HERITAGE WALKDOWN REPORT

for the approved Gunstfontein Wind Energy Facility, BESS and associated grid connection infrastructure near Sutherland in the Northern Cape

Prepared by

CTS HERITAGE

In Association with

Savannah

November 2020

Updated June 2021

Relevant SAHRIS Case IDs: 8383, 9908, 15616 and 15175

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EXECUTIVE SUMMARY

Gunstfontein Wind Farm (Pty) Ltd proposes the development of a wind energy facility with a contracted capacity of up to 200MW and associated infrastructure including Wind turbines, concrete foundations to support the turbines, Cabling between the turbines, laydown areas, internal access roads, an on-site substation, buildings and dedicated areas for workshops, control systems, maintenance and storage with parking areas where required, and temporary construction compound and temporary site offices. The grid connection infrastructure required to connect the wind farm to the Eskom grid includes a switching station and a 132kV overhead powerline to the Hidden Valley Substation.

Project Location: The proposed site is located ~20km south of Sutherland within the Karoo Hoogland Local Municipality, of the Namakwa District Municipality.

The proposed Gunstfontein WEF was given Environmental Authorisation in 2016 (DEA Ref: 14/12/16/3/3/2/826) while the grid connection infrastructure received EA on 12 February 2017 (DEA Ref 14/12/16/3/3/3/1/1619), and an extension to the grid connection received EA on 28 May 2021 (DFFE Ref 14/12/16/3/3/1/2228). A BESS located within the WEF footprint received EA on 21 May 2021 (DFFE Ref 14/16/12/3/3/1/2236). In 2019 the WEF EA was amended to cater for:

- An increase in rotor diameter from 140 m up to 180 m;
- An increase in hub height from 120 m up to 150 m;
- The location, number and details of site access points has been altered;
- Several corrections to conditions;
- Amendment to the site layout

In their responses to various applications made regarding the proposed development, SAHRA has required that the final WEF layout and OHL alignment be subject to a walkdown by a qualified archaeologist and a report outlining the outcomes of the walkdown submitted to SAHRA. This report is drafted to satisfy this condition.

An archaeologist conducted a full detailed walkdown and micro-siting of the Final development footprint for the Gunstfontein WEF development footprint including the WEF, BESS, OHL and OHL Extension, between 19 and 26 November 2020 (7 days) and again in May 2021 to determine what archaeological resources are likely to be impacted by the final layout of the proposed development.

Heritage resources identified within the proposed development area included archaeological and built environment features. Only a few lithics comprising patinated silcrete and hornfels were identified. Almost all built environment features were found along valley bottoms or on open plains or rock plateaus. No archaeological resources were identified on the steep scree slopes. Several stone ruins were the only significant findings in the region assigned for the development on the Gunstfontein farm. A rectangular, dry stacked stone-built kraal (likely historic in age) and a disused stone and mudbrick-built farm dwelling with associated stone outbuildings were identified during the OHL survey. The lack of natural shelters, in addition to the extreme climate conditions and a lack of water throughout the areas of the proposed development most likely made the area unattractive for prehistoric occupation.

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Based on the outcomes of the required walkdown, it is not anticipated that the proposed development of turbines, cables and roads associated with the proposed WEF including the BESS, OHL and associated infrastructure, will negatively impact on significant archaeological heritage and as such, there is no heritage objection to the final alignment proposed for the WEF development. The identified built environment and graves do not fall within the development footprint and will not be directly impacted. Furthermore, all recommended mitigation measures for the approved Gunstfontein WEF as required by SAHRA (ie. 60m buffer area around all heritage resources) have been applied in the final layout.

The findings of this walkdown assessment align with the conclusions of the findings of the archaeological assessment conducted for the Gunsfontein WEF (Van der Walt 2015) which identified eight heritage resources consisting "of Anglo Boer War (South African War) fortifications, rock art, stone cairns and farm labourer ruins…" Through this walkdown process, an additional ten conservation-worthy heritage resources were identified located in proximity to the final layout. Based on current plans, none of the known heritage resources located on Gunstfontein farm identified either by Van der Walt (2015) or in this report will be directly impacted by the final layout. Please see figures 9.1 to 9.11 for maps of all known heritage resources (with SAHRIS IDs and observation IDs) relative to the final Gunstfontein WEF Layout and associated infrastructure.

The southern section of the Gunstfontein OHL runs parallel to the Soetwater OHL. In a recent walkdown of the proposed Soetwater OHL (July 2020), a stone packed feature (possible burial) was identified within the proposed OHL corridor for Gunsfontein. This site is recorded on SAHRIS as Site 131150 and is described in detail by Booth (2020, SAHRIS NID 539589, Case ID 15452); "The stone packed feature cannot be confirmed as being a grave unless systematic excavations are conducted to establish whether the area contains a burial. This method of mitigation is however the least preferred. The stone packed feature may be established as being older than 30 years owing the landowner and farm staff being unaware of its origin or existence, or older than the establishment of colonial settlements and farming activities within the area. However, the more recent-looking packing of the stones may not confirm that the feature is older than 100 years." Booth (2020) made a number of recommendations regarding this site, which have been endorsed and added to by SAHRA (September 2020), and are repeated below. This site was fenced off when observed during the walkdown for this report by the construction team for the Soetwater WEF. We think it is highly unlikely to be a burial site and it is more than likely another historical beacon similar to one identified on a neighbouring farm.

Observations G010 and G011 are located in close proximity to proposed infrastructure in the final layout and as such, the final layout has been amended to ensure compliance with SAHRA's requirement for a 60m buffer around these sites.

The relevant conditions and recommendations from SAHRA in response to the initial HIA submissions for the Gunstfontein WEF remain applicable and are repeated below for ease of reference:

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- A bufferzone of 60 m must be maintained from all identified heritage and palaeontological resources. Micro adjustment of all relevant proposed infrastructure must occur in order to achieve this. The final layout as assessed in this walkdown report complies with this requirement.
- The stone cairn/possible grave (Feature 4, SAHRIS ID 129288), should be demarcated and fenced off with a perimeter buffer zone of 60m;
- A Conservation Management Plan must be developed to ensure the on-going conservation of identified heritage resources during the life of the development. The report must include a map of all identified heritage and palaeontological resources with buffer zones of 60 m in relation to the proposed development. This report must be submitted to SAHRA if the EA has been approved and must form part of the final EMPr;
- Palaeontological Monitoring of the construction phase can be conducted by a suitable qualified Environmental Control Officer, punctuated by regular site visits by a qualified palaeontologist. Proof of training must be presented to SAHRA and regular monitoring reports must be submitted to SAHRA;
- If concentrations of pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work must cease immediately and be reported to the archaeologist and/or the South African Heritage Resources Authority (SAHRA) (021 462 4502) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts may then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.

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CONTENTS

Appendices

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1. INTRODUCTION

1.1 Background Information on Project

Gunstfontein Wind Farm (Pty) Ltd proposes the development of a wind energy facility with a contracted capacity of up to 200MW and associated infrastructure including Wind turbines, concrete foundations to support the turbines, Cabling between the turbines, laydown areas, internal access roads, an on-site substation, buildings and dedicated areas for workshops, control systems, maintenance and storage with parking areas where required, and temporary construction compound and temporary site offices. The grid connection infrastructure required to connect the wind farm to the Eskom grid includes a switching station and a 132kV overhead powerline to the Hidden Valley Substation.

Project Location: The proposed site is located ~20km south of Sutherland within the Karoo Hoogland Local Municipality, of the Namakwa District Municipality.

The proposed Gunstfontein WEF was given Environmental Authorisation in 2016 (DEA Ref: 14/12/16/3/3/2/826) while the grid connection infrastructure received EA on 12 February 2017 (DEA Ref 14/12/16/3/3/3/1/1619), and an extension to the grid connection received EA on 28 May 2021 (DFFE Ref 14/12/16/3/3/1/2228). A BESS located within the WEF footprint received EA on 21 May 2021 (DFFE Ref 14/16/12/3/3/1/2236). In 2019 the WEF EA was amended to cater for:

- An increase in rotor diameter from 140 m up to 180 m;
- An increase in hub height from 120 m up to 150 m;
- The location, number and details of site access points have been altered;
- Several corrections to conditions;
- Amendment to the site layout

In their responses to various applications made regarding the proposed development, SAHRA has made the following requirements:

March 2016

- A bufferzone of 60 m must be maintained from all identified heritage and palaeontological resources. Micro adjustment of all relevant proposed infrastructure must occur in order to achieve this;
- The stone cairn/possible grave (Feature 4 SAHRIS ID 129288), should be demarcated and fenced off with a perimeter buffer zone of 60m;
- No turbines may be located within three (3) kilometers from the R354/R356. This is in line with comments issued on surrounding Wind Farm projects (*NB. this was updated in a subsequent response, in June 2016 see below*);
- A Conservation Management Plan must be developed to ensure the on-going conservation of identified heritage resources during the life of the development. The report must include a map of all identified heritage and palaeontological resources with buffer zones of 60 m in relation to the proposed development. This report must be submitted to SAHRA if the EA has been approved and must form part of the final EMPr; and

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- On-site monitoring of excavations deeper than 1 m must be conducted by a qualified palaeontologist during the construction phase of any infrastructure located within the Abrahamskraal formation. Site monitoring reports must be submitted to SAHRA upon completion.

June 2016

- The closest two wind turbines (Turbine 1 and Turbine 2) to the R356 must be removed from the proposed layout in order to maintain a bufferzone of 1.6 km from the historical Verlatenkloof Pass (as proposed by ACED and agreed upon by SAHRA APM Unit through discussion);
- Should the two turbines be relocated to another area, the access route and location of the turbines must be subjected to a walk-down by a qualified archaeologist and palaeontologist to ensure that no heritage resources are impacted by construction activities. A Walk-Down report must be completed and submitted to SAHRA for comment prior to construction. No construction may occur without comments from SAHRA;
- Palaeontological Monitoring of the construction phase can be conducted by a suitable qualified Environmental Control Officer, punctuated by regular site visits by a qualified palaeontologist. Proof of training must be presented to SAHRA and regular monitoring reports must be submitted to SAHRA;
- Previous comments issued on 18 March 2016 pertaining to the 60m bufferzone from identified heritage and palaeontological resources, feature 4 (SAHRIS ID 129288) and the development of a Conservation Management Plan are still valid and must apply to the proposed WEF.

March 2019

The final layout of the development must be physically inspected by a qualified archaeologist and a report must be submitted to SAHRA for comment.

The following additional conditions must be included in the Environmental Management Programme (EMPr) and completed should the Amended EA be granted:

- The Final Amendment Report and EMPr must be uploaded to the SAHRIS application for record purposes;
- If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- The decision regarding the Amended EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.

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This report is submitted in fulfillment of the requirement for a walkdown of the final alignment by an archaeologist for SAHRIS cases 8383, 9908, 15616 and 15175.

1.2 Description of Property and Affected Environment

The area proposed for development of the wind turbines is located within a relatively flat landscape in comparison to the OHL which traverses flat plains and mountainous terrain. Two large perennial rivers cut through the area, these are the Boesmanshoek and Brandkloof rivers. There are also numerous smaller ephemeral streams and erosional gullies. The site is underlain by the Abrahamskraal Formation which is a unit within the Beaufort Group strata comprising siltstone, mudstone, and immature sandstones (greywacke).

The region is regarded as semi-arid as it receives limited precipitation. It is located on the border of the summer and winter rainfall regions. Precipitation is in the form of snow and rain in winter, with occasional thunderstorms during the summer. The vegetation cover falls within the Western Mountain Karoo subregion and comprises the typical Karoo grasses and scrubland, of varying densities. The area is traversed by tar and gravel roads with numerous jeep tracks. More recently, tracks and roads have been created to access construction sites for the wind turbines on neighbouring farms. Some sections of the proposed OHL were disturbed by heavy vehicles, sample pits and clearing.

The land is used predominantly for stock and game farming. Farming infrastructure comprises farm dwellings, dams, wind pumps and fenced stock camps.

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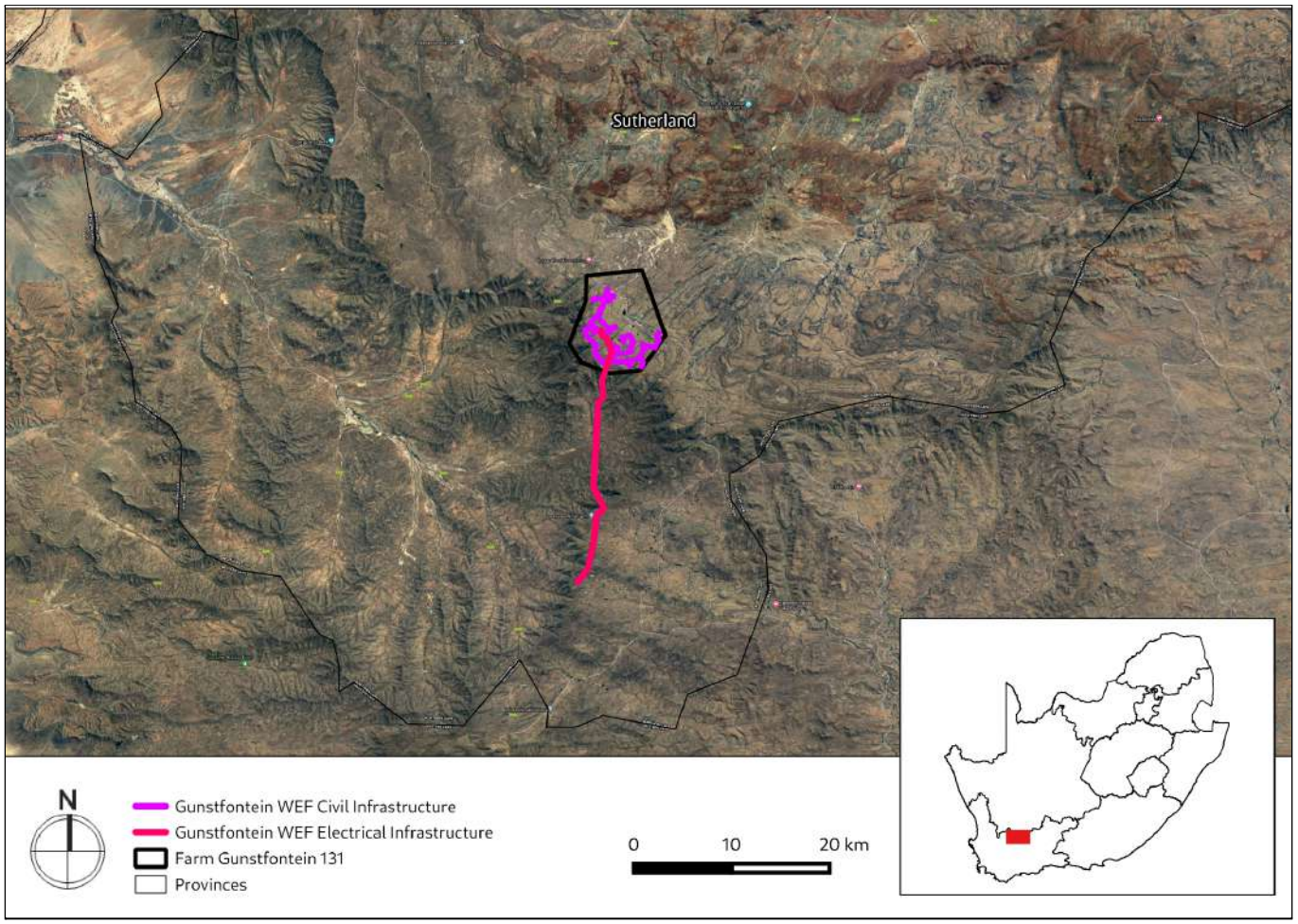

Figure 1.1: Close up satellite image indicating proposed location of the Gunstfontein WEF development

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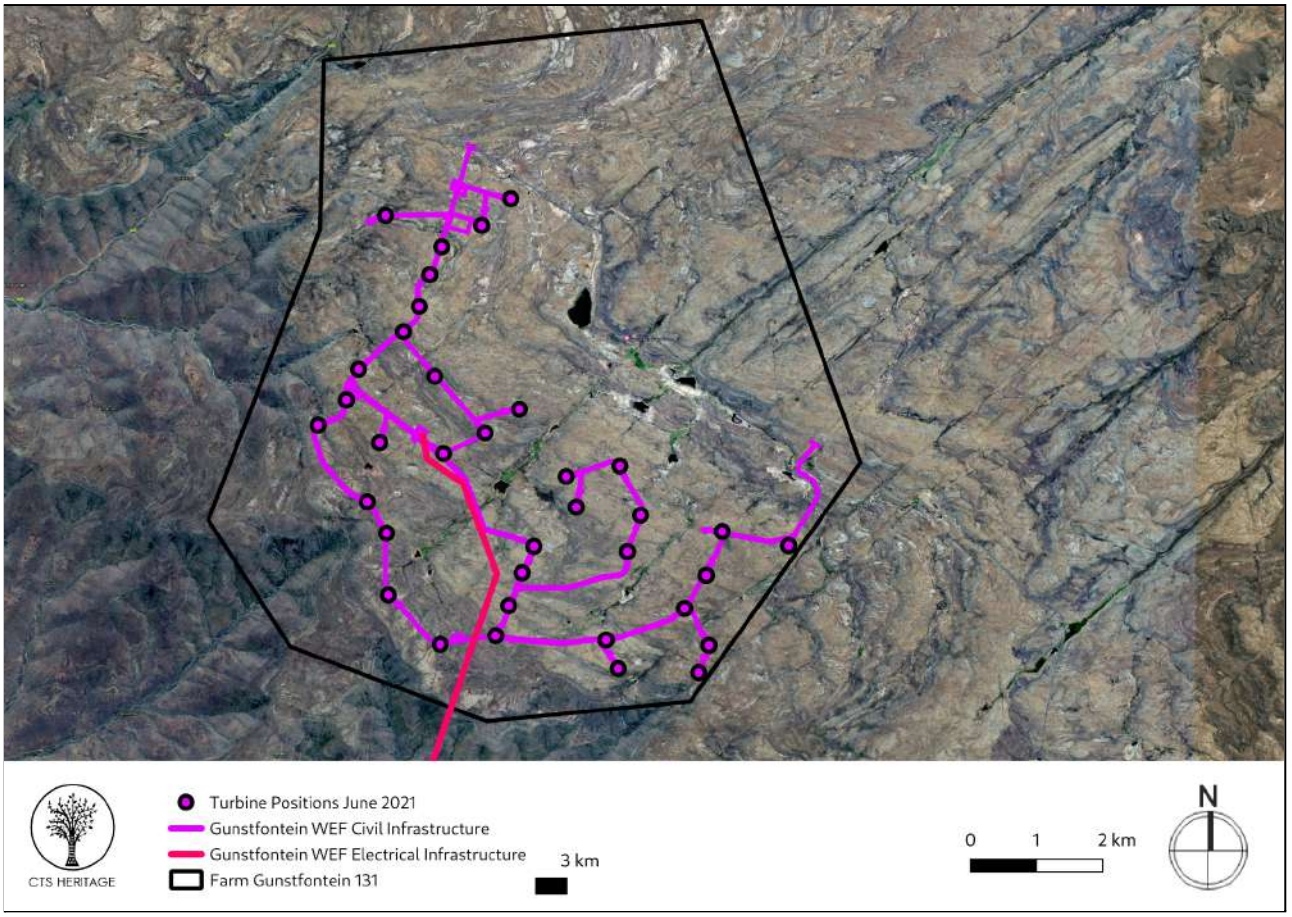

Figure 1.2: Final proposed layout for the Gunstfontein WEF development

2. METHODOLOGY

2.1 Purpose of Walkdown

In their Final Comment for the Gunstfontein WEF application issued in June 2016, SAHRA required that "Should the two turbines be relocated to another area, the access route and location of the turbines must be subjected to a walk-down by a qualified archaeologist and palaeontologist to ensure that no heritage resources are impacted by construction activities. A Walk-Down report must be completed and submitted to SAHRA for comment prior to construction. No construction may occur without comments from SAHRA". The requirement for an archaeological walkdown was repeated in SAHRA's comments for the Gunstfontein WEF associated infrastructure. This report is submitted to SAHRA in order to satisfy this requirement.

This study is also being undertaken in compliance with Condition 123 & 129 of the Wind Farm EA as per below:
129. The final layout should be shown to the appointed archaeologist before implementation to confirm that all significant heritage resources have been adequately protected.

The walk-down is undertaken in order to ensure that the final layout of Gunstfontein WEF and associated infrastructure will have no impact on known heritage resources.

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2.2 Summary of steps followed

- An archaeologist conducted a full detailed walkdown and micro-siting of the Final development footprint for the Gunstfontein WEF development footprint and associated infrastructure between 19 and 26 November 2020 (7 days) and again in May 2021 to determine what archaeological resources are likely to be impacted by the proposed development.
- The area proposed for development was assessed on foot and by 4x4 vehicle, photographs of the context and finds were taken, and tracks were recorded (at 20m intervals) using a GPS.
- The identified resources were assessed to evaluate their heritage significance in terms of the grading system outlined in section 3 of the NHRA (Act 25 of 1999).

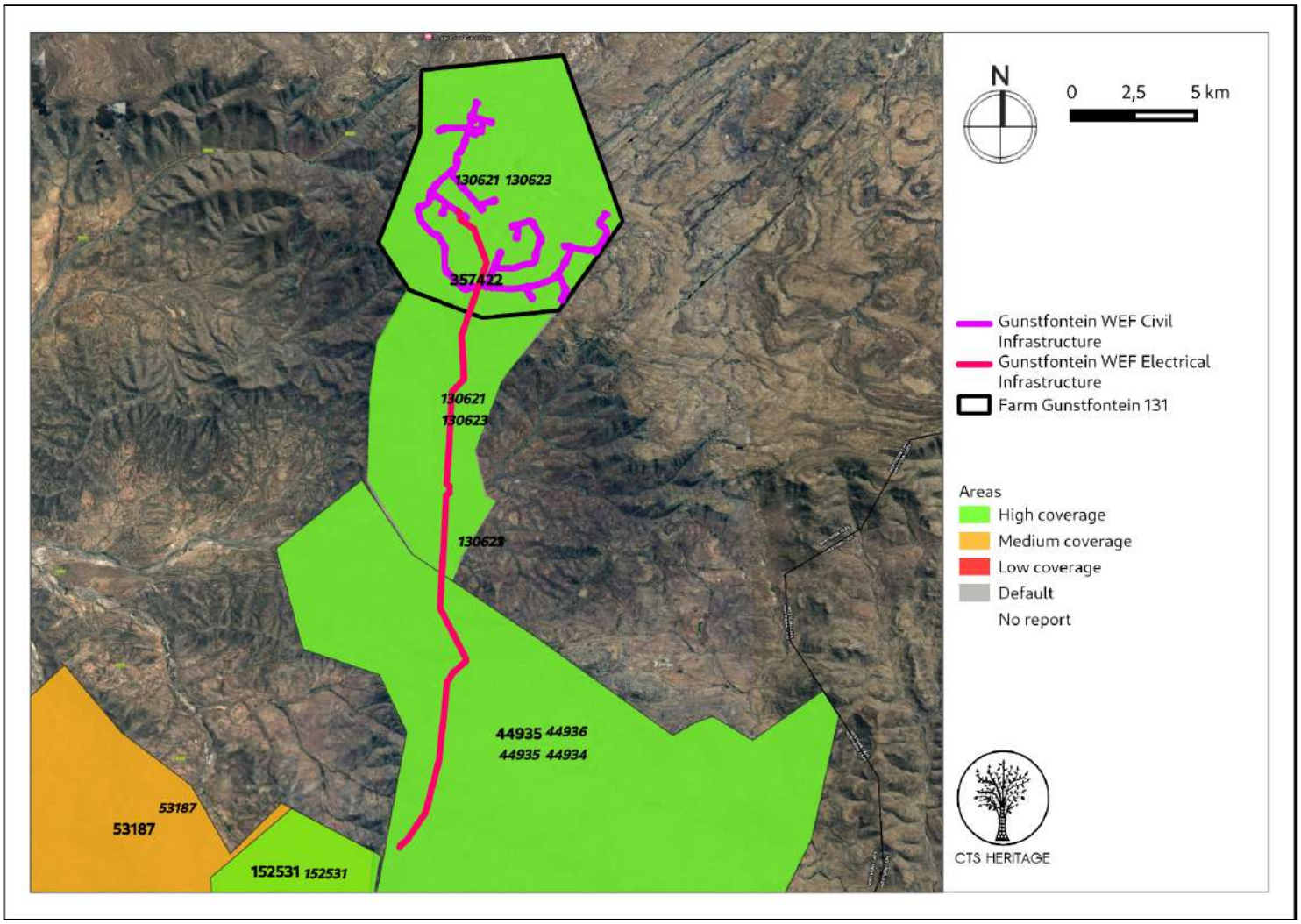

Figure 2: Close up satellite image indicating proposed location of development in relation to heritage studies previously conducted

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2.3 Constraints & Limitations

The archaeological visibility of the plateau areas associated with the proposed wind turbines and associated infrastructure was reasonable in terms of vegetation cover. However, the area was covered by extensive loose sand which was often disturbed by animal traffic (sheep) and bioturbation (burrows). Whereas, in the walkthrough assessment for the OHL from the Gunstfontein farm, the archaeological visibility was limited in some areas due to dense vegetation and extensive rock boulder cover. The mountainous terrain ranging from 1600m to 800m above sea level, restricted sampling areas. Areas with extensive boulder strewn scree slopes with naturally exfoliated greywacke siltstone boulders received limited attention. The decision was made to sample areas that were more likely to contain archaeological material. There was no archaeological evidence along the siltstone/greywacke mountain ridges and slopes where the OHL is proposed.

Further limitations resulted from the disturbance caused by vegetation clearance and heavy vehicle activity associated with wind turbine construction and road access for other wind energy facilities currently under construction in the vicinity of Gunstfontein. This included the pre-emptive offloading of power pylons and sample pits associated with the OHL development for other wind energy facilities. Wind turbine marker poles and access tracks were also observed on Gunstfontein farm.

Despite these constraints, the walkthrough has provided a thorough assessment of the archaeological sensitivity of the proposed development area.

3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT

Van der Walt (2015) drafted a concise background of the broader context in his HIA originally drafted for the proposed WEF development. His background to the site is summarised here.

The area proposed for development is located in the Southern Karoo. According to Van der Walt (2015) “Due to the geological nature of the Sutherland area, some early geologists, like E. J. Dunn and A. H. Green, suspected that coal could be found in the region. Two boreholes were dug in 1886 and 1887 respectively near the Kruidfontein Station at Sutherland, but nothing was found. Prospectors also dug for oil; three boreholes were constructed between 1939 and 1970. These endeavors were however equally unsuccessful. During the excavation for oil it was however discovered that uranium deposits were present in the area. These deposits were spread over a large area, but rewarding concentrations of uranium were in most cases only found in isolated patches.” The Palaeontological assessment conducted by Almond (2015) identified some such uranium deposits.

Scattered throughout the Karoo is evidence of historic and prehistoric occupation in the form of Early, Middle and Later Stone Age lithics and other material remains. The descendents of the historic and prehistoric occupants of the region are found in the indigeous Khoe and San, the Griqua as well as modern inhabitants of the area. Furthermore, by the end of the 17th Century, the Trekboer movement had begun to cross this landscape. According to Van Der Walt (2015), “The first Europeans to settle in the Northern Cape were missionaries, but there was a larger influx of white men into the

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province during the 1860s and 1870s when diamonds were discovered in Griqualand." The discovery of diamonds in the Northern Cape eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa.

The area proposed for the WEF development is located approximately 15km south of Sutherland. Sutherland was founded in 1855 as a church and market town to serve the area's sheep farmers. By 1872 the town had a population of 138 registered citizens living in 19 houses. During the Anglo-Boer War the church was used as a fort by garrisoned British soldiers. During the war a number of engagements between British and Boer forces occurred in the town and in its immediate surroundings. According to Van der Walt (2015), "Little evidence could be found of skirmishes or battles during the Anglo-Boer War (now referred to as the South African war) in the Sutherland area." Van der Walt further notes that "The Anglo Boer War left a wake of forts and blockhouses in the area. One such is Rebelskop, a hill topped by the ruins of a fort and named after a Boer division of 200 men that opposed the British forces. Under Commandant Abraham Louw, and reinforced by a further 50 men under the command of Albert Smith from Fraserburg, the rebels rained gunfire into the British-occupied town for 10 hours in a mini-siege. Other ruins are still visible on the road to Salpeterkop and on the farm Gunsfontein. Here two blockhouses stand on opposite sides of a cliff, guarding a pass (http://www.discoversutherland.co.za/)."

According to promotional information about the Gunsfontein farm, "Gunsfontein is the farm where poet NP van Wyk Louw was raised. The original farm dwelling was a corbelled house and dates back to +- 1756 . This house, still standing, has not been restored, but is still in a good condition. Other interesting historical remains are the ruins of old British forts with shooting holes – built during the Anglo-Boer War." The corbelled house is mapped below as site 24959 and a number of stone structures ascribed to the Anglo-Boer War are mapped below and listed in Appendix 1.

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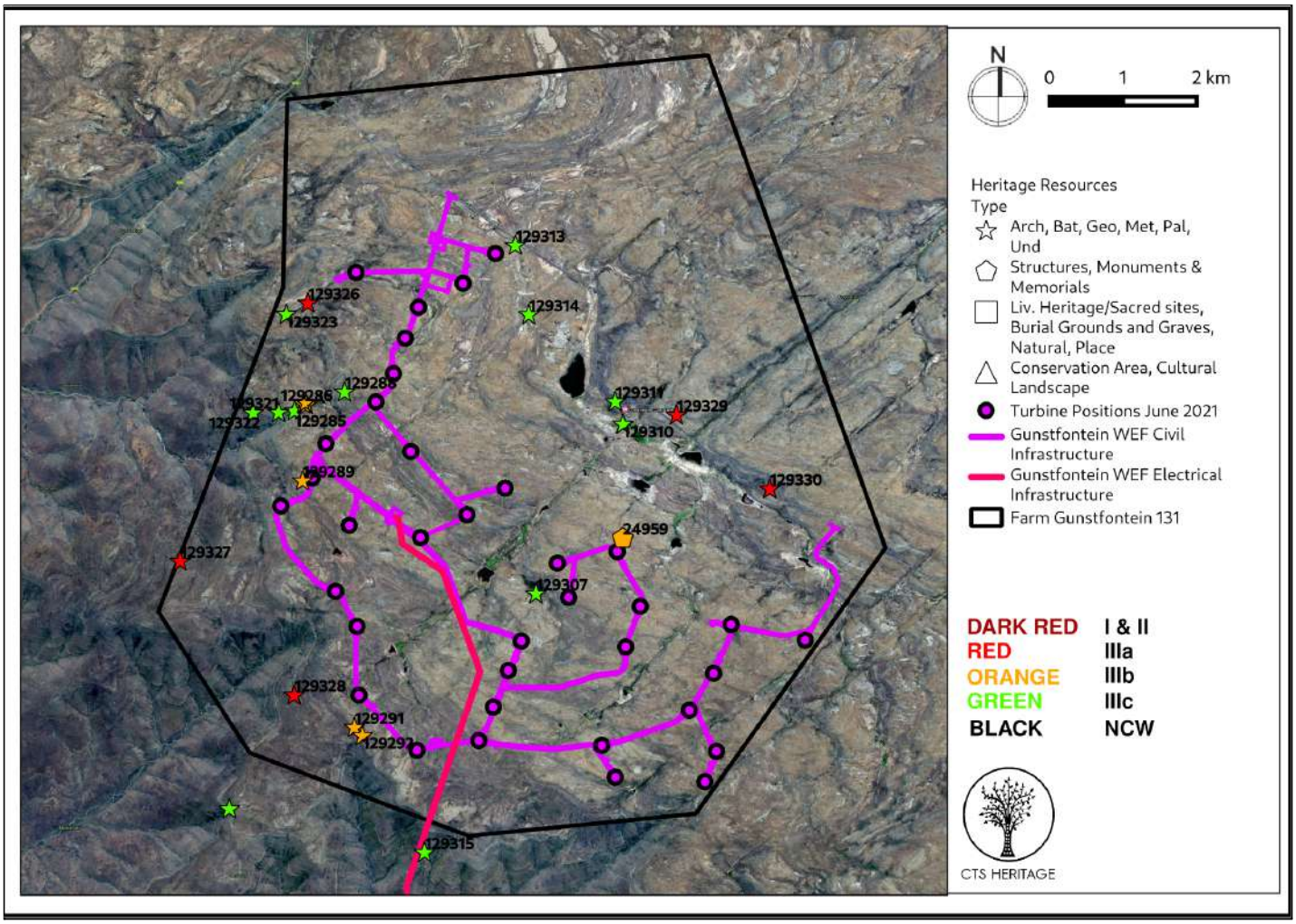

Figure 3.1. Heritage Resources Map. Heritage Resources previously identified in and near the study area from SAHRIS

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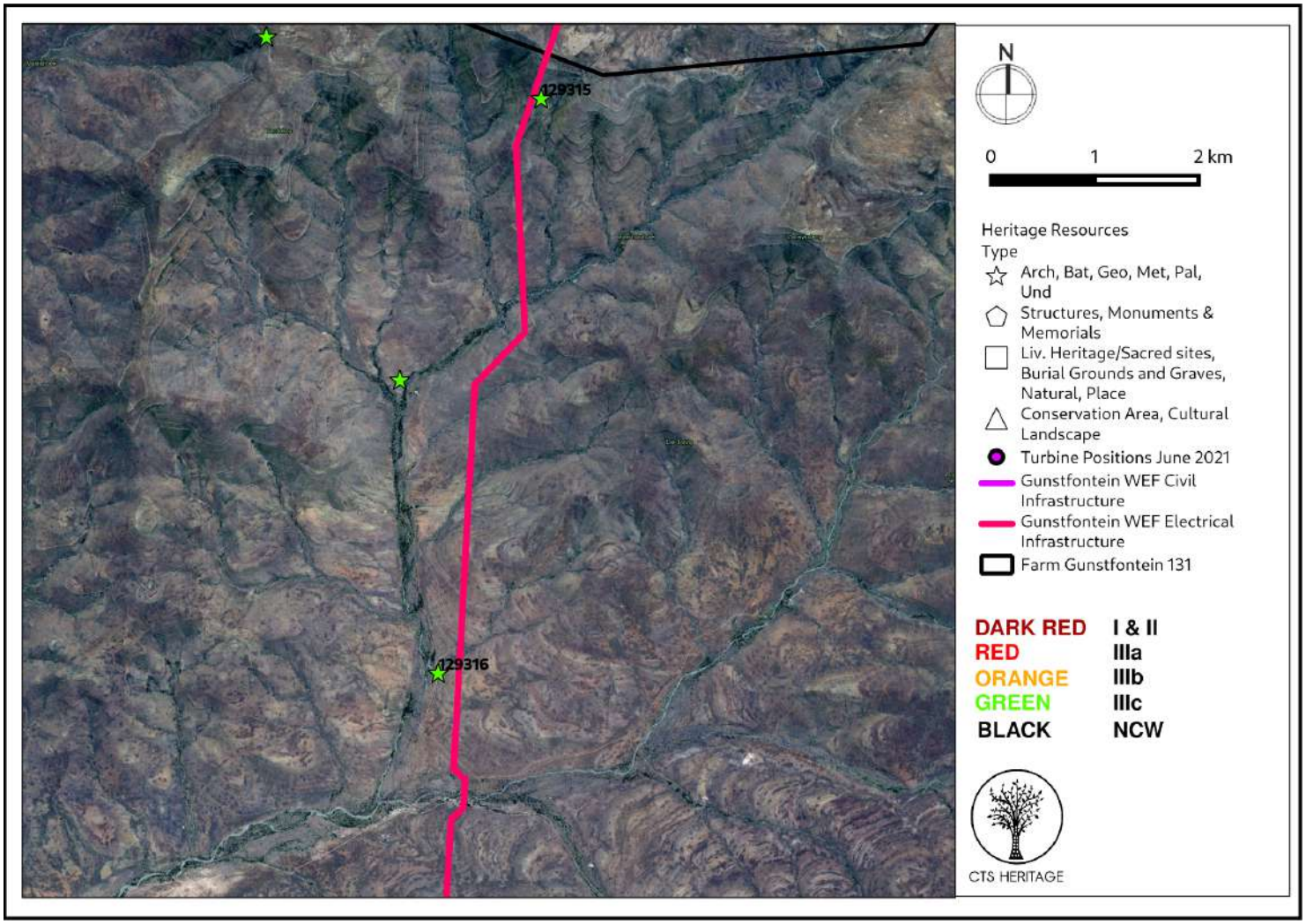

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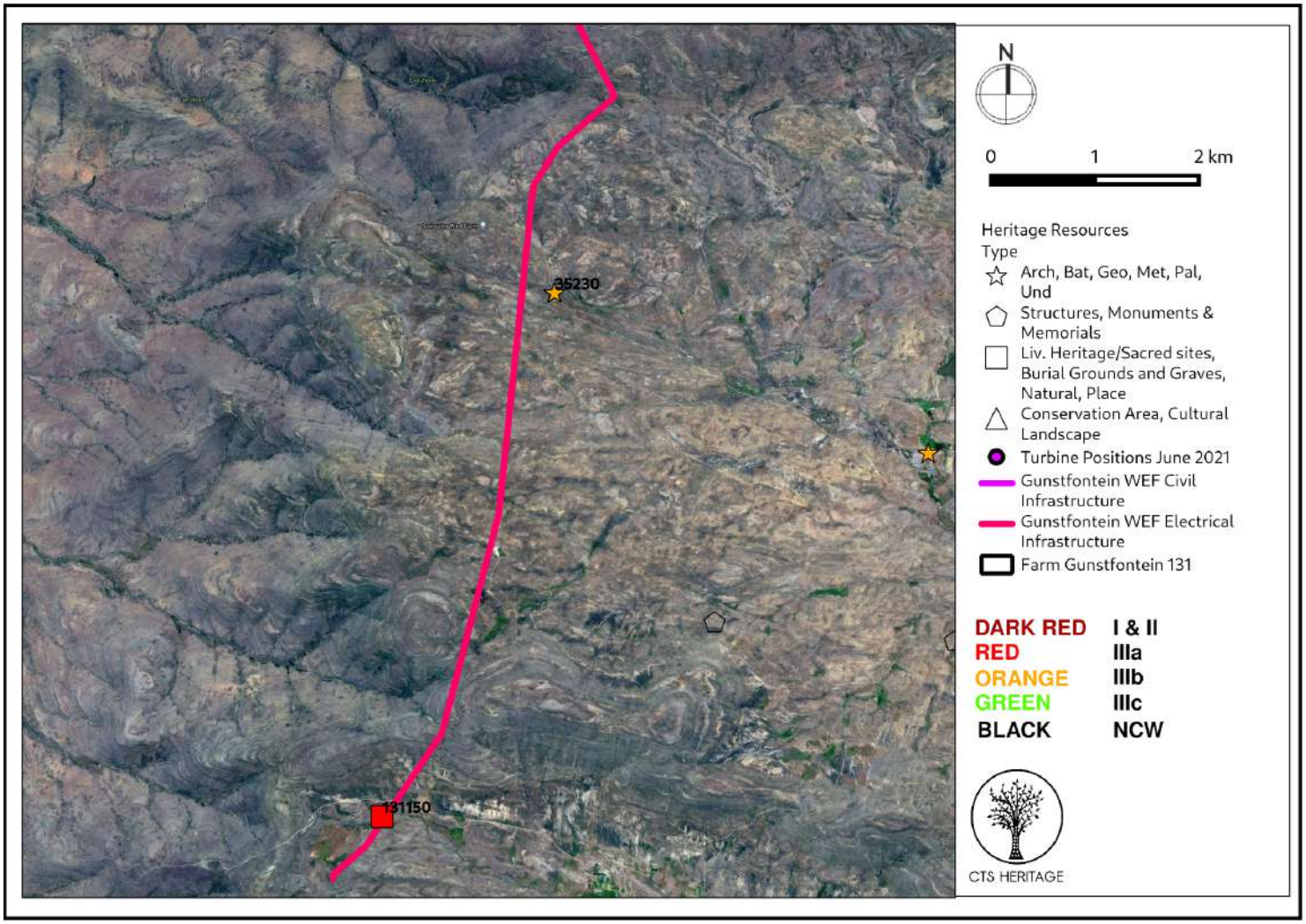

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4. IDENTIFICATION OF HERITAGE RESOURCES

4.1 Findings of previous assessments

The Remainder of the farm Gunstfontein 131 has been thoroughly assessed by Van der Walt in his report dated December 2015. In his assessment, he identified 8 sites of heritage significance which needed to be considered for the development of the Gunstfontein WEF. These sites have been mapped in Figures 3, 3.1, 3.2 and 3.3 and documented in Appendix 1. Van der Walt (2015) recorded a few background scatters of isolated stone artefacts in rocky areas consisting of miscellaneous LSA flakes and flaked pieces, usually located near to large boulders. These observations were not considered to be conservation-worthy. He further identified one rock art site as well as historical structures including two types of block house, ruins of agricultural structures and a stone cairn feature.

The proposed Gunstfontein OHL falls immediately adjacent to the Soetwater OHL. The area proposed for development, including the existing Soetwater OHL, has been previously assessed for impacts to heritage resources (Case 218) including an Archaeological Field Assessment (Booth, 2012, SAHRIS ID 44935) and SAHRA's requested walk down of both the Soetwater and Karusa WEFs (Booth, 2015, SAHRIS ID 353706, 353709). In Booth's (2012) assessment, she identified no archaeological heritage remains within the areas proposed for the Soetwater turbines. Booth (2012) did identify a historical farm complex and associated infrastructure and a family graveyard. In addition, Booth (2012) identified a dry packed stone wall structure located along the farm road on Portion 1 of Farm Orange Fontein 203. Also on this farm were noted the ruins of clay packed stone wall cottage and a dry packed stone wall kraal. One of the known archaeological sites located in closest proximity to the proposed OHL (SAHRIS Site ID 35230) is described as a "dry stone packed walling dwelling documented next to the farm gravel road leading to the current wind mast. Most of the structure is still intact although some areas of the wall have already collapsed and is currently overgrown by bushes. The roof or cover that may have been attached is not evident. A few fragments of broken glass and ceramic sherds were scattered south of the feature. The dwelling may have been occupied by a shepherd as it is situated near a reservoir water point." This site is located approximately 300m from the proposed powerline route and falls outside of the 300m wide assessment corridor. No additional heritage resources were identified in the walk down assessment conducted by Booth in 2015.

Furthermore, the development of the approved and existing Soetwater OHL and substation was subject to a specialist archaeological assessment (Booth, 2015 SAHRIS Case 8657 and 8658 Report ID 341109). In her assessment, Booth (2015) concluded that no archaeological or heritage resources were identified within the proposed powerline route for the Soetwater OHL and substation. Based on the information available for the area proposed for development, it is very unlikely that the proposed extension of the Gunstfontein 132kV OHL will negatively impact on significant archaeological or built environment heritage resources.

In a recent walkdown of the proposed Soetwater OHL (July 2020), a stone packed feature (possible burial) was identified within the proposed OHL corridor for Gunsfontein. This site is recorded on SAHRIS as Site 131150 and is described in detail by Booth (2020, SAHRIS NID 539589, Case ID 15452); "The stone packed feature cannot be confirmed as being a grave unless systematic excavations are conducted to establish whether the area contains a burial. This

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method of mitigation is however the least preferred. The stone packed feature may be established as being older than 30 years owing the landowner and farm staff being unaware of its origin or existence, or older than the establishment of colonial settlements and farming activities within the area. However, the more recent-looking packing of the stones may not confirm that the feature is older than 100 years." Booth (2020) makes the following recommendations regarding this site in reference to the Soetwater OHL, which have been endorsed and added to by SAHRA (September 2020):

- The stone packed feature should be fenced with an entry gate and clearly demarcated prior to the construction activities for the establishment of pylon No. 5. SAHRA's previous recommendations (26 May 2014) stipulate that the fence be placed 5 meters away from the perimeter of the graves and that no development is allowed within 30 meters of the fence line surrounding the graves. However, it is acceptable that the relocation of Pylon No. 5 be shifted 15 m south to allow for a 5 m buffer between the stone packed feature and the fence and therefore allow a 10 m buffer between the fence and tower, taking into consideration the limiting factors mentioned above.
- General fencing materials may be used, mesh fencing approximately 1.2 m in height, and treated wooden droppers as the corner posts, approximately 5 cm in width, or similar alternative materials.
- The environmental control officers (ECOs) must liaise with the archaeologist regarding the fencing materials being used for the erection of the fence, the planned area for the establishment of the fence, during the erection and completion of the fence, as well as during the construction of the tower.
- At this point it is not necessary for the archaeologist to be on-site during the construction of the fence and pylon if the ECO keeps in contact with the archaeologist, as in recommendation 3.

This site was fenced off when observed during the walkdown for this report by the construction team for the Soetwater WEF. We think it is highly unlikely to be a burial site and it is more than likely another historical beacon similar to one identified on a neighbouring farm.

Figure 5.1: Contextual Image of development area - Typical plateau with residual sandy soils near proposed substation (North Western side of project) and typical flat lying siltstones and greywacke

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Figure 5.2: Contextual Image of development area - Typical landscape of proposed wind turbines: Moderate to sparse vegetation on sandy soils and Typical ephemeral stream within sandy soils within WEF footprint


Figure 5.3: Contextual Image of development area - Deflated plain with scattered rock fragments and typical sandy plateau with greywacke boulders and sparse vegetation

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Figure 5.4: Contextual Images of Development Area - Commonly observed bioturbation within thick sandy soils and typical erosional gulley with exposed greywacke outcrop

Figure 5.5: Contextual Images of Development Area - Typical flat lying greywacke outcrop and typical vegetation and rock outcrop near proposed wind turbines

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Figure 5.6: Contextual Images of Development Area - Sandy soils disturbed by frequent trampling by livestock and red poles in cleared areas mark the location of proposed wind turbines

Figure 5.7: Contextual Images of Landscape - Exposed rock at construction site near OHL extension and typical vegetation cover in the area with moderate to sparse vegetation on sandy soils

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Figure 5.8: Contextual Images of Development Area - View of the proposed OHL extension looking south with scattered greywacke boulders and sample pits identified along the proposed OHL extension

Figure 5.9: Contextual Images of Development Area - Access tracks created for sample pits and offloading equipment and eroded gulley near proposed OHL extension

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Figure 5.10: Contextual Images of Development Area - Sparsely vegetated patches with extensive bioturbation, within the proposed development area and road construction on hilltops of nearby wind farms evident, looking south along OHL extension line.

Figure 5.11: Contextual Images of Development Area - Sandy shale surface and typical karoo vegetation within the proposed development area and current construction evident for nearby wind farms, looking towards southern end of OHL extension

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Figure 5.12: Contextual Images of Development Area - "4x4 track" on Gunstfontein farm, looking south down line from mountain top and Mountainous terrain with dense vegetation along the OHL

Figure 5.13: Contextual Images of Development Area - Ephemeral streams are located at the base of the mountainous area. Looking south from greywacke outcrop along the proposed OHL and typical greywacke scree slope with moderate to dense vegetation occurring along the OHL

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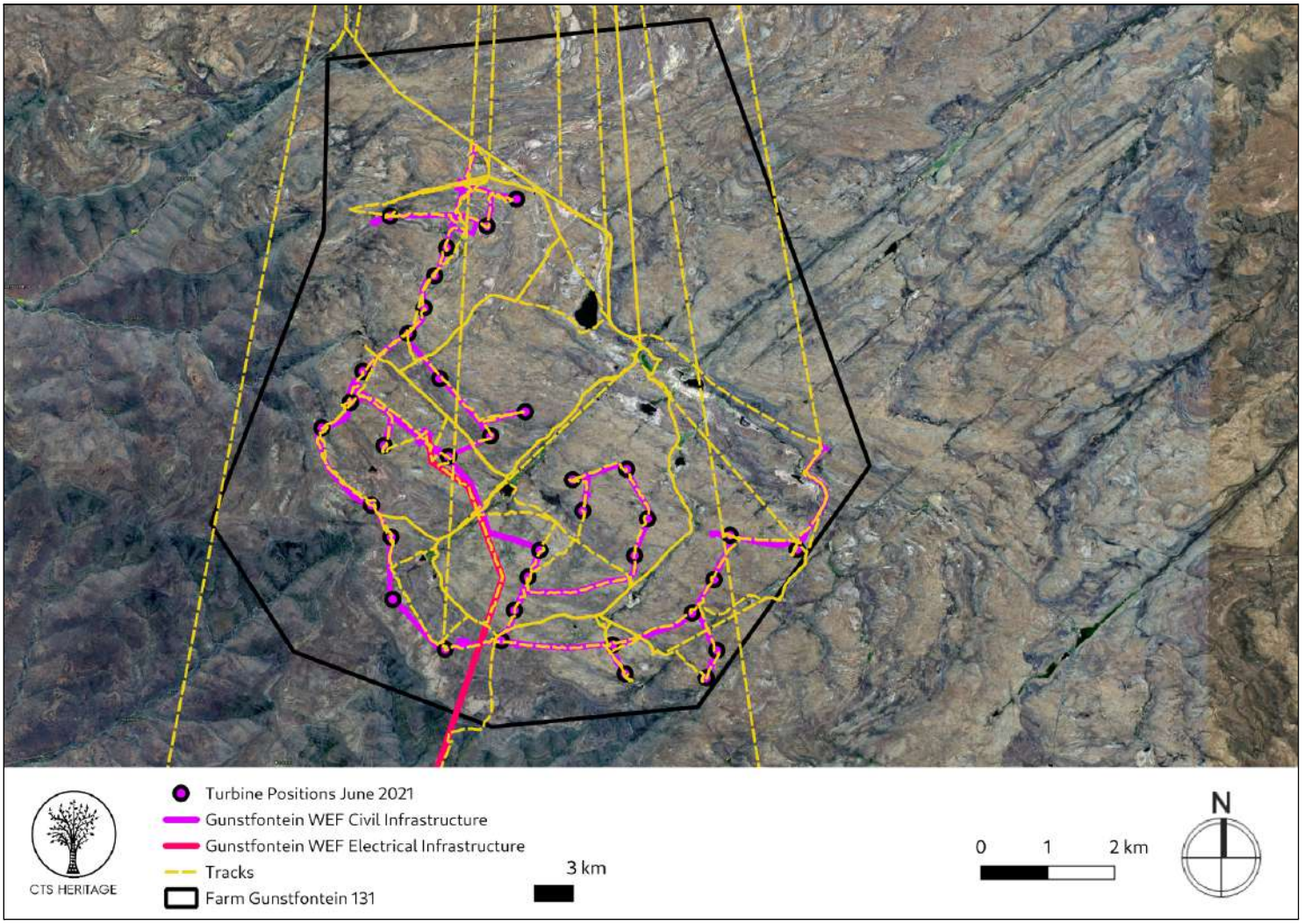

Figure 6.1: Overall track paths of foot survey from November 2020 and May 2021 - WEF Area (the straight lines are remnant GPS tracks and were not physically walked by the specialist)

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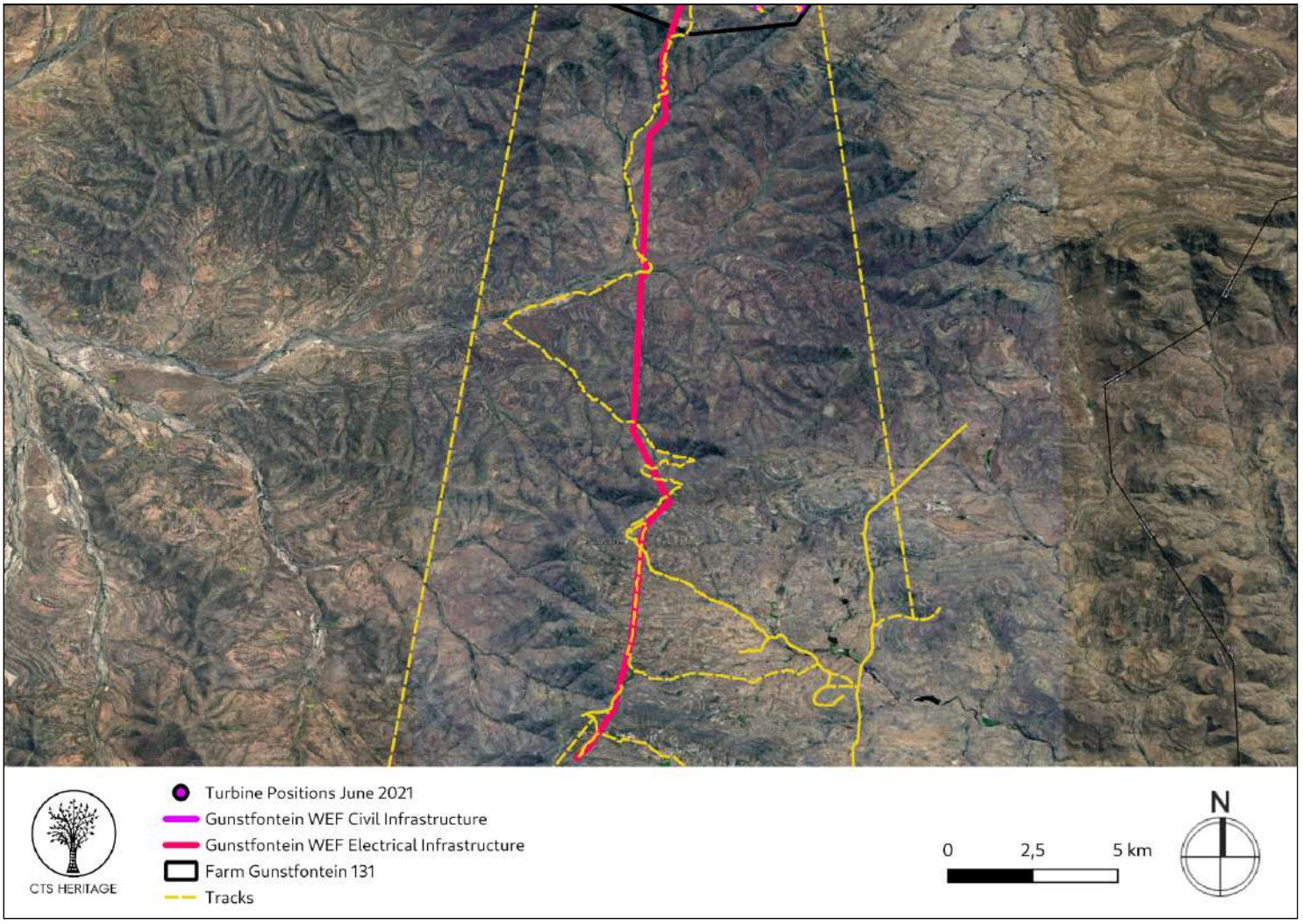

Figure 6.2: Overall track paths of foot survey - OHL Alignment (the straight lines are remnant GPS tracks and were not physically walked by the specialist)

4.2 Heritage Resources identified in the Walkdown

In general, across the whole of the study region the area was sparsely to moderately vegetated. Taller and denser vegetation occurred on and close to the ridges and high lying areas. Euphorbia dominated vegetation was a characteristic of the valley areas with ephemeral streams. The different landscape features within the proposed development footprint comprised areas of; (a) steep scree slopes with scattered greywacke boulders, (b) flat lying greywacke outcrops, (c) sandy plateaus with extensive bioturbation. A large percentage of the area was covered by light brown sandy residual and wind blown soils.

Heritage resources identified within the proposed development area included archaeological and built environment features. Only a few lithics comprising patinated silcrete and hornfels were identified. Almost all built environment features were found along valley bottoms or on open plains or rock plateaus. No archaeological resources were identified on the steep scree slopes. Several stone ruins were the only significant findings in the region assigned for the development on the Gunstfontein farm. A rectangular, dry stacked stone-built kraal (likely historic in age) and a disused

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stone and mudbrick-built farm dwelling with associated stone outbuildings were identified during the OHL survey. The lack of natural shelters, in addition to the extreme climate conditions and a lack of water throughout the areas of the proposed development most likely made the area unattractive for prehistoric occupation.

Table 2: Archaeological, palaeontological and built environment observations noted during both walk downs

Site No.	Site Name	Description	Co-ordinates		Grading
G001	**Gunstfontein 001**	Greywacke fragments resembling flakes typically associated with natural exfoliation.	-32.757382°	20.644535°	NCW
G002	**Gunstfontein 002**	Medium sized rectangular dry-stone wall kraal	-32.681117°	20.644240°	IIIb
G003	**Gunstfontein 003**	Intensely patinated silcrete/hornfels flake located near ephemeral stream.	-32.679318°	20.644585°	NCW
G004	**Gunstfontein 004**	Ruined stone and mudbrick structure comprising 3 rooms. 2 associated stone outbuildings.	-32.710843°	20.624805°	IIIc
G005	**Gunstfontein 005**	Ruined rectangular stone structure with 3 rooms	-32.547828°	20.643053°	IIIc
G006	**Gunstfontein 006**	Patinated hornfels flake	-32.545358°	20.652901°	NCW
G007	**Gunstfontein 007**	Poorly constructed stone feature	-32.557432°	20.665633°	NCW
G008	**Gunstfontein 008**	Stone farm beacon	-32.565295°	20.654017°	IIIc
G009	**Gunstfontein 009**	Silcrete Flake	-32.566010°	20.645320°	NCW
G010	**Gunstfontein 010**	Two roomed dry stone ruin (possible shepherd shelter) *Same as SAHRIS Site ID 129289*	-32.574988°	20.635893°	IIIb
G011	**Gunstfontein 011**	Two roomed dry stone ruin, collapsed (possible shepherd shelter)	-32.576176°	20.635954°	IIIc
G012	**Gunstfontein 012**	Fossilised wood	-32.574824°	20.641345°	NCW
G013	**Gunstfontein 013**	Rudimentary dry stone structure	-32.606707°	20.651903°	IIIc
G014	**Gunstfontein 014**	Stone walling associated with dam	-32.580934°	20.690000°	IIIc
G015	**Gunstfontein 015**	Fossilised wood	-32.607653°	20.673382°	NCW
G016	**Gunstfontein 016**	Microlithic (ferricrete)	-32.545331°	20.655035°	NCW
G017	**Gunstfontein 017**	Corbelled House	-32.568211°	20.682295°	IIIb
G018	**Gunstfontein 018**	Stone farm beacon incorporated into fencing	-32.568003°	20.682430°	IIIc
G019	**Gunstfontein 019**	Hornfels flake, MSA	-32.54504	20.65863	NCW
G020	**Gunstfontein 020**	Yellow silcrete flake, MSA	-32.54658	20.65976	NCW
G021	**Gunstfontein 021**	Brown hornfels flake, MSA	-32.55012	20.65928	NCW
G022	**Gunstfontein 022**	Hornfels flake, very thin, MSA	-32.55011	20.65503	NCW
G023	**Gunstfontein 023**	Two silcrete flakes, MSA	-32.56896	20.64951	NCW

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4.3 Selected photographic record

(a full photographic record is available upon request)


Figure 7.1: Observation G001 - Example of exfoliated greywacke and G002 Rectangular dry-stone walled kraal

Figure 7.2: Observation G003 Intensely patinated silcrete/hornfels flake located near ephemeral stream and G004 abandoned stone and mud-bricked dwelling

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Figure 7.3: Observation G005: Three room rectangular stone ruin

Figure 7.4: Observatio G006: Patinated hornfels flake, G007: Poorly constructed stone feature adjacent to jeep track and G008: Stone beacon (approx. 1mx1m)

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Figure 7.5 Observation G009: Silcrete flake and G010: Two roomed dry stone ruin (possibly a shepherds shelter)

Figure 7.6 Observation G011: Collapsed two roomed dry stone ruin and G013: Rudimentary dry stone structure

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Figure 7.7 Observation G014: Stone walling associated with dam and G015: fossilised wood

Figure 7.8 Observation G016: Microlithic (ferricrete) and G017: Corbelled house

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5. ASSESSMENT OF THE IMPACT OF THE DEVELOPMENT

5.1 Assessment of impact to Archaeological Resources

It is unlikely that the proposed development of the WEF and its associated infrastructure will negatively impact on significant archaeological heritage, on the condition that developers ensure that the OHL pylons are not placed near the identified stone kraal (G002) and that a buffer (60m) is placed around the identified stone ruins near GF10.

Based on the walkdown assessment completed, the area proposed for development has an overall low archaeological sensitivity. The heritage resources identified during this walkdown assessment mapped in relation to the final layout in Figure 8. It is unlikely that the proposed development of the turbines, cables and roads associated with the WEF will negatively impact on significant archaeological or palaeontological heritage. The identified built environment resources and graves do not fall within the development footprint and will not be directly impacted. Furthermore, all recommended mitigation measures for the approved Gunstfontein WEF as required by SAHRA (ie. 60m buffer area around all heritage resources) have been applied in the final layout.

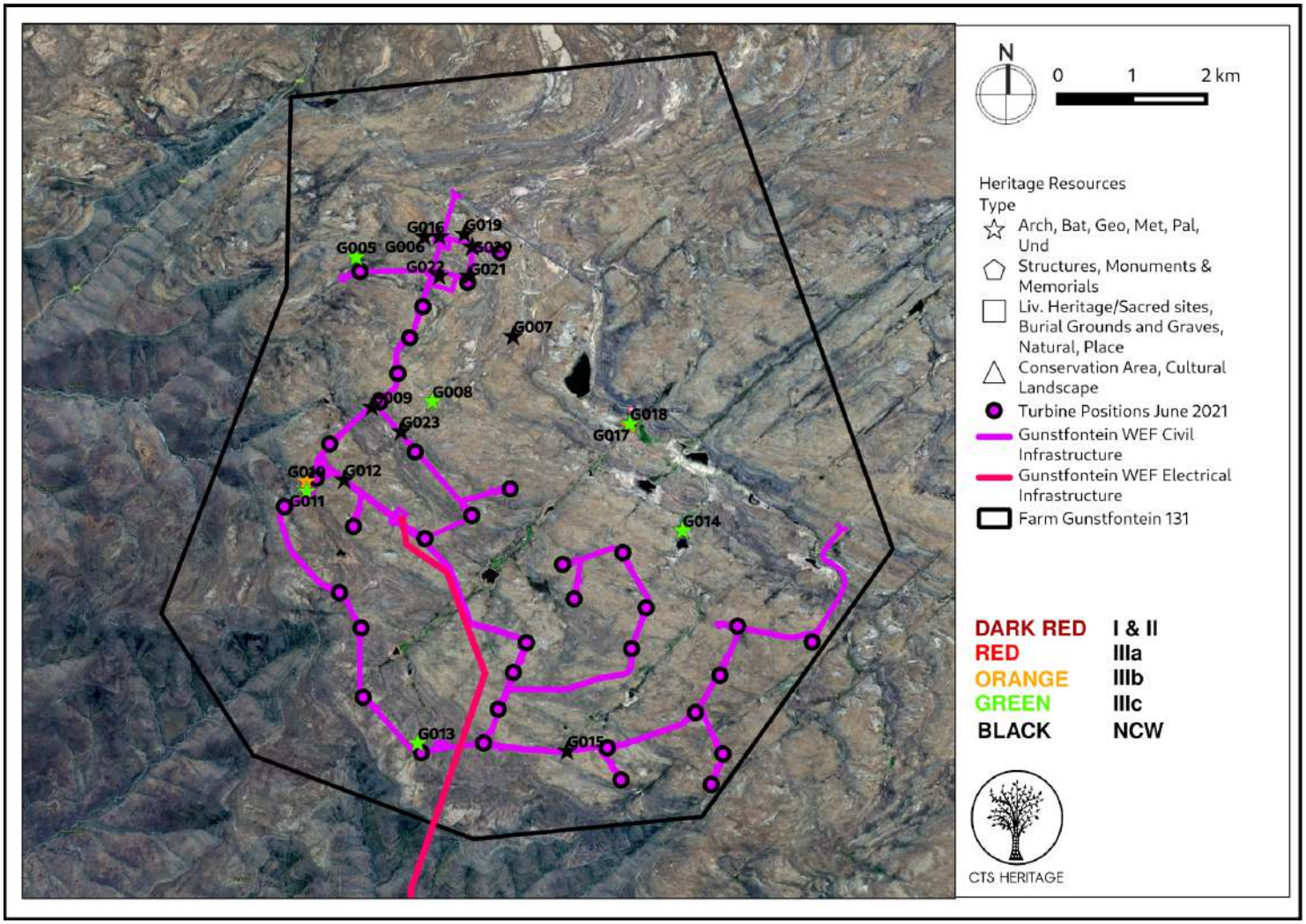

Figure 8.1: Map of heritage resources identified during both field assessments relative to the final proposed development footprint

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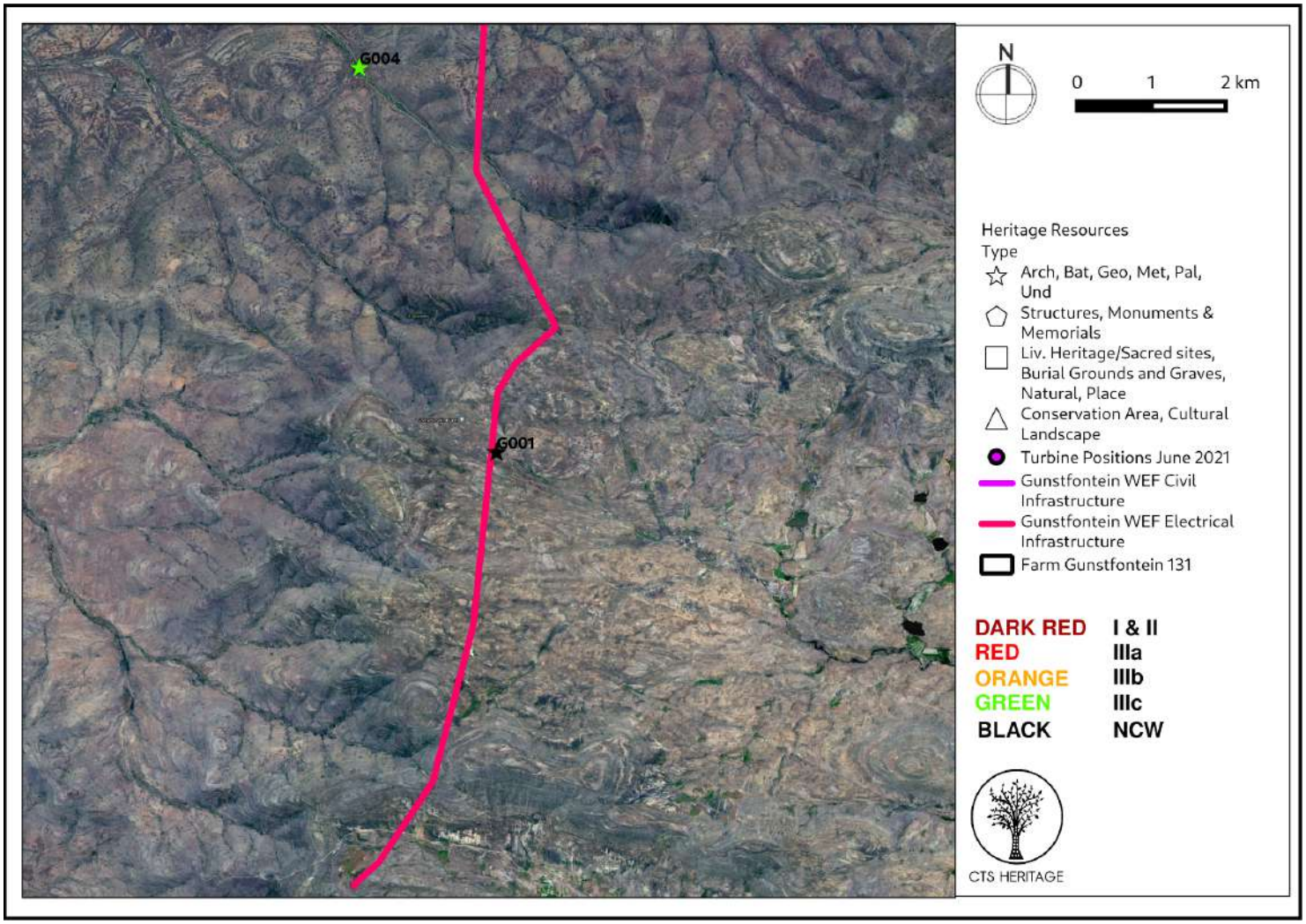

Figure 8.2: Map of heritage resources identified during the field assessment relative to the final proposed development footprint

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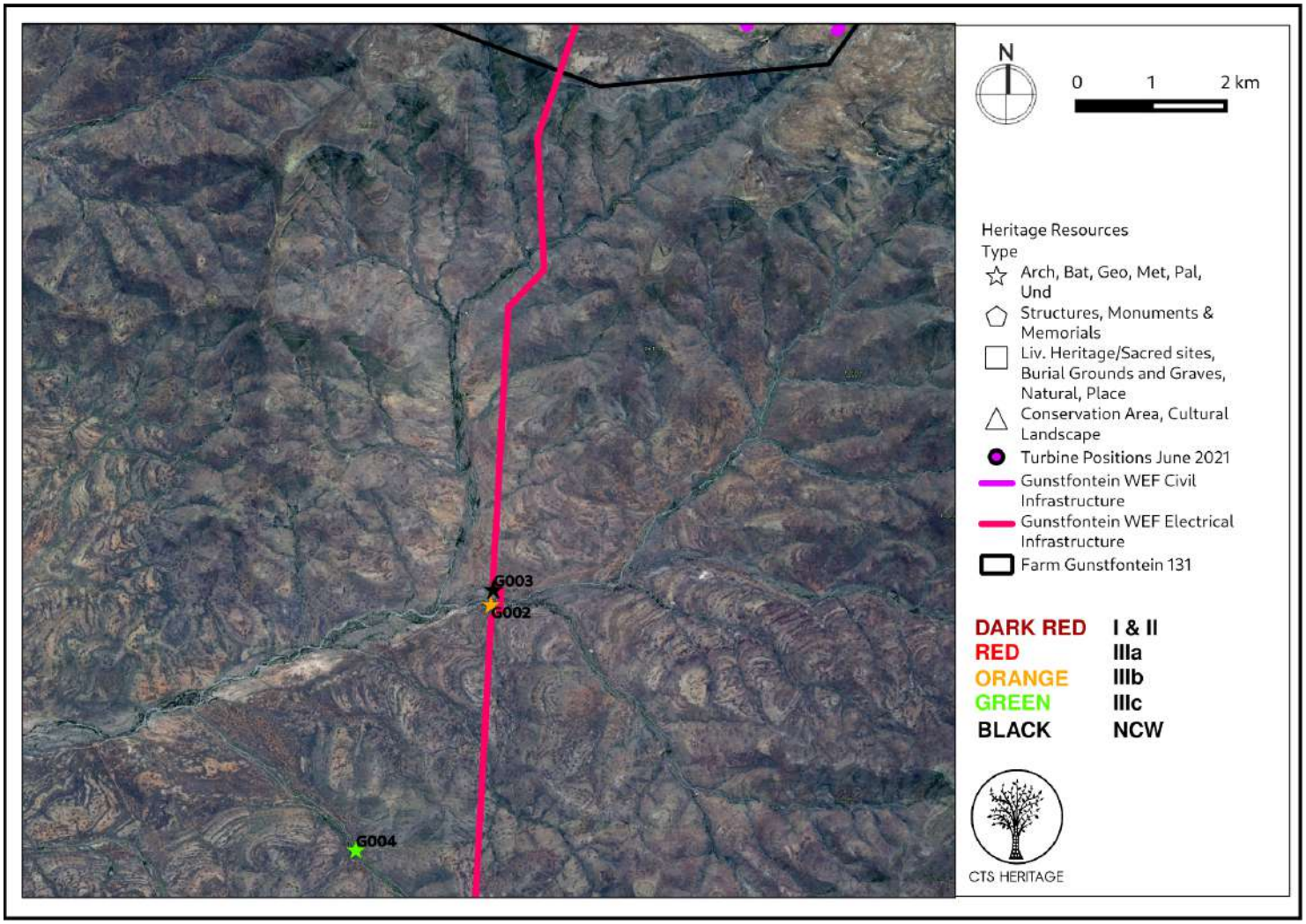

Figure 8.3: Map of heritage resources identified during the field assessment relative to the final proposed development footprint

6. CONCLUSION AND RECOMMENDATIONS

Based on the outcomes of the required walkdown, it is not anticipated that the proposed development of turbines, cables, grid connections and roads associated with the proposed WEF will negatively impact on significant archaeological heritage and as such, there is no heritage objection to the final alignment proposed for the WEF development. The identified built environment and graves do not fall within the development footprint and will not be directly impacted. Furthermore, all recommended mitigation measures for the approved Gunstfontein WEF and OHL as required by SAHRA (ie. 60m buffer area around all heritage resources) have been applied in the final layout.

The findings of this walkdown assessment align with the conclusions of the findings of the archaeological assessment conducted for the Gunsfontein WEF (Van der Walt 2015) which identified eight heritage resources consisting of "of Anglo Boer War (South African War) fortifications, rock art, stone cairns and farm labourer ruins…" Through this walkdown process, an additional ten conservation-worthy heritage resources were identified located in proximity to the final layout. Based on current plans, none of the known heritage resources located on Gunsfontein farm and other properties

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traversed by the OHL identified either by Van der Walt (2015) or in this report will be directly impacted by the final layout.

Please see figures 9.1 to 9.9 for maps of all known heritage resources (with SAHRIS IDs and observations IDs) relative to the final Gunstfontein WEF Layout and associated infrastructure. These are included in Table 3 below.

Table 3: Sites located within close proximity to the final layout

Site No.	Site Name	Description	Co-ordinates		Grading	Mitigation
G001	**Gunstfontein 001**	Greywacke fragments resembling flakes typically associated with natural exfoliation.	-32.757382°	20.644535°	NCW	Located more than 60m from the nearest proposed infrastructure
G002	**Gunstfontein 002**	Medium sized rectangular dry-stone wall kraal	-32.681117°	20.644240°	IIIb	OHL alignment has been diverted around sites. As per SAHRA Comments, a 60m buffer is required from pylon footings although the actual OHL line may pass overhead
G003	**Gunstfontein 003**	Intensely patinated silcrete/hornfels flake located near ephemeral stream.	-32.679318°	20.644585°	NCW	OHL alignment has been diverted around sites. As per SAHRA Comments, a 60m buffer is required from pylon footings although the actual OHL line may pass overhead
G005	**Gunstfontein 005**	Ruined rectangular stone structure with 3 rooms	-32.547828°	20.643053°	IIIc	Located more than 60m from the nearest proposed infrastructure
G006	**Gunstfontein 006**	Patinated hornfels flake	-32.545358°	20.652901°	NCW	None required
G009	**Gunstfontein 009**	Silcrete Flake	-32.566010°	20.645320°	NCW	None required
G010	**Gunstfontein 010**	Two roomed dry stone ruin (shepherd shelter?) *Same as SAHRIS Site ID 129289*	-32.574988°	20.635893°	IIIb	Located more than 60m from the nearest proposed infrastructure
G011	**Gunstfontein 011**	Two roomed dry stone ruin, collapsed (possible shepherd shelter)	-32.576176°	20.635954°	IIIc	Located more than 60m from the nearest proposed infrastructure
G012	**Gunstfontein 012**	Fossilised wood	-32.574824°	20.641345°	NCW	None required
G013	**Gunstfontein 013**	Rudimentary dry stone structure	-32.606707°	20.651903°	IIIc	Located more than 60m from the nearest proposed infrastructure
G015	**Gunstfontein 015**	Fossilised wood	-32.607653°	20.673382°	NCW	None required
G016	**Gunstfontein 016**	Microlithic (ferricrete)	-32.545331°	20.655035°	NCW	None required
G020	**Gunstfontein 020**	Yellow silcrete flake, MSA	-32.54658	20.65976	NCW	None required
G021	**Gunstfontein 021**	Brown hornfels flake, MSA	-32.55012	20.65928	NCW	None required
G022	**Gunstfontein 022**	Hornfels flake, very thin, MSA	-32.55011	20.65503	NCW	None required
131150	**De Hoop 001**	Burial Grounds & Graves	-32,8045	20,629181	IIIa	See detailed recommendations from Booth (2020) repeated below

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35230	**Hidden Valley 05**	Stone walling	-32,759278	20,646889	IIIb	Located more than 60m from the nearest proposed infrastructure
129315	**Gunstfontein 106**	Geological	-32,620358	20,653533	IIIc	Located more than 60m from the nearest proposed infrastructure
129316	**Gunstfontein 107**	Geological	-32,670081	20,642944	IIIc	Located more than 60m from the nearest proposed infrastructure

In a recent walkdown of the proposed Soetwater OHL (July 2020), a stone packed feature (possible burial) was identified within the proposed OHL corridor for Gunsfontein. This site is recorded on SAHRIS as Site 131150 and is described in detail by Booth (2020, SAHRIS NID 539589, Case ID 15452); "The stone packed feature cannot be confirmed as being a grave unless systematic excavations are conducted to establish whether the area contains a burial. This method of mitigation is however the least preferred. The stone packed feature may be established as being older than 30 years owing the landowner and farm staff being unaware of its origin or existence, or older than the establishment of colonial settlements and farming activities within the area. However, the more recent-looking packing of the stones may not confirm that the feature is older than 100 years." Booth (2020) a number of recommendations regarding this site, which have been endorsed and added to by SAHRA (September 2020). This site was fenced off when observed during the walkdown for this report by the construction team for the Soetwater WEF. We think it is highly unlikely to be a burial site and it is more than likely another historical beacon similar to one identified on a neighbouring farm.

Observations G010 and G011 are located in close proximity to proposed infrastructure in the final layout and as such, the final layout has been amended to ensure compliance with SAHRA's requirement for a 60m buffer around these sites.

The relevant conditions and recommendations from SAHRA in response to the initial HIA submissions for the WEF (CaseID 88383) remain applicable and are repeated below for ease of reference. It is recommended that the below requirements replace and supercede all previous requirements issued by SAHRA and included in the final EMPr:

- A bufferzone of 60 m must be maintained from all identified heritage and palaeontological resources. Micro adjustment of all relevant proposed infrastructure must occur in order to achieve this. The final layout as assessed in this walkdown report complies with this requirement.
- The stone cairn/possible grave (Feature 4, SAHRIS ID 129288), should be demarcated and fenced off with a perimeter buffer zone of 60m;
- A Conservation Management Plan for the WEF must be developed to ensure the on-going conservation of identified heritage resources during the life of the development. The report must include a map of all identified heritage and palaeontological resources with buffer zones of 60 m in relation to the proposed development. This report must be submitted to SAHRA if the EA has been approved and must form part of the final EMPr;
- Palaeontological Monitoring of the construction phase can be conducted by a suitable qualified Environmental Control Officer, punctuated by regular site visits by a qualified palaeontologist. Proof of training must be presented to SAHRA and regular monitoring reports must be submitted to SAHRA;

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- If concentrations of pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work must cease immediately and be reported to the archaeologist and/or the South African Heritage Resources Authority (SAHRA) (021 462 4502) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts may then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.

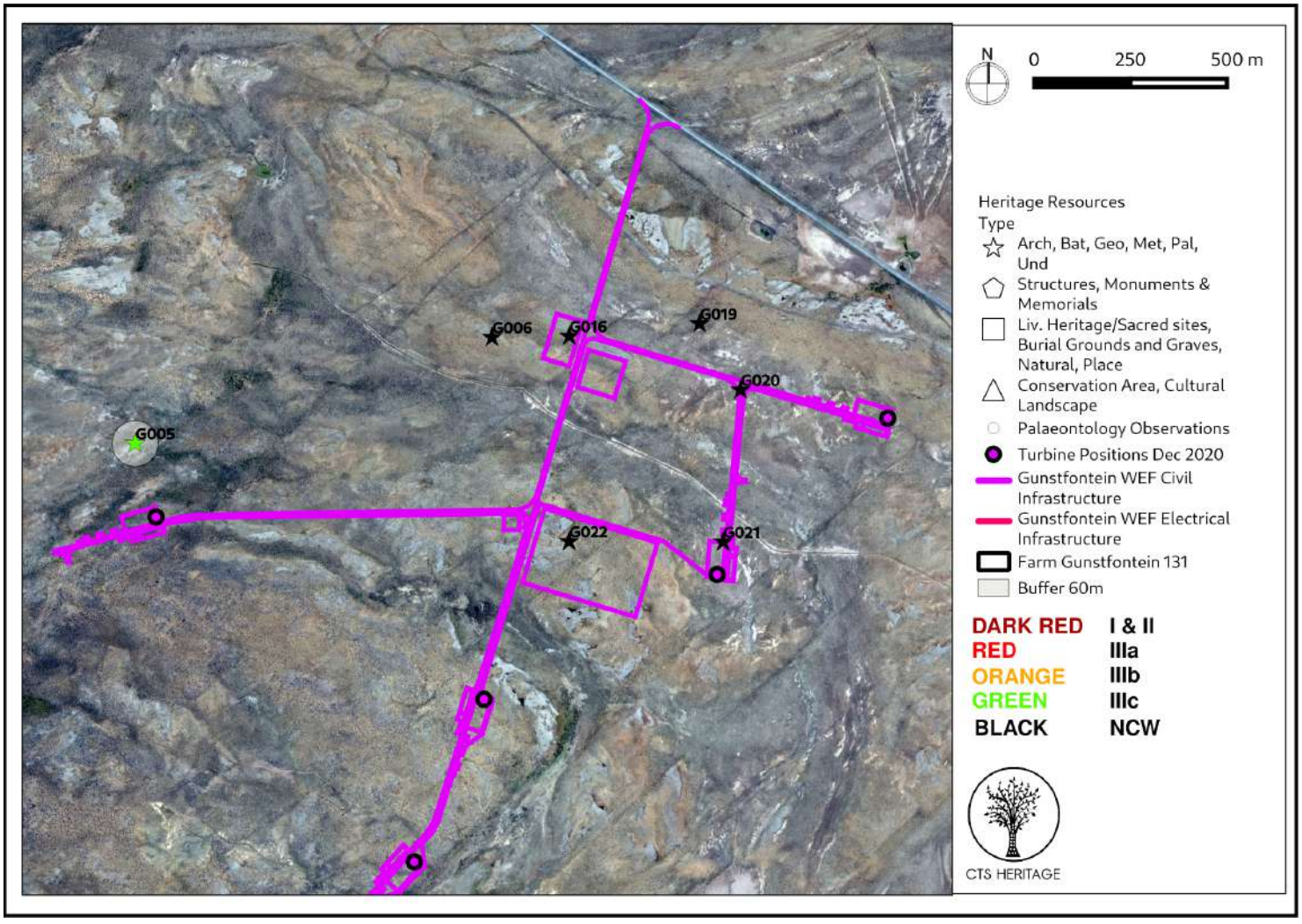

Figure 9.1: Map of all known heritage resources (with SAHRIS IDs and site IDs) relative to the final Gunstfontein WEF Layout

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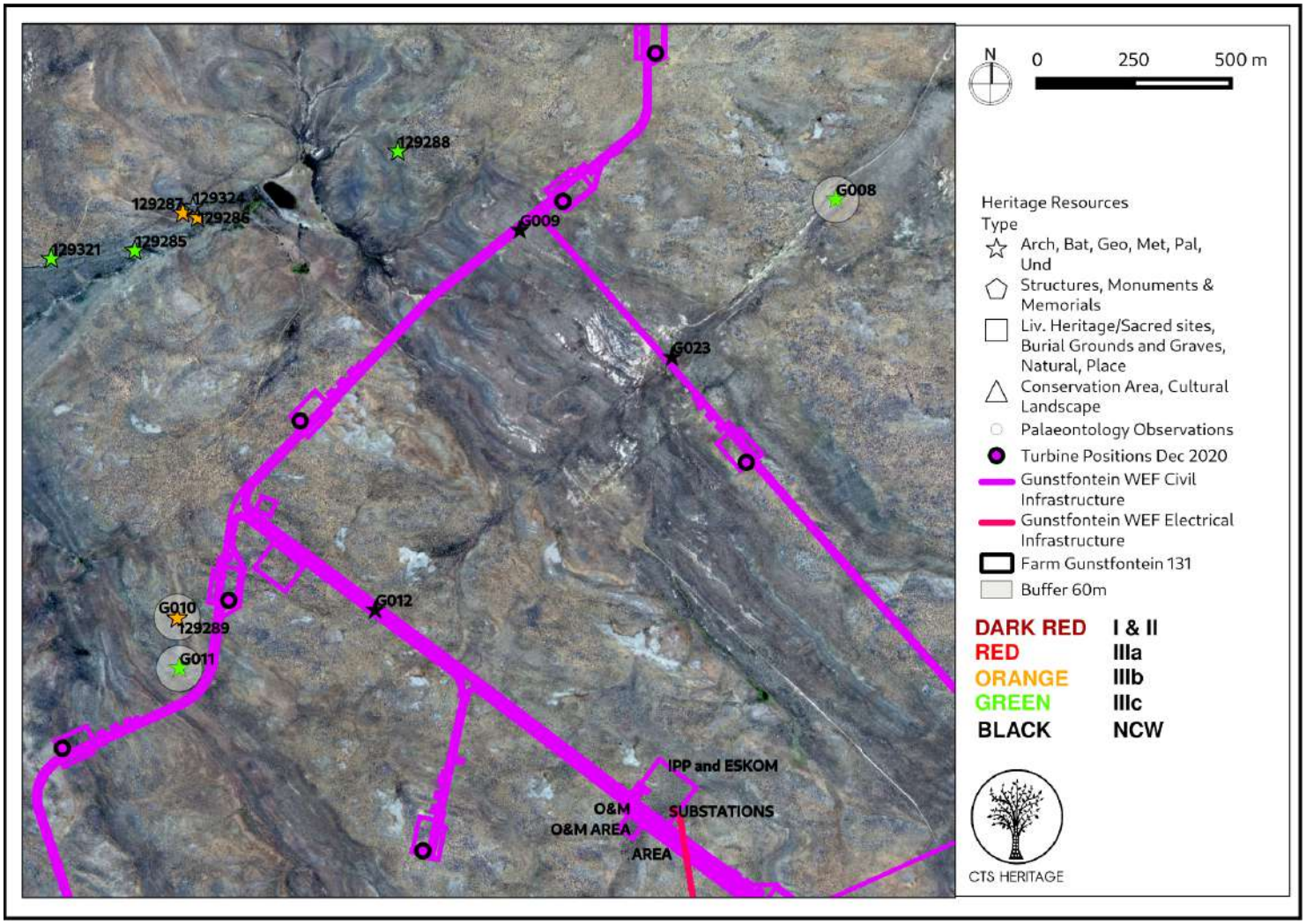

Figure 9.2: Map of all known heritage resources (with SAHRIS IDs and site IDs) relative to the final Gunstfontein WEF Layout

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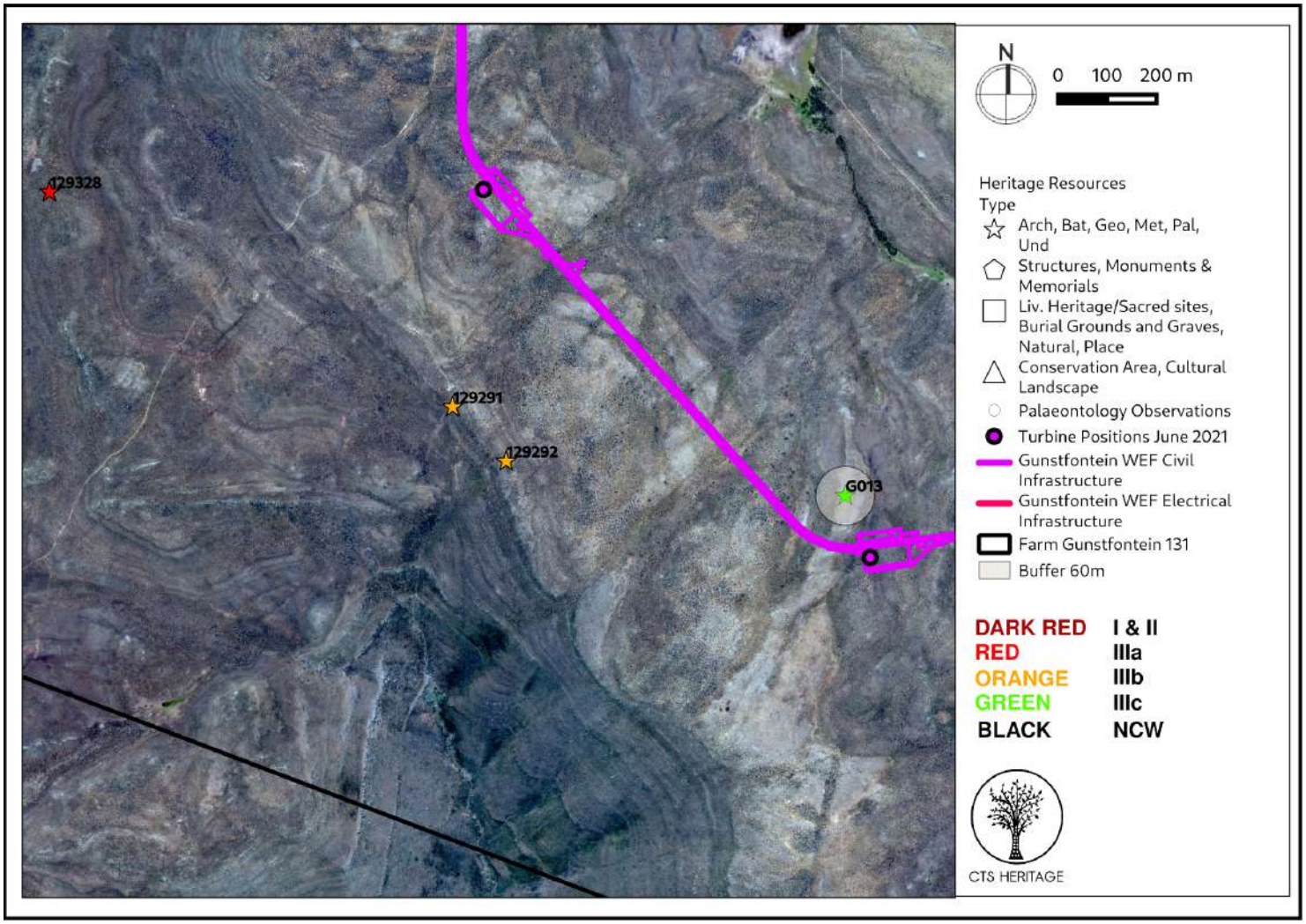

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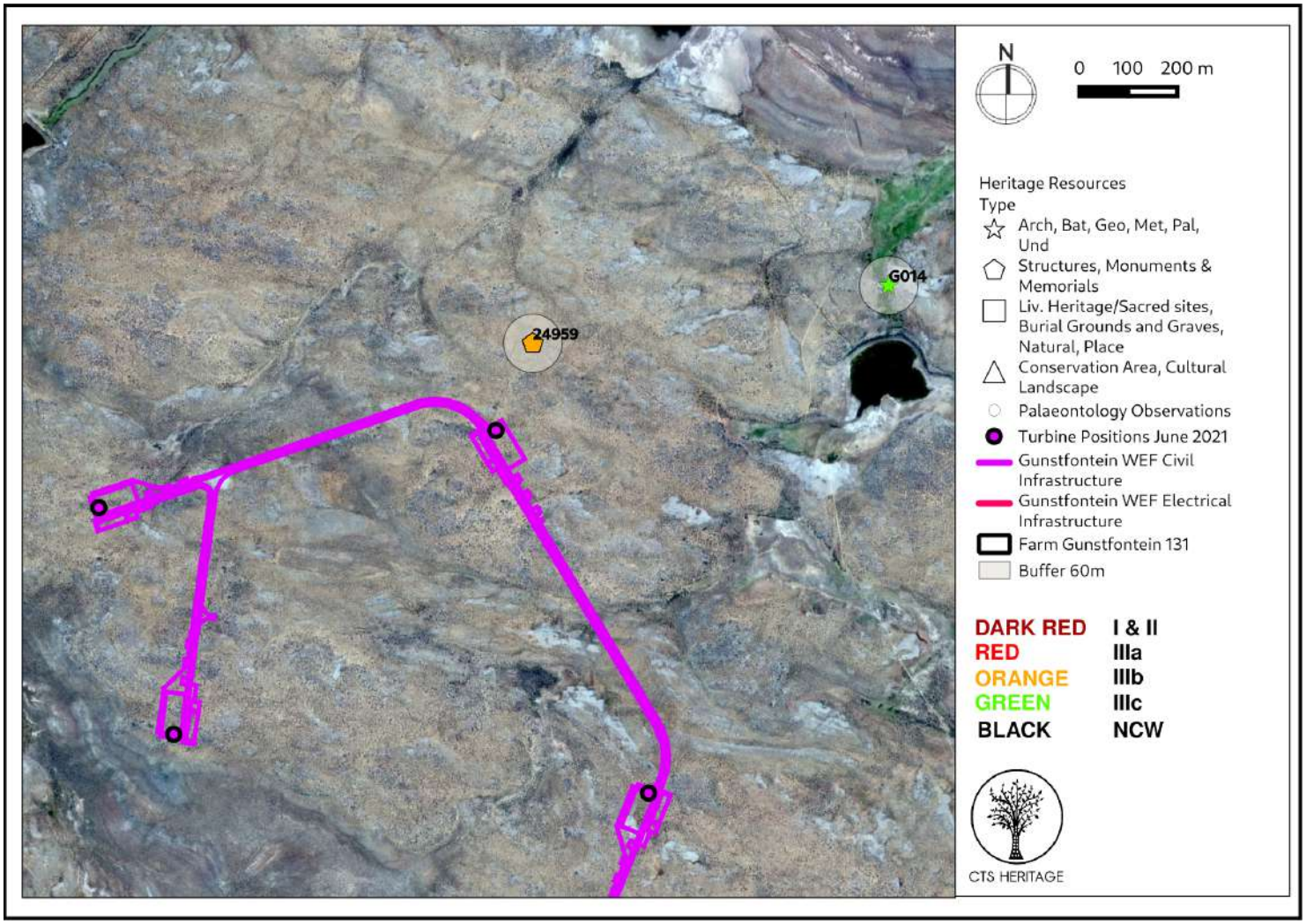

Figure 9.4: Map of all known heritage resources (with SAHRIS IDs and site IDs) relative to the final Gunstfontein WEF Layout

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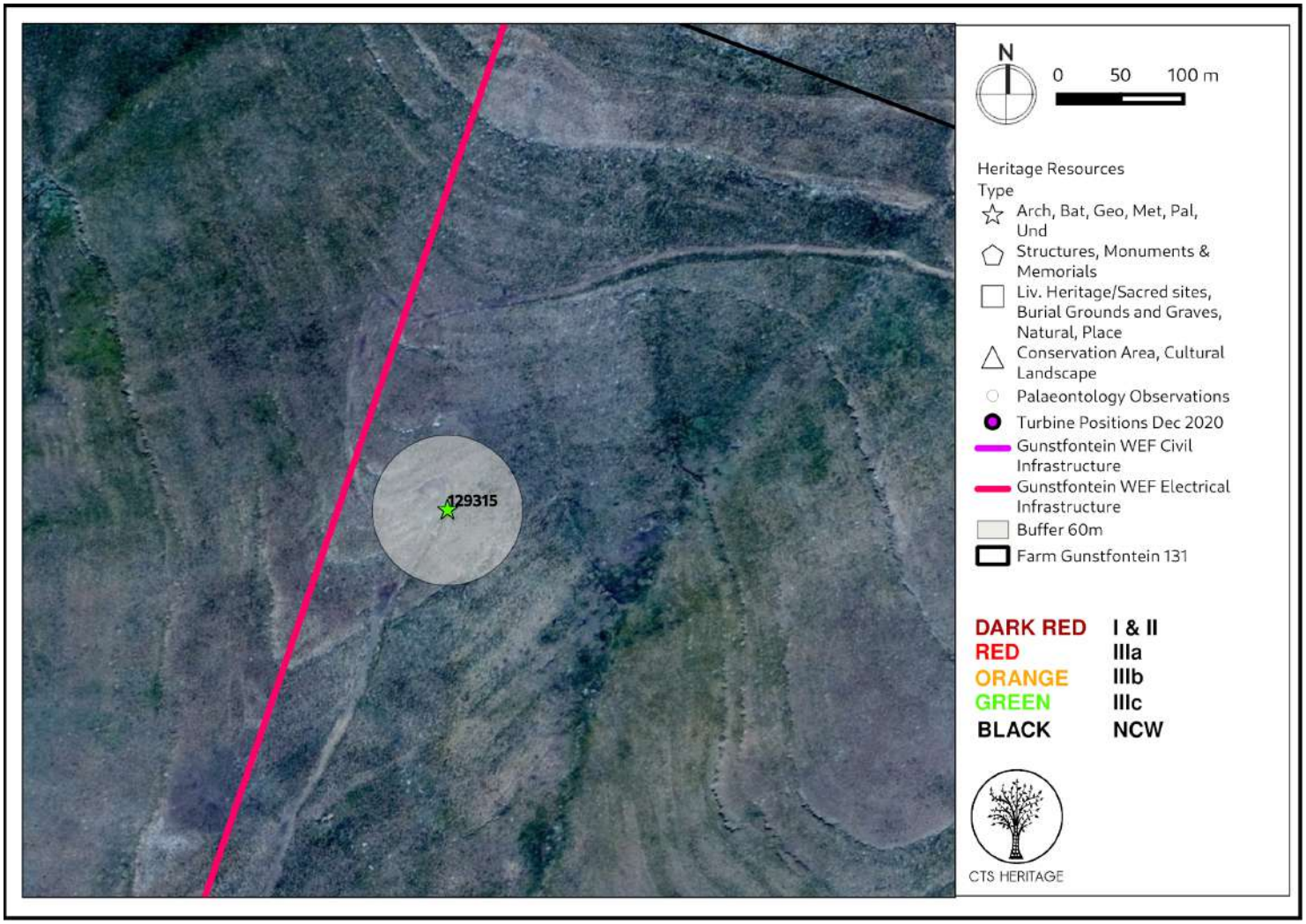

Figure 9.5: Map of all known heritage resources (with SAHRIS IDs and Site IDs) relative to the final Gunstfontein WEF Layout

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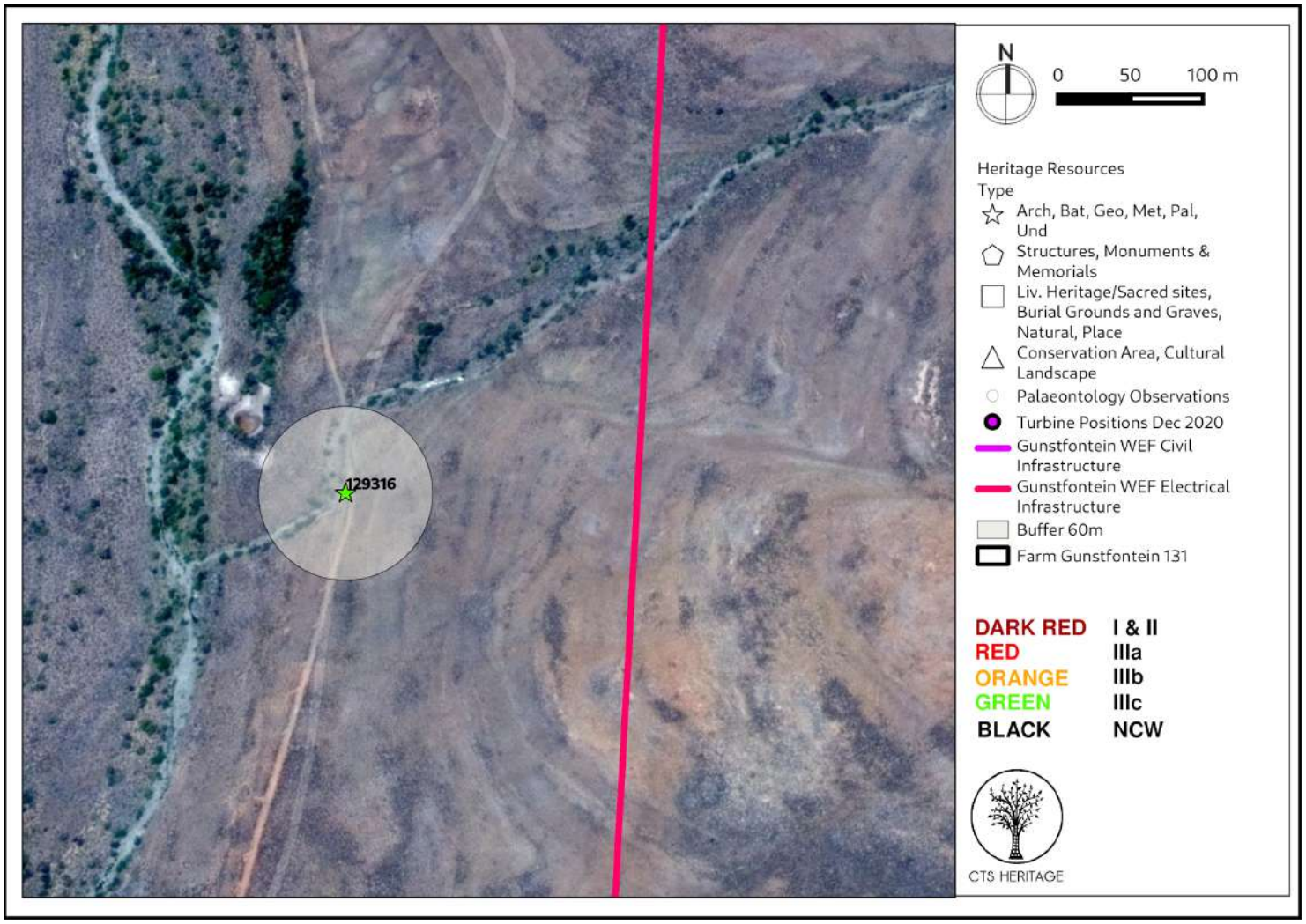

Figure 9.6: Map of all known heritage resources (with SAHRIS IDs and Site IDs) relative to the final Gunstfontein WEF Layout

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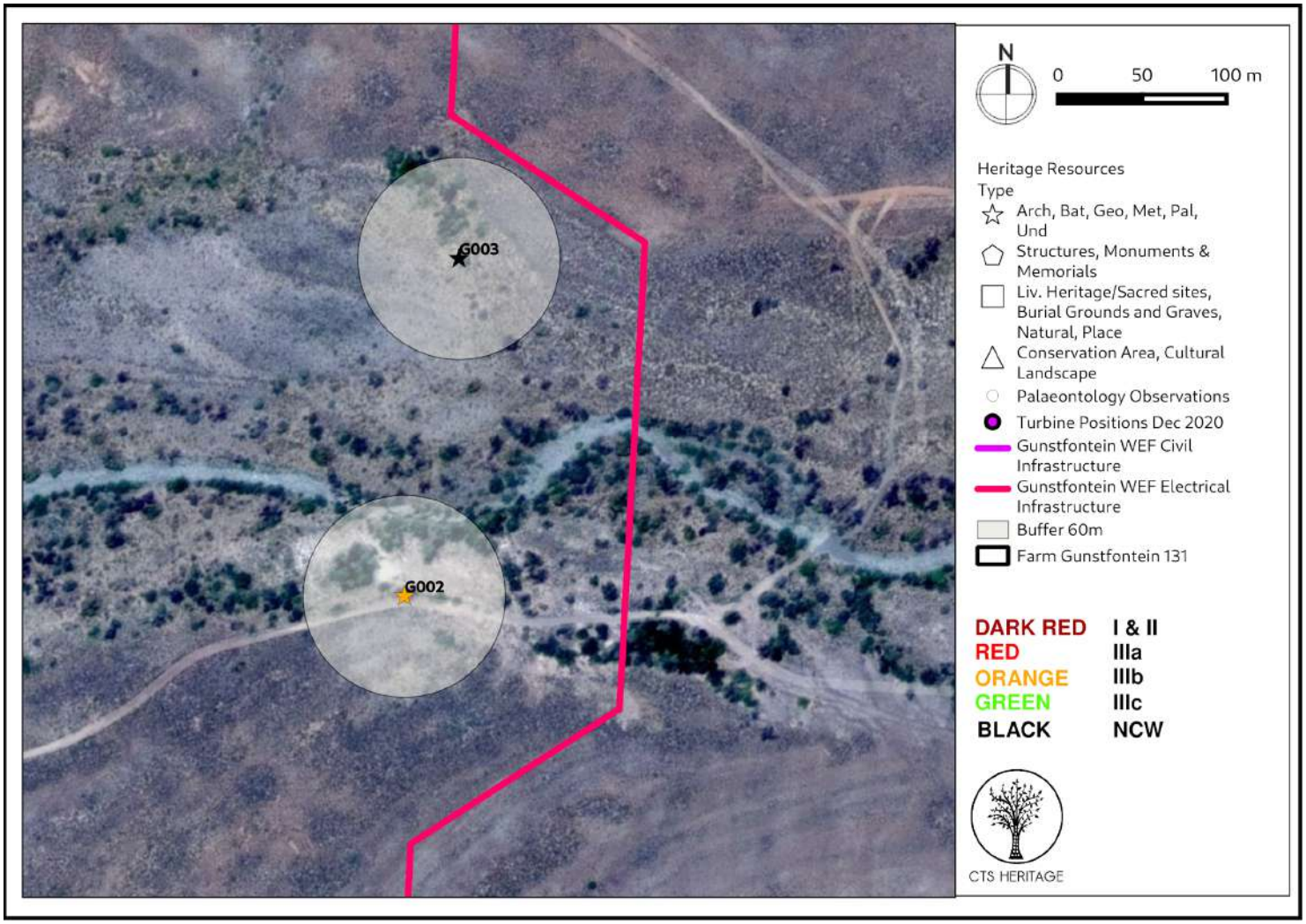

Figure 9.7: Map of all known heritage resources (with SAHRIS IDs and Site IDs) relative to the final Gunstfontein WEF Layout.

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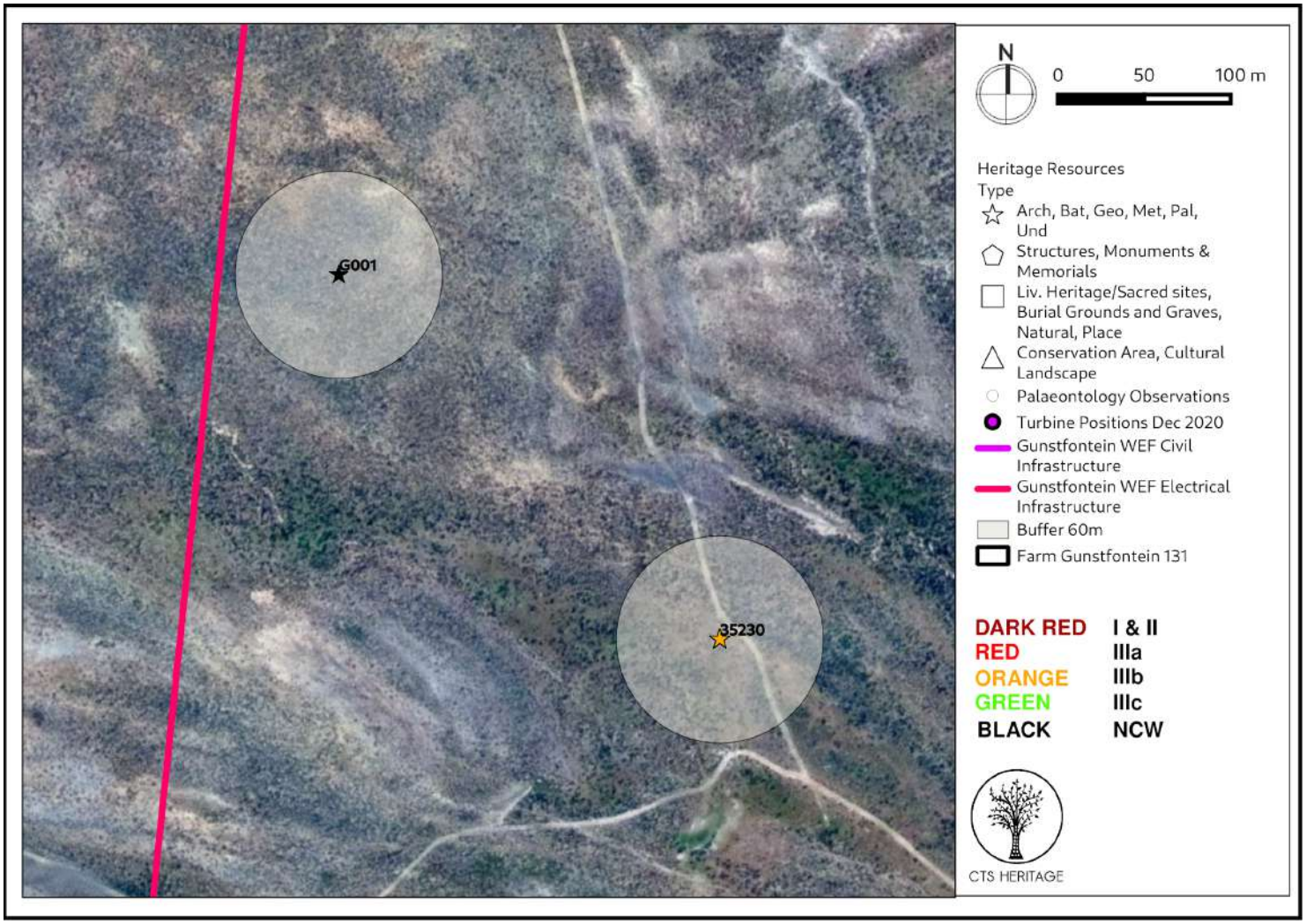

Figure 9.8: Map of all known heritage resources (with SAHRIS IDs and Site IDs) relative to the final Gunstfontein WEF Layout.

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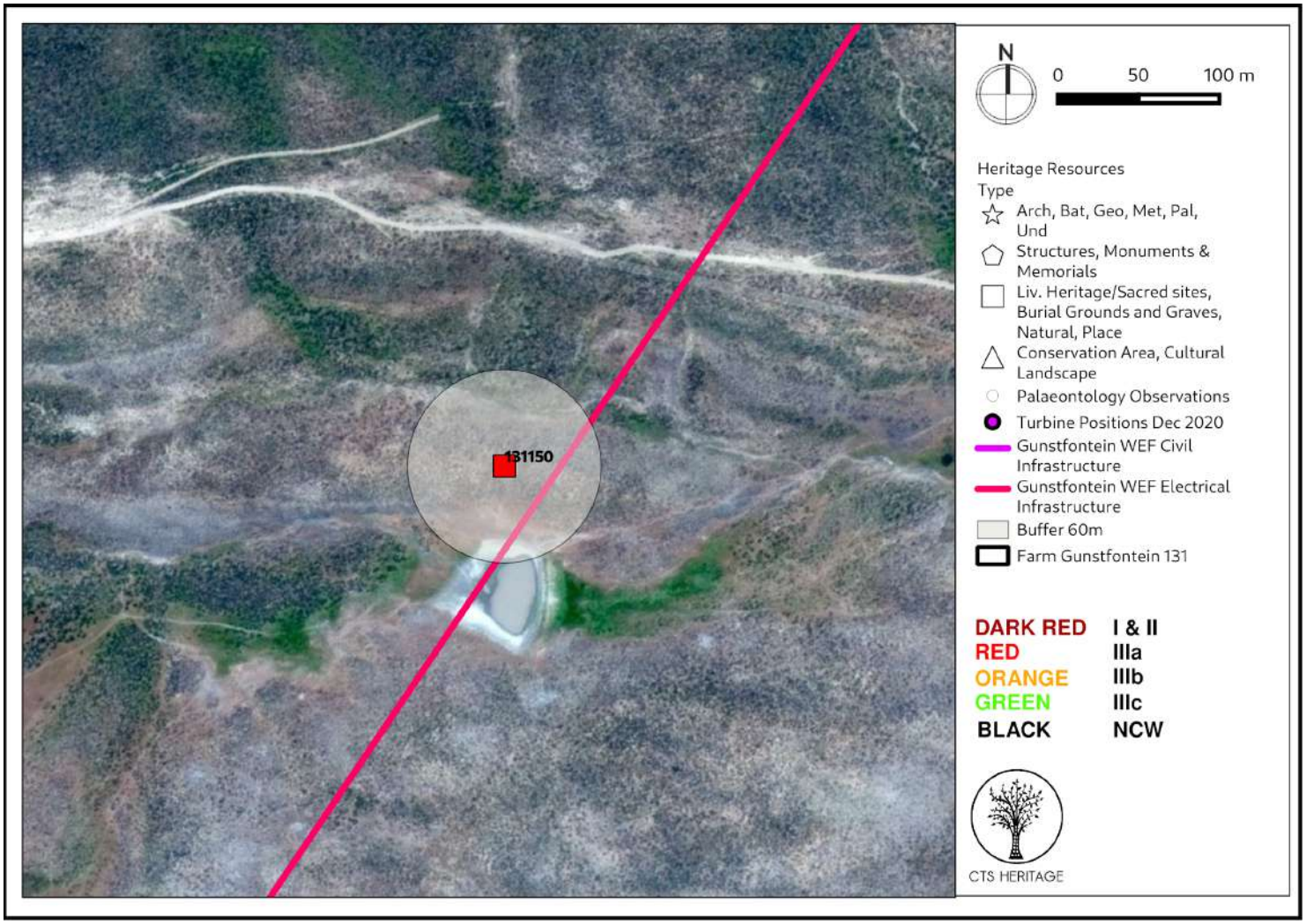

Figure 9.9: Map of all known heritage resources (with SAHRIS IDs and Site IDs) relative to the final Gunstfontein WEF Layout. No pylons to be placed within the 60m buffer around Site 131150 overhead line running above site, as well as additional fencing measures as per the recommendations.

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7. REFERENCES

Heritage Impact Assessments				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
53187	HIA Phase 1	Timothy Hart, Lita Webley	01/03/2011	HERITAGE IMPACT ASSESSMENT PROPOSED WIND ENERGY FACILITY
44935	AIA Phase 1	Celeste Booth	01/02/2012	A Phase 1 AIA for the proposed HIdden Valley Wind Energy Facility, near Sutherland, Northern cape Province
44936	PIA Phase 1	Lloyd Rossouw	01/03/2012	Palaeontological desktop assessment of the proposed Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province
183350	HIA Phase 1	Natalie Kendrick	27/10/2014	Heritage Impact Assessment for the Karreebosch Wind Farm (Phase 2 Roggevelt Wind Farm)
152531	HIA Phase 1	Timothy Hart, Lita Webley	20/12/2013	Heritage Impact Assessment Report for the Phase 1 Roggeveld Wind Farm
357422	AIA	Jaco van der Walt	21/12/2015	Archaeological Impact Assessment Report for the Proposed Gunstfontein WEF near Sutherland, Karoo Hoogland Local Municipality, NC Province
357423	PIA	John Almond	21/12/2015	Palaeontological Heritage Assessment: Combined Desktop and Field Based Report for the Proposed Gunstfontein WEF near Sutherland, Karoo Hoogland Local Municipality, NC Province
341109	AIA	Celeste Booth	03/08/2015	A Phase 1 Archaeological Impact Assessment for the Proposed Soetwater Substation, 132kvV Overhead Powerline and Ancillaries Soetwater Wind Energy Facility, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.
354172	PIA	John Almond	08/01/2016	Recommended Exemption from further Palaeontological studies: Proposed Construction of the Eskom SoetwaterSwitching Station Complex, 132kV Double Circuit Overhead Power Line, SoetwaterFacility Substation Complex and Ancillary Developments near Sutherland, NC Province
353706	AIA	Celeste Booth	03/08/2015	An Archaeological Walk-Through For The Proposed Soetwater Wind Energy Facility Situated On The Farms: The Remainder Of And Portion 1, 2 And 4 Of Farm Orange Fontein 203 And Annex Orange Fontein 185, Farm Leeuwe Hoek 183 And Farm Zwanepoelshoek 184, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.
353707	PIA	John Almond	12/10/2015	Palaeontological Heritage Assessment: Combined Desktop & Field-Based Study: Authorised Soetwater Wind Farm Near Sutherland, Northern Cape Province

Additional References:

Hart, T. et al. (2016). **HERITAGE IMPACT ASSESSMENT (SCOPING) FOR THE PROPOSED KOLKIES WIND ENERGY FACILITY AND ASSOCIATED GRID CONNECTION TO BE SITUATED IN THE SOUTHERN TANKWA KAROO.** (Assessment conducted under Section 38 (8) of the National Heritage Resources Act (No. 25 of 1999) as part of an EIA). For Arcus Consulting. Unpublished and not submitted.

Hart, T. et al. (2016). **HERITAGE IMPACT ASSESSMENT (SCOPING) FOR THE PROPOSED KAREE WIND ENERGY FACILITY AND ASSOCIATED GRID CONNECTION TO BE SITUATED IN THE SOUTHERN TANKWA KAROO.** (Assessment conducted

under Section 38 (8) of the National Heritage Resources Act (No. 25 of 1999) as part of an EIA). For Arcus Consulting. Unpublished and not submitted.

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Smith, Andrew B., and Michael R. Ripp. "**An Archaeological Reconnaissance of the Doorn/Tanqua Karoo.**" The South African Archaeological Bulletin, vol. 33, no. 128, 1978, pp. 118–133

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34 Harries Street, Plumstead, Cape Town
Tel: +27 (0)87 073 5739 **Email:** info@ctsheritage.com **Web:** www.ctsheritage.com

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APPENDIX 1:

Known heritage resources within the Gunstfontein WEF Development Area

SAHRIS ID	Site No	Site Name	Description (Detailed descriptions on SAHRIS)	Co-ordinates		Grading
35230	HDV005	Hidden Valley 05	Stone walling	-32,759278	20,646889	Grade IIIb
129324	GFT 115	Gunstfontein 115	Geological	-32,565481	20,636328	
24959	Gunstfontein	Corbelled building at Gunstfontein	Structures	-32,582	20,682233	Grade IIIb
129285	GFT 01	Gunsfontein 01	Rock Art	-32,566487	20,634727	Grade IIIc
129286	GFT 02	Gunsfontein 02	Archaeological	-32,565721	20,636454	Grade IIIb
129287	GFT 03	Gunsfontein 03	Archaeological	-32,565619	20,636049	Grade IIIb
129288	GFT 04	Gunsfontein 04	Archaeological	-32,564183	20,641966	Grade IIIc
129289	GFT 05	Gunsfontein 05	Archaeological	-32,575016	20,635896	Grade IIIb
129291	GFT 07	Gunsfontein 07	Stone walling	-32,605091	20,643398	Grade IIIb
129292	GFT 08	Gunsfontein 08	Archaeological	-32,60608	20,644558	Grade IIIb
129307	GFT 098	Gunstfontein 098	Geological	-32,588806	20,669667	Grade IIIc
129310	GFT 101	Gunstfontein 101	Geological	-32,568111	20,68225	Grade IIIc
129311	GFT 102	Gunstfontein 102	Geological	-32,565361	20,681139	Grade IIIc
129313	GFT 104	Gunstfontein 104	Geological	-32,546289	20,666683	Grade IIIc
129314	GFT 105	Gunstfontein 105	Geological	-32,554747	20,668633	Grade IIIc
129315	GFT 106	Gunstfontein 106	Geological	-32,620358	20,653533	Grade IIIc
129316	GFT 107	Gunstfontein 107	Geological	-32,670081	20,642944	Grade IIIc
129321	GFT 112	Gunstfontein 112	Geological	-32,566675	20,632428	Grade IIIc
129322	GFT 113	Gunstfontein 113	Geological	-32,566714	20,628731	Grade IIIc
129323	GFT 114	Gunstfontein 114	Geological	-32,554714	20,633536	Grade IIIc
129326	GFT 169	Gunsfontein 169	Geological	-32,553333	20,636667	Grade IIIa
129327	GFT 170	Gunsfontein 170	Geological	-32,584833	20,618167	Grade IIIa
129328	GFT 171	Gunsfontein 171	Geological	-32,601167	20,634667	Grade IIIa
129329	GFT 172	Gunsfontein 172	Geological	-32,567	20,69	Grade IIIa

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129330	GFT 173	Gunsfontein 173	Geological	-32,576	20,7035	Grade IIIa
131150	DHP001	De Hoop 001	Burial Grounds & Graves	-32,8045	20,629181	Grade IIIa

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