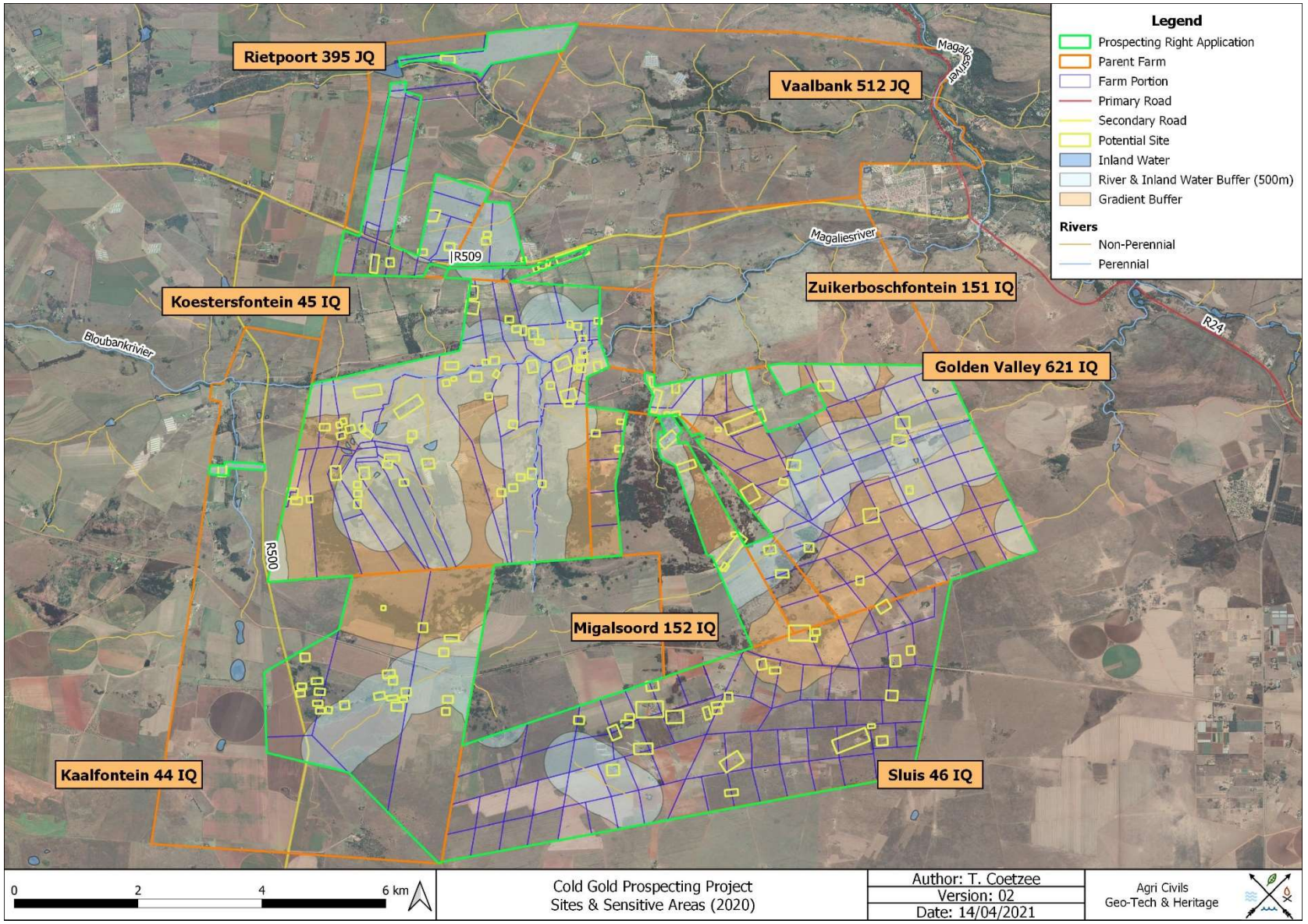

Figure 17: Sensitive Areas.

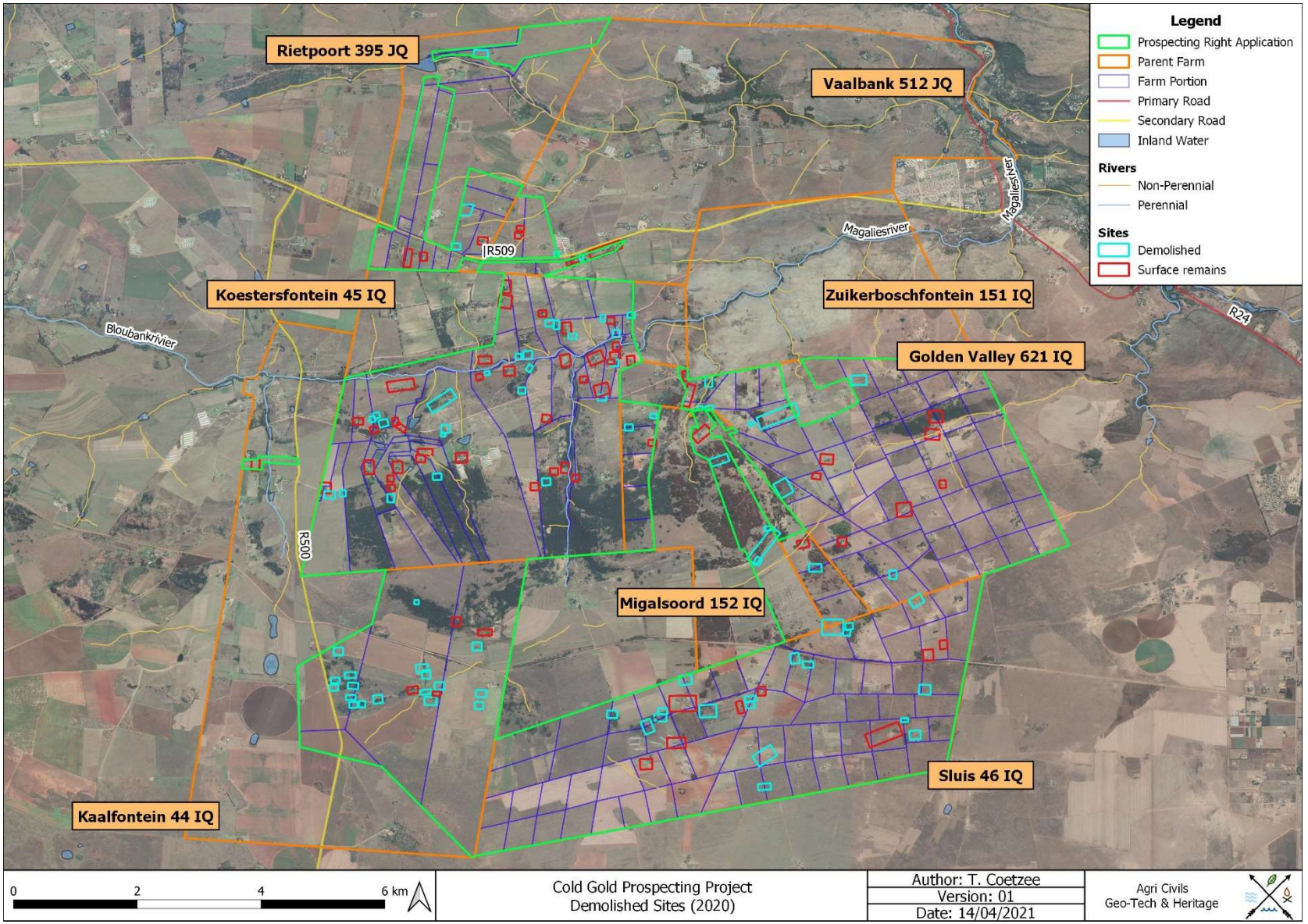

Figure 18: Demolished Sites.

5.2 Recommendations

The following recommendations are made in order to avoid the destruction of heritage remains within the area demarcated for prospecting:

- It is recommended that the areas associated with the identified sites be avoided by the proposed prospecting activities. Should this not be possible, a qualified archaeologist must be present on-site during prospecting in order to limit potential impact on heritage resources.

- The 500 m buffer zone surrounding perennial/non-perennial rivers and dams, as well as the indicated areas associated with hills (gradient buffer) are potentially sensitive from a heritage perspective. Care should be exercised when prospecting in these vicinities.

- It is advised that a qualified archaeologist be contacted whenever uncertainty regarding potential heritage remains are encountered.

- Prospecting should not take place in the vicinity of stone cairns, potential burial sites, stone-walling, building ruins or any other heritage material or structures.

- Should the prospecting outcome result in further development or construction, a full Phase 1 Archaeological Impact Assessment must be conducted on the affected area if triggered. Also, a full Phase 1 AIA must be done should the cumulative impact of the proposed prospecting exceed 0.5 ha.

- Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the prospecting phase, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed, all activities must be suspended and the relevant heritage resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)).

- From a heritage point of view, prospecting may proceed on the demarcated portions, subject to the abovementioned conditions and recommendations.

6. Addendum: Terminology

Archaeology:

The study of the human past through its material remains.

Artefact:

Any portable object used, modified, or made by humans; e.g. pottery and metal objects.

Assemblage:

A group of artefacts occurring together at a particular time and place, and representing the sum of human activities.

Context:

An artefact's context usually consist of its immediate *matrix* (the material surrounding it e.g. gravel, clay or sand), its *provenience* (horizontal and vertical position within the matrix), and its *association* with other artefacts (occurrence together with other archaeological remains, usually in the same matrix).

Cultural Resource Management (CRM):

The safeguarding of the archaeological heritage through the protection of sites and through selvage archaeology (rescue archaeology), generally within the framework of legislation designed to safeguard the past.

Excavation:

The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and other material covering and accompanying it.

Feature:

An irremovable artefact; e.g. hearths or architectural elements.

Ground Reconnaissance:

A collective name for a wide variety of methods for identifying individual archaeological sites, including consultation of documentary sources, place-name evidence, local folklore, and legend, but primarily actual fieldwork.

Matrix:

The physical material within which artefacts is embedded or supported, i.e. the material surrounding it e.g. gravel, clay or sand.

Phase 1 Assessments:

Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.

Phase 2 Assessments:

In-depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.

Sensitive:

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

Site:

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity.

Surface survey:

There are two kinds: (1) unsystematic and (2) systematic. The former involves field walking, i.e. scanning the ground along one's path and recording the location of artefacts and surface features. A systematic survey by comparison is less subjective and involves a grid system, such that the survey area is divided into sectors and these are walked ally, thus making the recording of finds more accurate.

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Appendix A: Historical Aerial Imagery & Topographical Maps

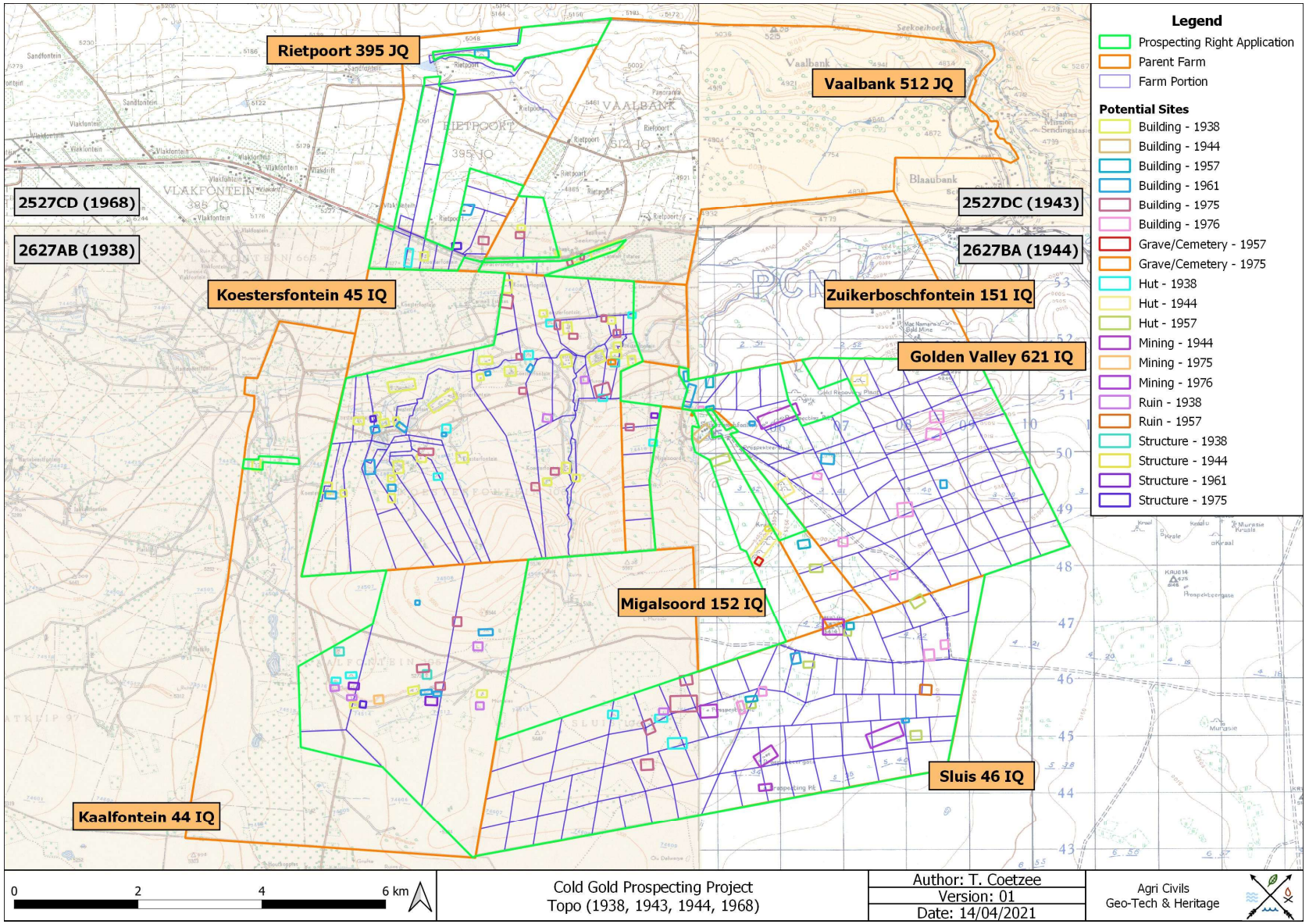

Figure 19: 1938, 1943, 1944, 1968 topographical map of the study area.

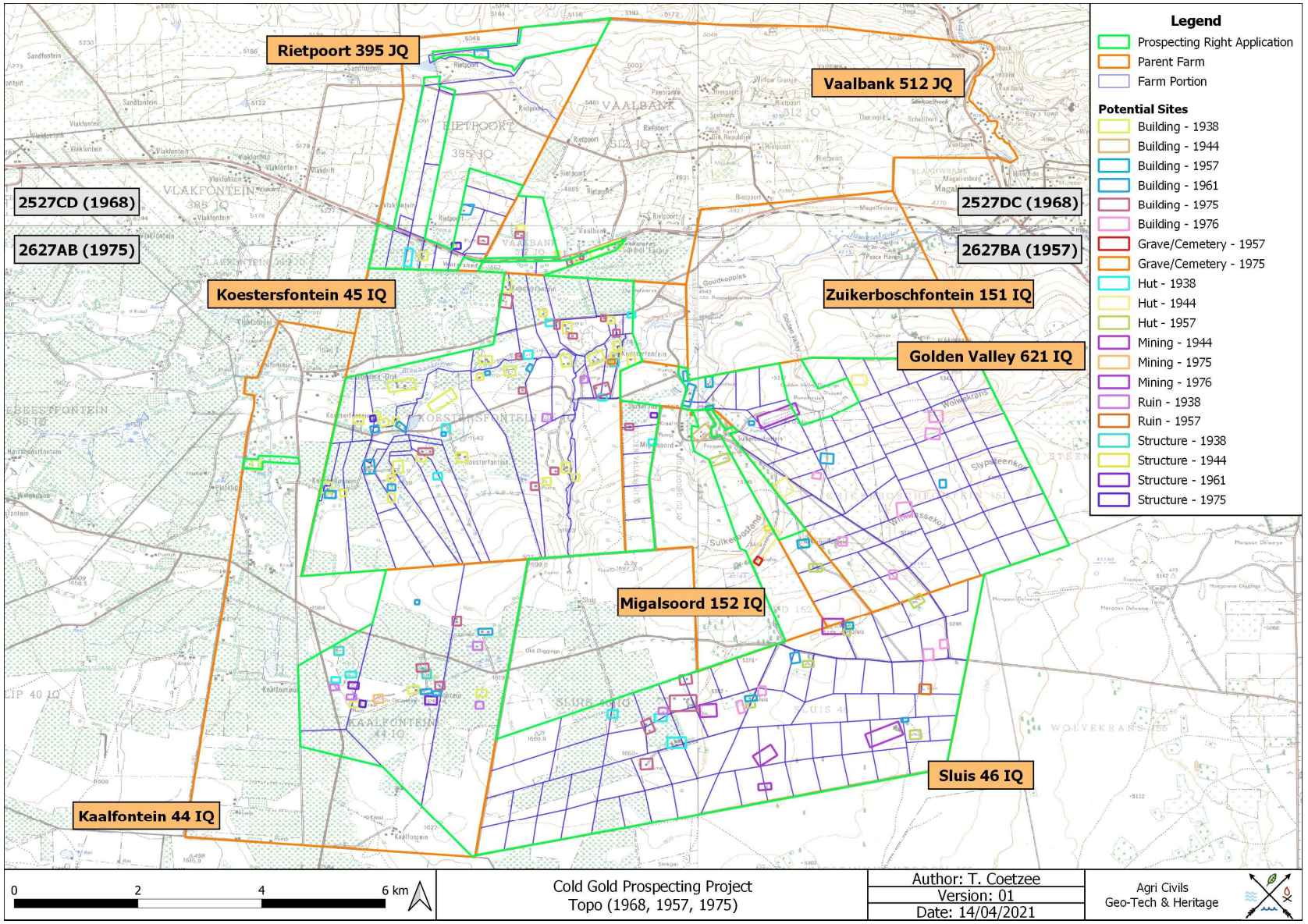

Figure 20: 1968, 1957, 1975 topographical map of the study area.

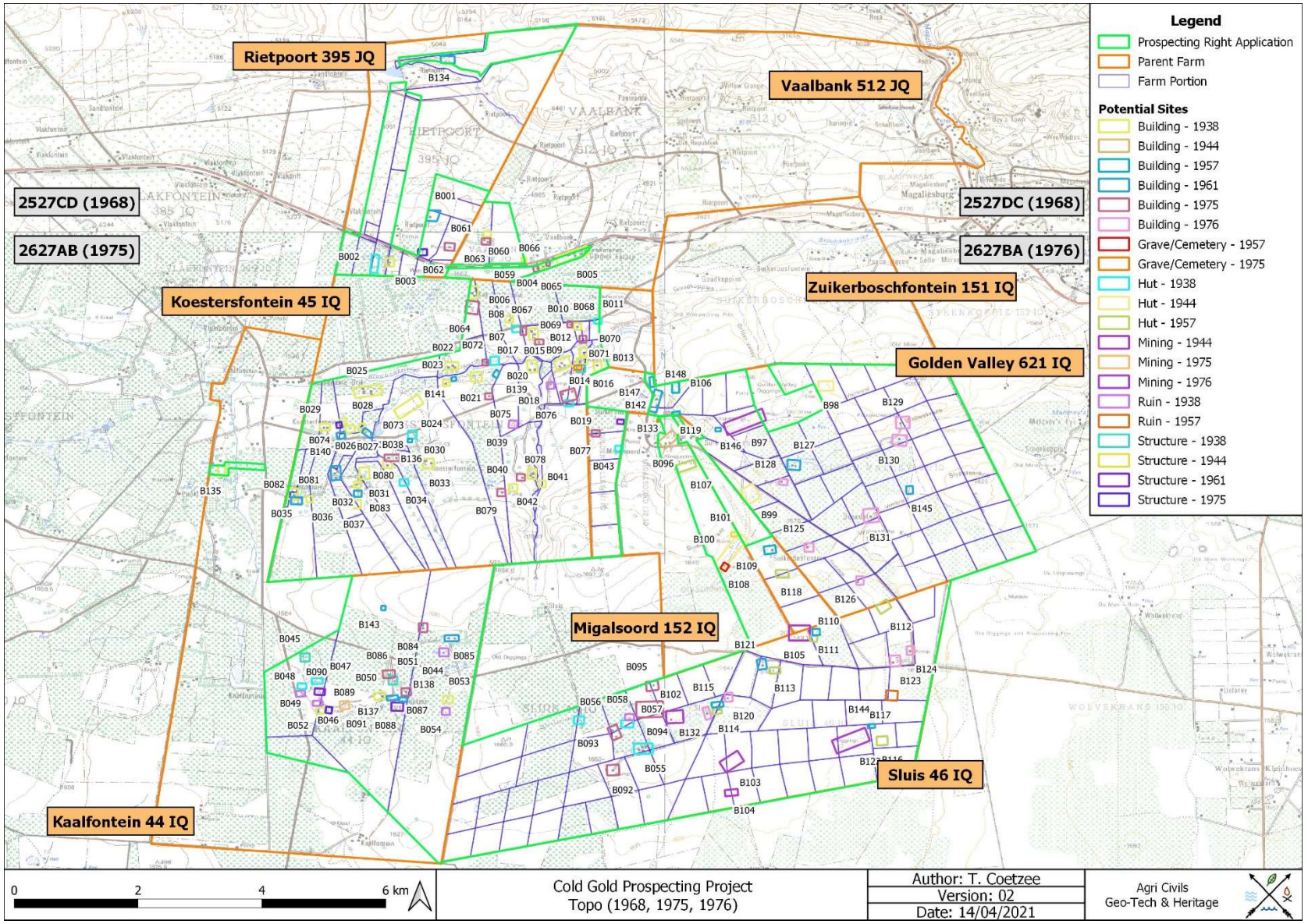

Figure 21: 1968, 1975, 1976 topographical map of the study area.

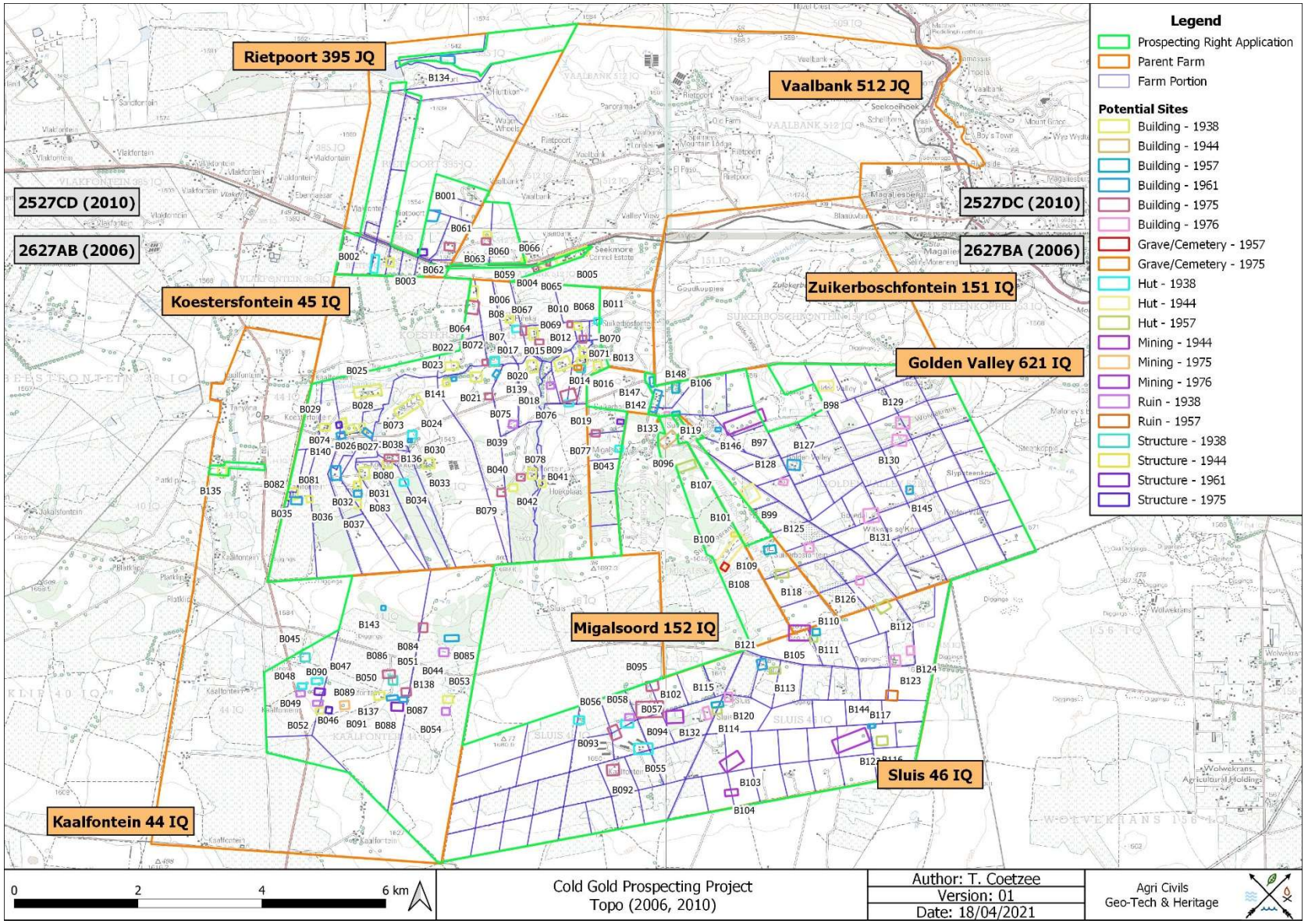

Figure 22: 2006 & 2010 topographical map of the study area.

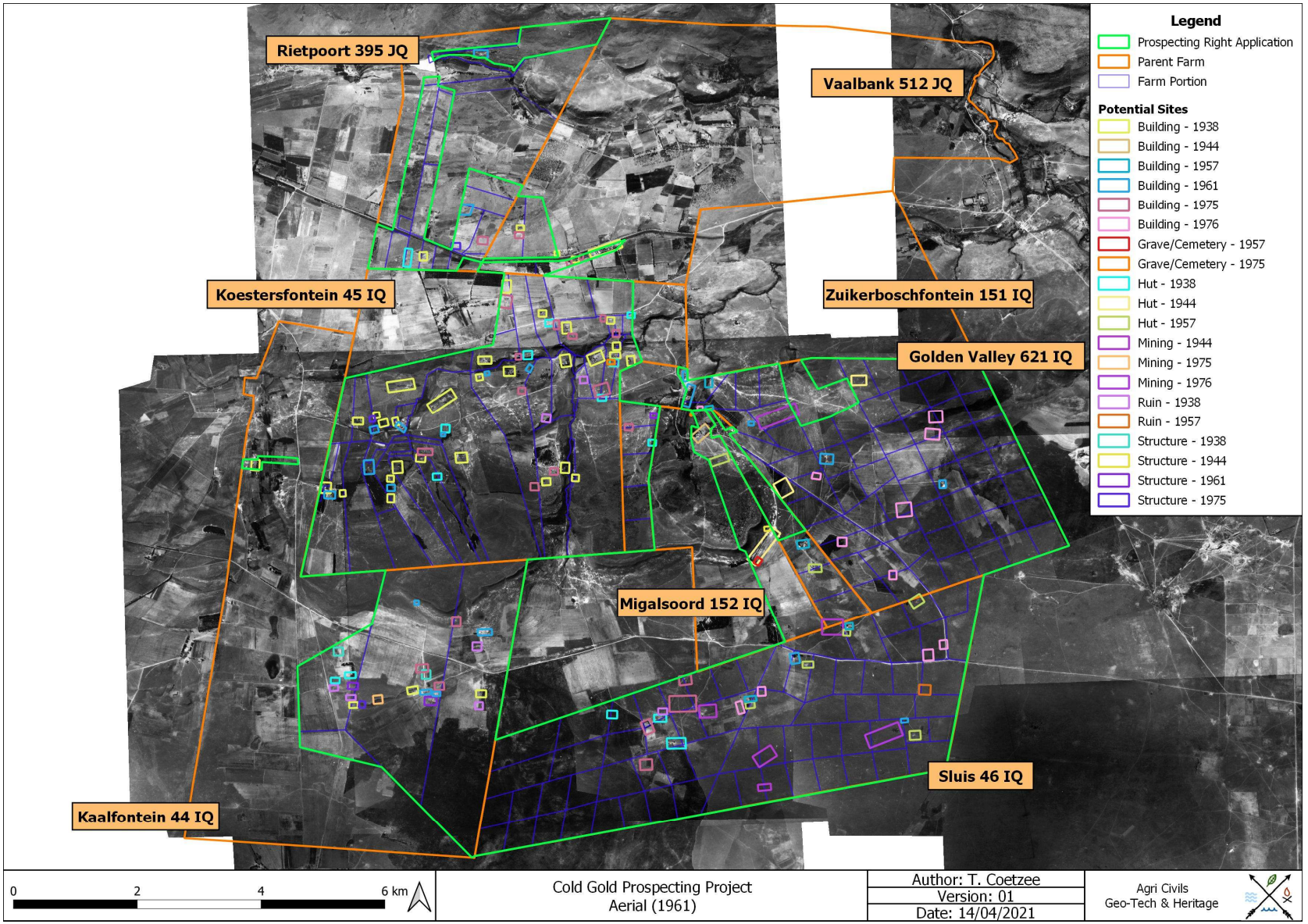

Figure 23: 1961 Aerial image of the study area.