AN ARCHAEOLOGICAL GROUND-TRUTHING WALK-THROUGH FOR THE NOBELSFONTEIN WIND ENERGY FACILITY SITUATED ON A SITE SOUTH OF VICTORIA WEST ON THE FARMS NOBELSFONTEIN 227, ANNEX NOBELSFONTEIN 234, EZELSFONTEIN 235, AND RIETKLOOFPLAATEN 239, NORTHERN CAPE PROVINCE.

Prepared for: Savannah Environmental (Pty) Ltd
PO Box 148
Sunninghill
2157
Tel: (011) 656 3237
Fax: (086) 684 0547
Contact person: Mr Bongani Darryl Khupe
Email: bongani@savannahsa.com

Prepared by: Ms Celeste Booth and Ms Sholeen Sanker
Department of Archaeology
Albany Museum
Somerset Street
Grahamstown
6139
Tel: (046) 622 2312
Fax: (046) 622 2398
Contact person: Ms Celeste Booth
Email: celeste.booth@ru.ac.za

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AN ARCHAEOLOGICAL GROUND-TRUTHING WALK-THROUGH FOR THE NOBELSFONTEIN WIND ENERGY FACILITY SITUATED ON A SITE SOUTH OF VICTORIA WEST ON THE FARMS NOBELSFONTEIN 227, ANNEX NOBELSFONTEIN 234, EZELSFONTEIN 235, AND RIETKLOOFPLAATEN 239, NORTHERN CAPE PROVINCE.

Note: This report follows the Archaeological Desktop Study (Booth & Higgitt 2010), compiled in December 2010, and the Phase 1 Archaeological Impact Assessment (Binneman *et al.* 2011) compiled in February 2011, for the proposed Karoo Renewable Energy Facilityon a site south of Victoria West, Northern and Western Cape Province on the Farms Phaisantkraal 1, Modderfontein 228, Nobelsfontein 227, Annex Nobelsfontein 234, Ezelsfontein 235, and Rietkloofplaaten 239.

This report should be read in conjunction with the archaeological walk-though for the proposed substations and associated overhead power lines that will connect the Nobelsfontein Wind Energy Facility,"An archaeological ground-truthing walk-through for the proposed substations and associated overhead power lines for the Nobelsfontein Wind Energy Facility situated on asite south of Victoria West on the Farm Nobelsfontein 227, Northern Cape Province", conducted concurrently to contextualise the archaeological and historical landscape and significance.

1. EXECUTIVE SUMMARY

Purpose of study

The purpose of the study was to conduct an archaeological ground-truthing walk-through surveyfor the Nobelsfontein Wind Energy Facility on a site south of Victoria West on the Farms Nobelsfontein 227, Annex Nobelsfontein 234, Ezelsfontein 235 and, Rietkloofplaaten 239. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage materials and features, the potential impact of the development and, to make recommendations to minimize possible damage to these sites.

The recommendations provided by the South African Heritage Resources Agency (SAHRA)in the review comment on archaeological and paleontological impact assessments were taken into consideration for the archaeological walk-through for the proposed development of the substations and associated overhead power lines. The following SAHRA recommendations apply:

1. The Later Stone Age sites S31, S32 and S39 must be mitigated with a Phase 2 Archaeological impact Assessment. Mitigation in the form of recording, sampling and a photographic record must be undertaken before trenching and any other earthmoving activity resulting from this proposed project commences. The archaeologist will require a mitigation permit from SAHRA in term of S. 35 of the

National Heritage Resources Act (Act 25 of 1999). On receipt of a satisfactory mitigation (phase) permit report from the archaeologist, SAHRA will make further recommendations in terms of the site such as its final destruction or additional sampling.

2. The proposed final position of wind turbines and solar panels must be investigated for the presence of possible rock engravings and rock paintings.
3. No construction activity is allowed within 100 m of the rock paintings, rock engravings rock shelters where rock art material is preserved and sites with stone walls and kraals. If this distance cannot be avoided and the development has to occur within 100 m from any of these sites, a temporary fence must be erected around the site (in consultation with the archaeologist) and foremen and workmen educated about its significance.
4. In no circumstance will development be allowed within 50 m from the stone walls and kraals and from rock art sites.
5. All newly identified rock paintings and rock engravings in the area should be recorded, if this has not been done yet through photographic record and GPS positions. These recordings (which may require involvements of a rock art specialist should be included in the report to be submitted to SAHRA after the micro-siting survey is undertaken.
6. A Heritage Management Plan for rock engravings, rock paintings and gong rocks must be compiled and submitted to SAHRA for revision.
7. The Khoekhoen pottery at site S40 should be collected and recorded. The archaeologist will apply for a collection permit from SAHRA.
8. Destruction of the sites S46, GPS48 must be permitted by SAHRA through destruction permit. The developer or their archaeologist must apply to SAHRA for the permit. A single application (destruction permit) must be used for all sites.
9. The Phase II HIA is required for the area of the remains. This should includethe area of the burial ground and include archival research to investigate if there is a possible link between the burials and construction of the railway line. When a Phase II report is received by the SAHRA Burial Ground and Graves Unit, further recommendations will be made in relation to a possible relocation or preservation of the graves. Provisions stipulated in sectin 36 of the National Heritage Resources Act (Act No 25 of 1999) are applicable. (See Appendix 1 and SAHRA Regulations).

Brief Summary of Findings

The area proposed for theNobelsfontein Wind Energy Facility is situated approximately 34km south of the small Karoo town of Victoria West and falls within the Ubuntu Local Municipality. The proposed area for the development of wind energy facilityis nestled between the N12, N1 and R63 roads.

The general landscape of the proposed area for development comprised of mountains, hillocks / *koppies* and flat flood plains mostly covered in sparse vegetation of grass,

small trees and shrubs mostly within the flood plain areas allowed for good archaeological visibility in the exposed unvegetated areas, although occurrences of denser grass and shrub vegetation made archaeological visibility slightly more difficult. Parts of thearea have been disturbed by the construction of fences, dams, windmills, farm roads and the railway that crosses over the farm Nobelsfontein 227 as well as by grazing, natural erosion and other general farming activities.

During the phase 1 archaeological impact assessment(Binneman *et al.* 2011), occurrences of Middle Stone Age and Later Stone Age stone artefacts were observed within the open exposed areas, flood plains and at the base of rocky outcrops and ridges. The stone artefacts were manufactured using a variety of raw materials such as shale, hornfels, quartz and silcrete and included flakes, broken flakes, blades, scrapers, cores, rejuvenated cores and facetted platforms flakes peculiar to the Middle Stone Age,some stone artefacts having been retouched and utilized as identified by the edge-damage.Stone artefact scatters (S40, S42, and S43) and those proposed for mitigation in SAHRA's recommendations (S46) should not be negatively impacted by the development. GPS 48, on the other hand, is situated adjacent to an existing road proposed to be upgraded and used to connect the wind turbines.

During the current study, isolated occurrences of Middle Stone Age stone artefacts were mostly documented within the northern and southern sections of the proposed development area. A higher density of stone artefact surface scatters were documented west of the range of *koppies* proposed for Turbines 1 – 5, situated south of the railway line. The stone artefacts were manufactured using a variety of raw materials such as shale and hornfels, and included flakes, broken flakes, blades, cores, and facetted platforms flakes peculiar to the Middle Stone Age, some stone artefacts have been heavily weathered and other have been retouched and utilized as identified by the edge-damage. A proposed new access road is proposed for this area.

During the phase 1 archaeological impact assessment (Binneman *et al.* 2011), ceramic sherds of Khoekhoen pottery (S40) possibly belonging to one pot was documented on the farm Nobelsfontein 227. A few broken ostrich eggshell fragments were found in association with scatters of mainly Later Stone Age stone artefacts and within the rock shelters that contained rock paintings. These areas are not included in the area to be impacted during development. No occurrence of pre-colonial pottery was documented during the walk-through survey, although a few fragments of ostrich eggshell were observed within one area of the middle section of the proposed development area.

During the phase 1 archaeological impact assessment (Binneman *et al*. 2011), rock paintings and rock engravings were documentedin two areaswithin the proposed development area.The rock paintings were mainly red ochre finger paintings and contained images of human figures and geometric and abstract paintings. The rock engravingsoccurred mainly on boulders with a dark / black patination and contained mainly colonial images, animal figures and abstract patterns and cross-hatching.

No newly identified rock paintings and rock engravings were recorded in the area. The rock painting sites (S49-RA4 and S50-RA5) and the engraving site (S41-ENG5) previously recorded are not situated within the main development area and should not be negatively affected. However, the engraving sites (S47-ENG7 and S48-ENG5), are situated adjacent to an existing road proposed for upgrading to connect the turbines, may be negatively affected by the development activities. This area was included in SAHRA's review comment for the phase 1 archaeological impact assessment, the recommendations have been included as part of the current study.

During the phase 1 archaeological impact assessment (Binneman *et al.* 2011), stone-wall structures resembling mainly large rectangular kraals and smaller circular pens, foundations of historical dwellings and animal traps were recorded. Two circular stone-wall features were documented adjacent to an existing road. This road has not been proposed for the upgrade for the roads that will connect the turbines. However, if the road will be used the appropriate protection measures in the recommendations must be implemented.

During the current study a stone-wall complex comprising about eight separate stone-wall features is situated west and north at the foot of the range of *koppies* proposed for Turbines 1 – 5. The remains of foundations of a dwelling were also documented near to the stone-wall complex.

During the phase 1 archaeological impact assessment human remains were found exposed along the side of a 3m-4m high river donga and one burial could be observed in the side of the donga approximately 1m below the surface with a few human remains exposed at the surface on the farm Nobelsfontein 227. The human remains have not yet been removed and were investigated to monitor the condition of the burial and exposed human remains eroding out of the surface. The human remains is not included in the main development area and should not be negatively affected by the development.

During the current study an informal grave area with between twenty-two and twenty-five burials, probably associated with the near-by railway siding, were documented immediately adjacent to the existing internal farm road towards the southern area of the proposed development area. This road is not proposed to be upgraded but rather a new road constructed approximately 200 m east of the area of the grave area. Nonetheless, the appropriate recommendations must be considered and implemented to protect the graves.

Recommendations

The area is of a medium cultural sensitivity and the following recommendations must be considered:

1. Destruction of the sites S46, GPS48 must be permitted by SAHRA through destruction permit. The developer or their archaeologist must apply to SAHRA for the permit. A single application (destruction permit) must be used for all sites.
2. No construction activity is allowed within 100 m of the rock paintings, rock engravings rock shelters where rock art material is preserved and sites with stone walls and kraals. If this distance cannot be avoided and the development has to occur within 100 m from any of these sites, a temporary fence must be erected around the site (in consultation with the archaeologist) and foremen and workmen educated about its significance.
3. A Heritage Management Plan for the rock engravings situated at S47-ENG7 and S48-ENG8 situated south of the road proposed for upgrading within the southern section of the proposed development area must be compiled and submitted to SAHRA for revision.
4. No construction activities may take place within 100m of the documented stone-wall structures.
5. In no circumstance will development be allowed within 50 m from the stone walls and kraals and from rock art sites.
6. If it is inevitable that construction activities must take place within 100m of any documented and undocumented rock shelters containing paintings, rocky outcrops with boulders containing rock engravings and stone-wall structures a perimeter fence must erected to protect the sensitive area from any possible negative impact.
7. The Phase II HIA is required for the area of the remains. This should include the area of the burial ground and include archival research to investigate if there is a possible link between the burials and construction of the railway line. When a Phase II report is received by the SAHRA Burial Ground and Graves Unit, further recommendations will be made in relation to a possible relocation or preservation of the graves. Provisions stipulated in sectin 36 of the National Heritage Resources Act (Act No 25 of 1999) are applicable. (See Appendix 1 and SAHRA Regulations)
8. An alternative area/s for Turbines 1 -5 should be considered owing to the possible destruction of the series of *koppies* in the construction of the wind turbines on these *koppies*. The construction of these turbines may negatively affect the stone wall complex situated around the foot of Turbine 1, the historically significant area situated east, previously recorded in the report for the proposed substation and associated power lines, as well sites situated on the area proposed for Turbine 4 and 5.
9. The informal grave area must be clearly demarcated and fenced and cordoned off and no development activities should take place within 100 m of the grave area.

10. If the current layout for the Nobelsfontein Wind Energy Facility changes and new areas are included and additional archaeological investigation must be conducted to assess the area.
11. It is possible that *in situ* archaeological sites/remains, and human remains may be uncovered during construction. Therefore, a professional archaeologist should be appointed during the vegetation removal and construction phases of the development.

2. BACKGROUND INFORMATION

Developer:

South African Renewable Green Energy (Pty) Ltd (SARGE)

Consultant:

Savannah Environmental (Pty) Ltd
PO Box 148
Sunninghill
2157
Tel: (011) 656 3237
Fax: (086) 684 0547
Contact person: Mr Bongani Darryl Khupe
Email: bongani@savannahsa.com

Terms of Reference

To conduct an archaeological ground-truthing walk-through surveyfor the Nobelsfontein Wind Energy Facility on a site south of Victoria West, Northern and Western Cape, on the Farms Nobelsfontein 227, Annex Nobelsfontein 234, Ezelsfontein 235 and, Rietkloofplaaten 239. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage materials and features, the potential impact of the development and, to make recommendations to minimize possible damage to these sites.

3. BRIEF LEGISLATIVE REQUIREMENTS

Parts of sections 34(1), 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

Structures

34. (1) 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

Archaeology, palaeontology and meteorites

35 (4) 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;
(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 therecovery of meteorites.

Burial grounds and graves

36. (3) (a) 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 disturbthe grave of a victim of conflict, or any burial ground or part thereof which containssuch 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 formalcemetery administered by a local authority; or
(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

Heritage resources management

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends Toundertake a development categorized as –
(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of lineardevelopment 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 the site –
(i) exceeding 5000m2 in extent, or
(ii) involving three or more 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 aprovincial resources authority;
(d) the re-zoning of a site exceeding 10 000m2 in extent; or
(e) any other category of development provided for in regulations by SAHRA or a Provincialheritage resources authority, must as the very earliest stages of initiating

such adevelopment, notify the responsible heritage resources authority and furnish it withdetails regarding the location, nature and extent of the proposed development.

4. BRIEF ARCHAEOLOGICAL BACKGROUND

An archaeological desktop study has been conducted for the proposed Karoo renewable energy project prior to undertaking the phase 1 archaeological impact assessment; this is a summary extract from the study.

Little is known about the archaeology of the immediate area, mainly because no systematic archaeological research has been conducted within the proposed area for the Karoo Renewable Energy Facility. Records of early travelers through the area as well as those of early settlers of the town of Victoria West and surrounds make mention of their interactions with San people who still inhabited the area during the latter half of the 1800's. Archaeologists such as A.H.J. Goodwin, during the mid-1920's, identified an exclusive stone tool industry as the Victoria West Industry which occurred around the town of Victoria West and along the VaalRiver (Goodwin 1926, 1946). Rock engravings are widespread over the Karoo landscape, substantial research has been conducted within the Northern and Western Cape areas of the Karoo (Parkington*et al*. 2008). A few relevant phase 1 archaeological impact assessments that have been conducted close to the area proposed for development provide a more recent and accurate recording of what may be found within the area proposed for development (Binneman *et al.* 2010; Morris 2006).

5. DESCRIPTION OF THE PROPERTY

Area surveyed

Location data

Map 1:50 000 – 3123CA VERSTER and 3123CC THREE SISTERS

The area proposed for theNobelsfonteinWind Energy Facility is situated approximately 34km south of the small Karoo town of Victoria West on the Farms Nobelsfontein 227, Annex Nobelsfontein 234, Ezelsfontein 235, and RietkloofPlaaten 239, Ubuntu Local Municipality, Northern Cape Province. This area will be used in the first phase of implementation of the proposed project. The proposed substations and overhead power lines are limited to the western boundary of the wind energy facility and will connect to the existing substation on the Farm Nobelsfontein 227.

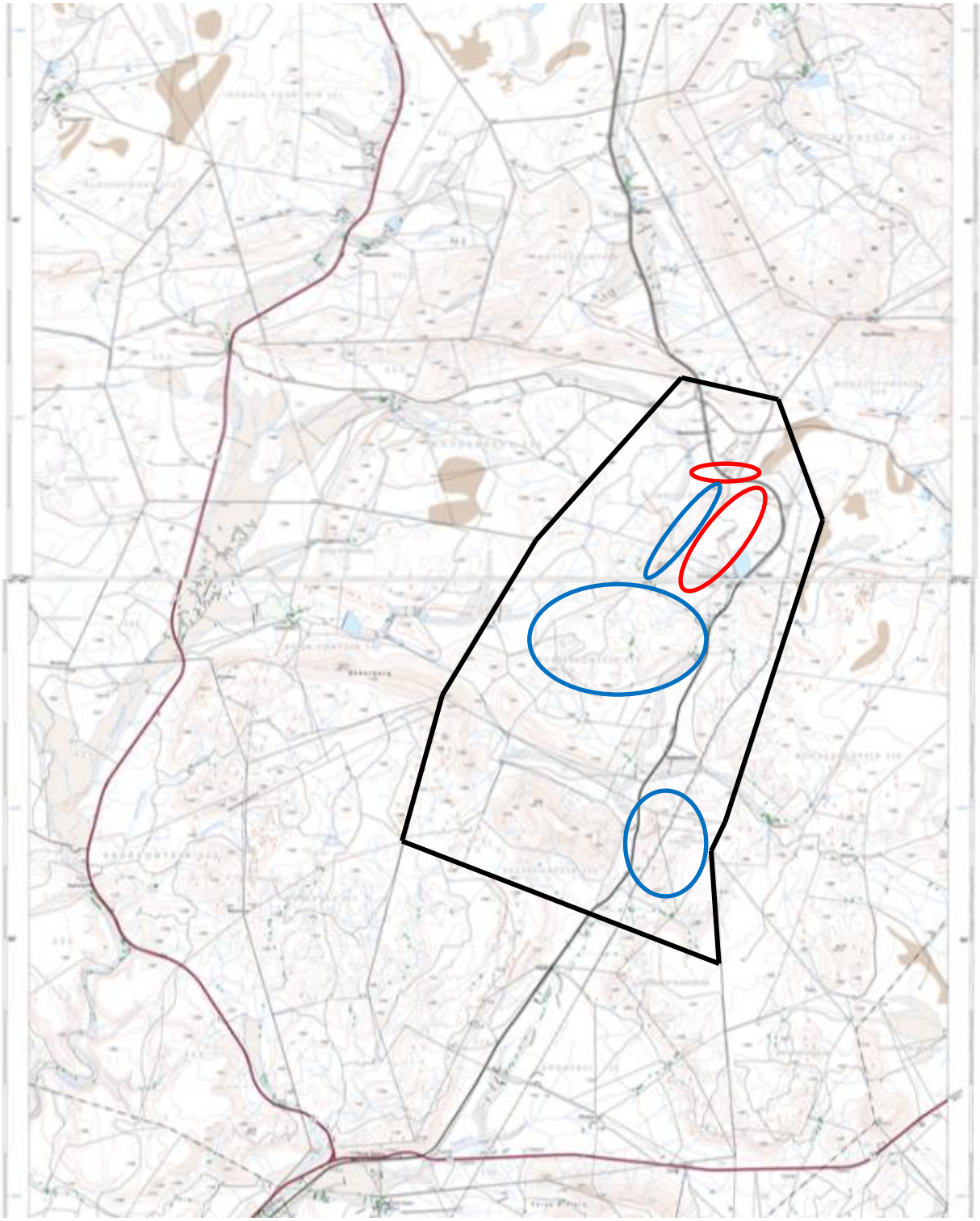

Figure 1. 1:50 000 maps 3123CA VERSTER and 3123CC THREE SISTERS showing the outline of the farms for the wind energy facility (black area), the areas for the wind turbines (blue), and the outline of the areas for the proposed substations and associated overhead power lines (red area).

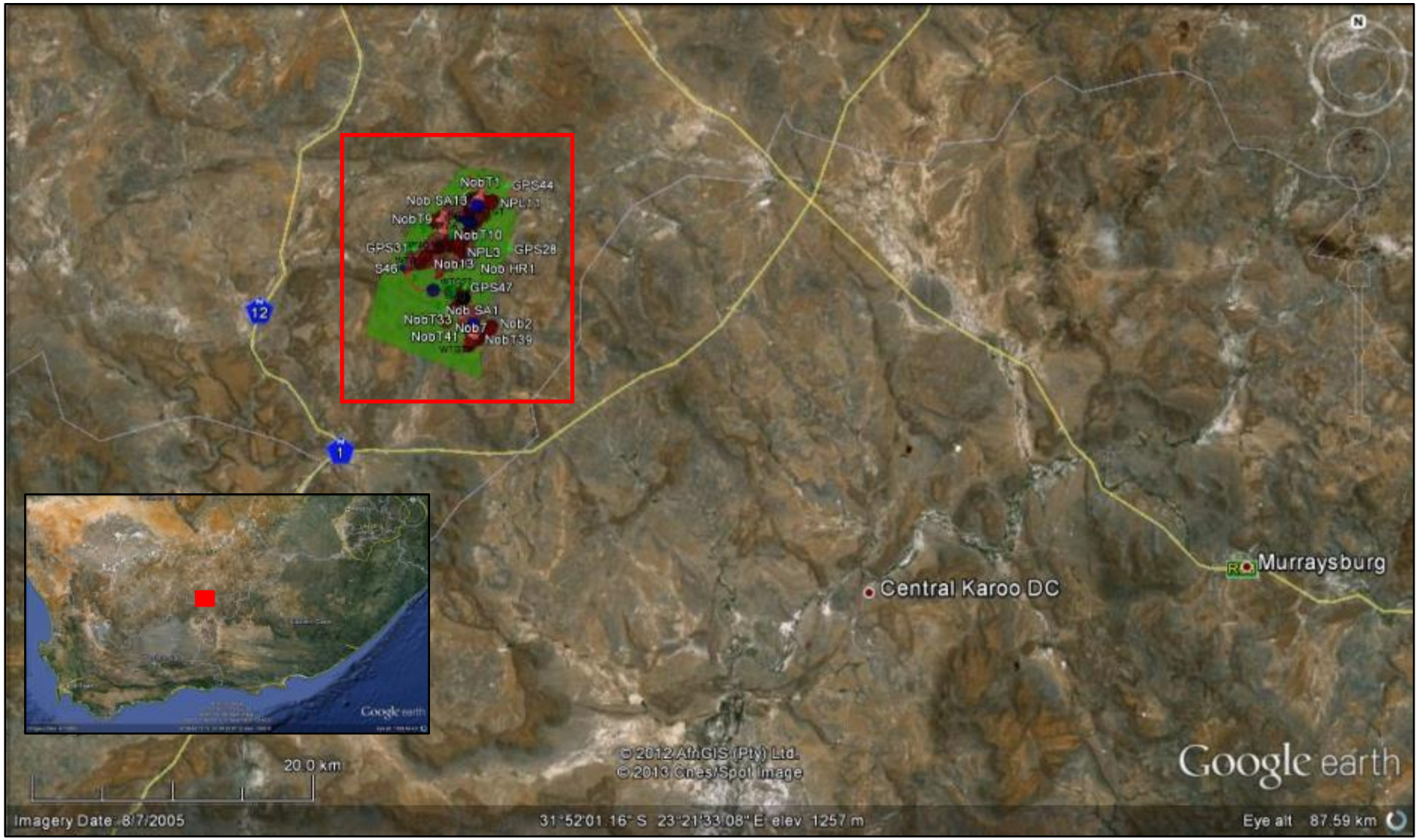

Figure 2.Aerial view showing the location of the Nobelsfontein Wind Energy Facility.

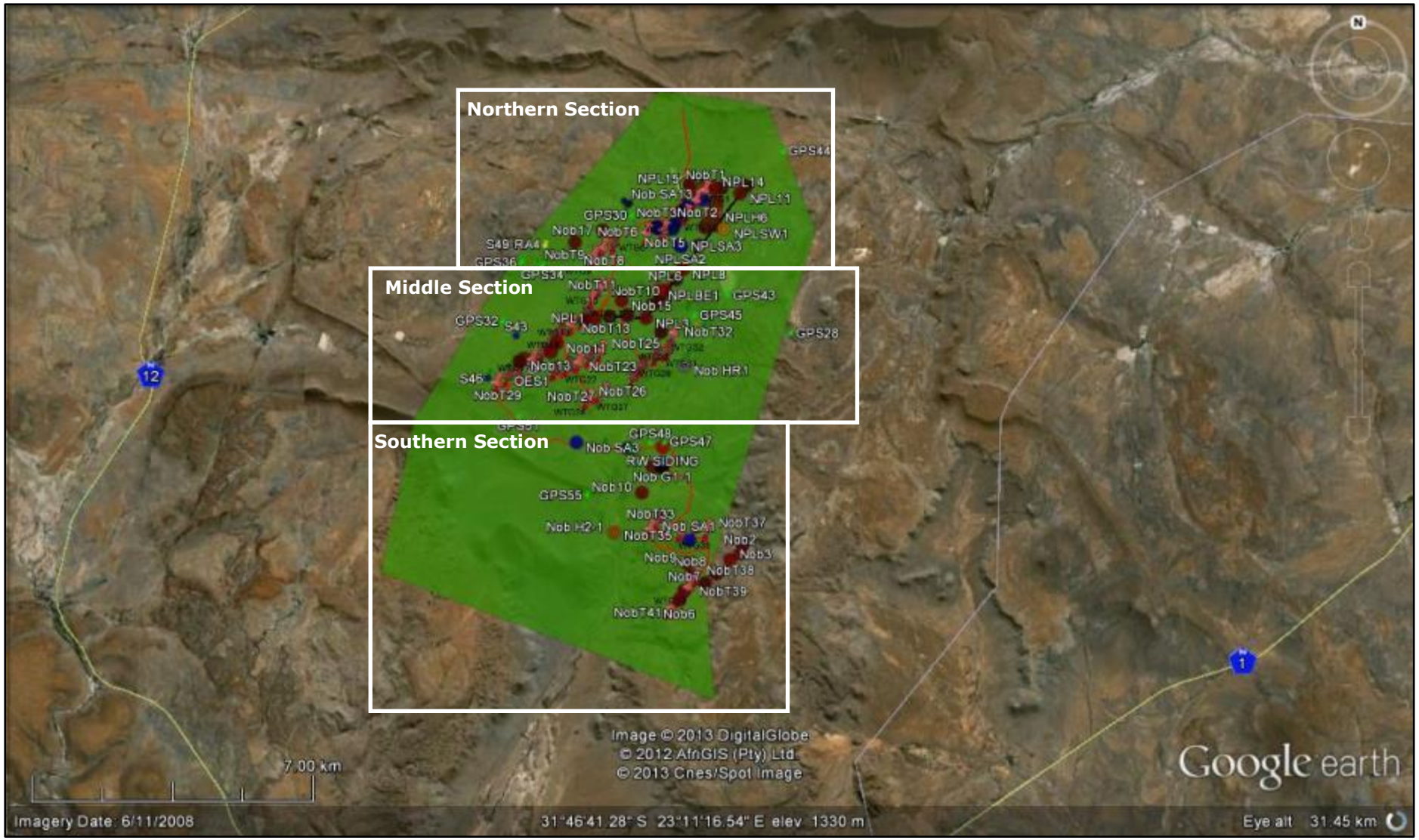

Figure 3. Close-up aerial view of the Nobelsfontein Wind Energy Facility showing the pseudo sections created for easier description of the archaeological and other heritage remains, features, and sites.

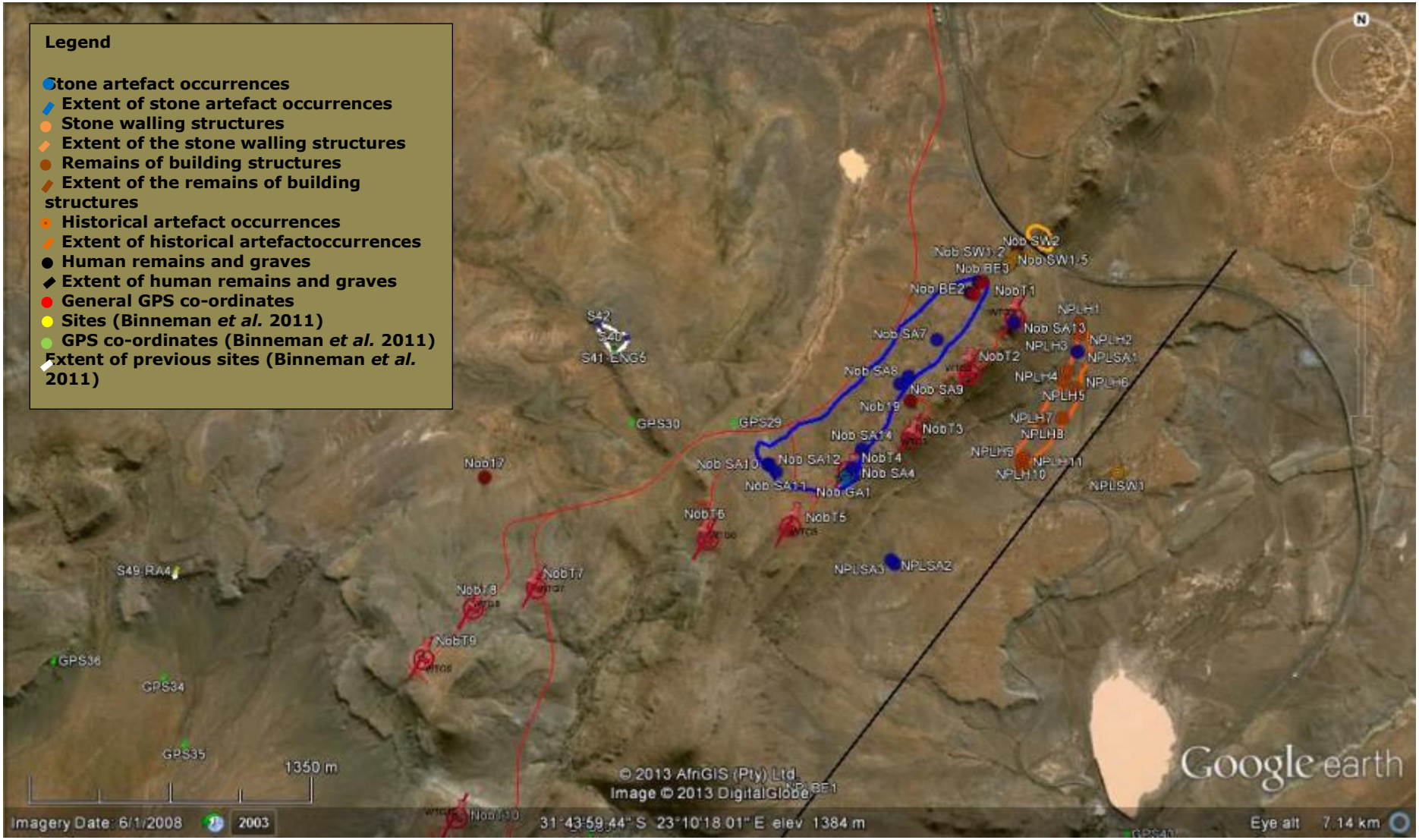

Figure 4. Close-up view of the northern section (Turbines 1 – 9) including proposed power line showing the distribution of recorded heritage remains.

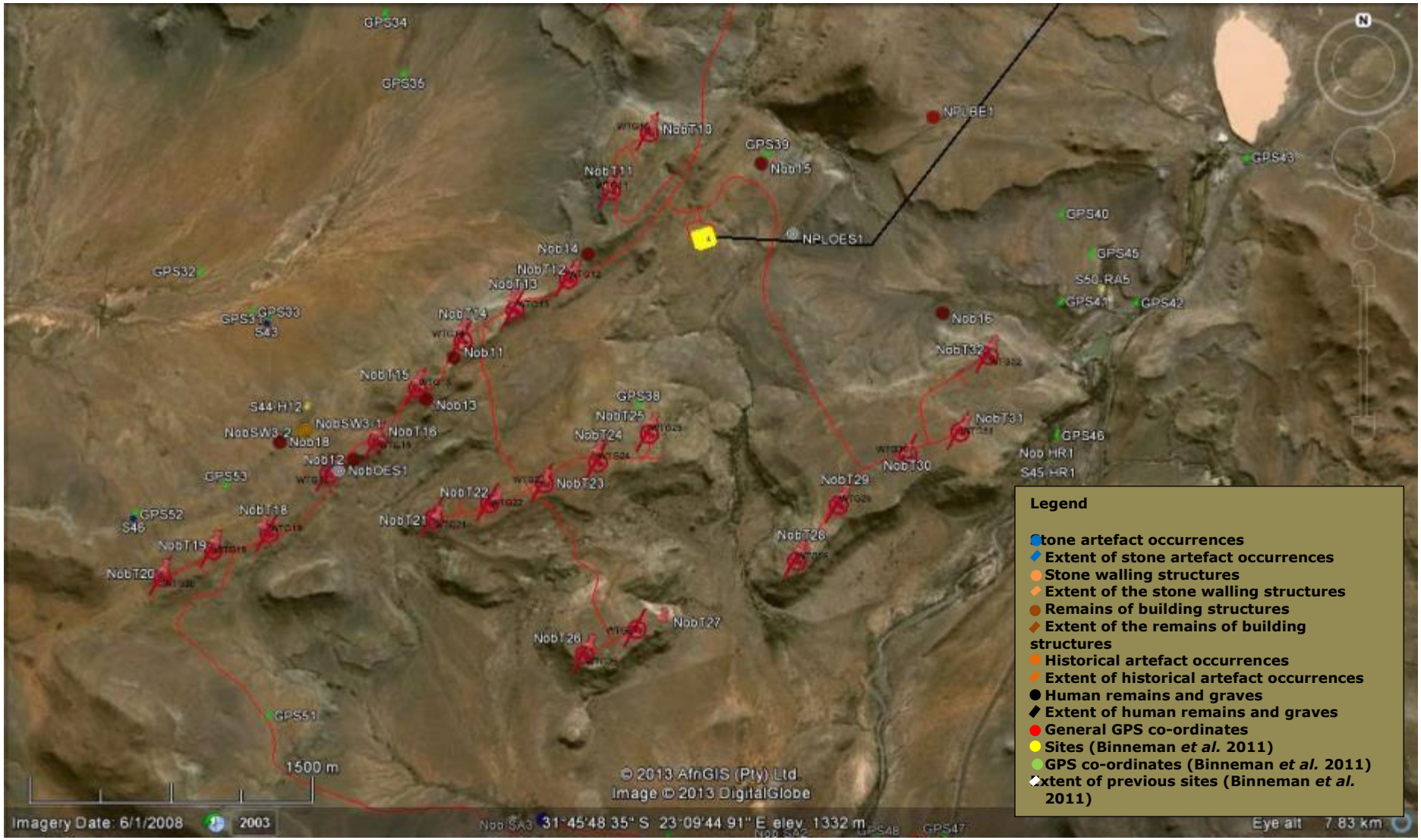

Figure 5. Close-up view of the middle section (Turbines 10 – 31) including the proposed substation and power line showing the distribution of recorded heritage remains.

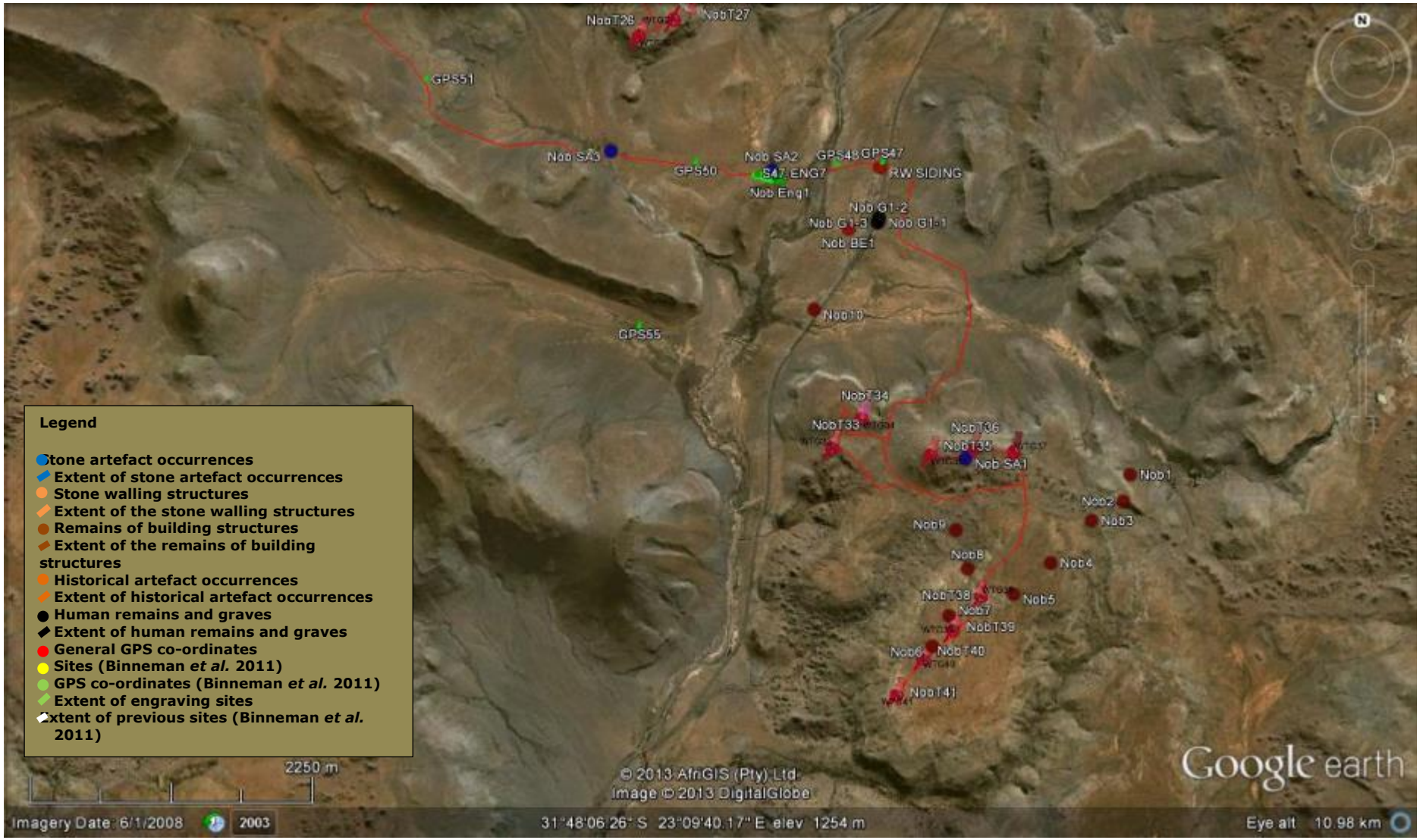

Figure 6. Close-up view of the southern section (Turbines 32 – 41) showing the distribution of recorded heritage remains.

6. ARCHAEOLOGICAL INVESTIGATION

Methodology

The survey was conducted by two people mostly on foot by following the areas for the proposed new roads that will allow access to and connect the turbines and the footprint of each turbine. Boulders occurring within the area on rocky outcrops and *koppies* were investigated for rock engravings. Photographs and GPS readings were taken using a Garmin Oregon 550 (refer to Figures 3 – 6). The proposed area has been divided in pseudo sections, North/ern, Middle, and South/ern, for easier description of the general area and archaeological and other heritage remains, features, and sites documented within each section (Figure 3).

The area for the development of the Nobelsfontein Wind Energy Facility includes the farms Nobelsfontein 227, Annex Nobelsfontein 234, Ezelsfontein 235 and Rietkloofplaaten is approximately 10km x 8km in extent. The landscape is varied, consisting of flat, open floodplains, ridges, rocky outcrops and hillocks/*koppies.*The area is covered in the typical Karoo vegetation and dense grass, which at times hindered archaeological visibility.However, exposed open areas were investigated for possible archaeological material remains. The farm also consists of natural springs and dams. Disturbances owing to the construction of farm roads, fences,powerlines, telephone lines, windmills and dams as well as domestic stock grazing and other farming activities have occurred throughout the area.

The northern section (Figure 4) of the proposed development area (Turbines 1 – 9) (Figure 4) comprises a series of rocky *koppies*(Turbines 1 - 5) and ridges (Turbines 6 – 9) (Figures 7-8). The area proposed for Turbines 1 – 5 is rugged and it is possible that the *koppies* will be flattened to construct the foundations and connecting roads for the turbines. Middle Stone Age Stone Age stone artefacts, a stone-wall complex, the remains of a dwelling, as well as associated artefacts were documented west and north of these series of *koppies*. Several colonial artefacts were documented east of these series of *koppies*, these have been reported on in the report complied for the proposed new substation and associated overhead power lines. No archaeological or other heritage remains, features, and sites were observed on the ridges proposed for Turbines 6 – 9.

The middle section (Figure 5) on which the turbines will be constructed includes a series of *koppies* (Turbines 14 – 20) andflat ridges (Turbines 10 – 11 and 21 – 32) (Figures 9-10). The area proposed for Turbines 14 – 20 on the series of rocky *koppies* is rugged and it is possible that area will be flattened to construct the foundations and connecting roads for the turbines. A few fragments of ostrich eggshell were identified around Turbine 17 (NobOES1). Two stone-wall structures documented in the phase 1 archaeological impact assessment (Binneman *et al.* 2011) occurs adjacent to the existing road leading to Turbine 16.

The turbines to be constructed in the southern section (Figure 6) of the proposed development area are limited to a large flat ridge (Turbines 38 – 41) with turbines situated on a series of *koppies* (Turbines 33 – 37) (Figures 11-12). The proposed area is rugged and it is possible that the rocky *koppies* will be flattened to construct the foundations and connecting roads for Turbines 33 – 37. Boulders occurred on either side of the area proposed for the upgrade of the existing road. Rock engravings encountered during the phase 1 archaeological impact assessment occur adjacent to the road between the main area proposed for the construction of the turbines and the middle section. Informal graves were documented adjacent to the road leading from the main area proposed for the construction of the wind turbines and the Nobelsfontein railway siding.

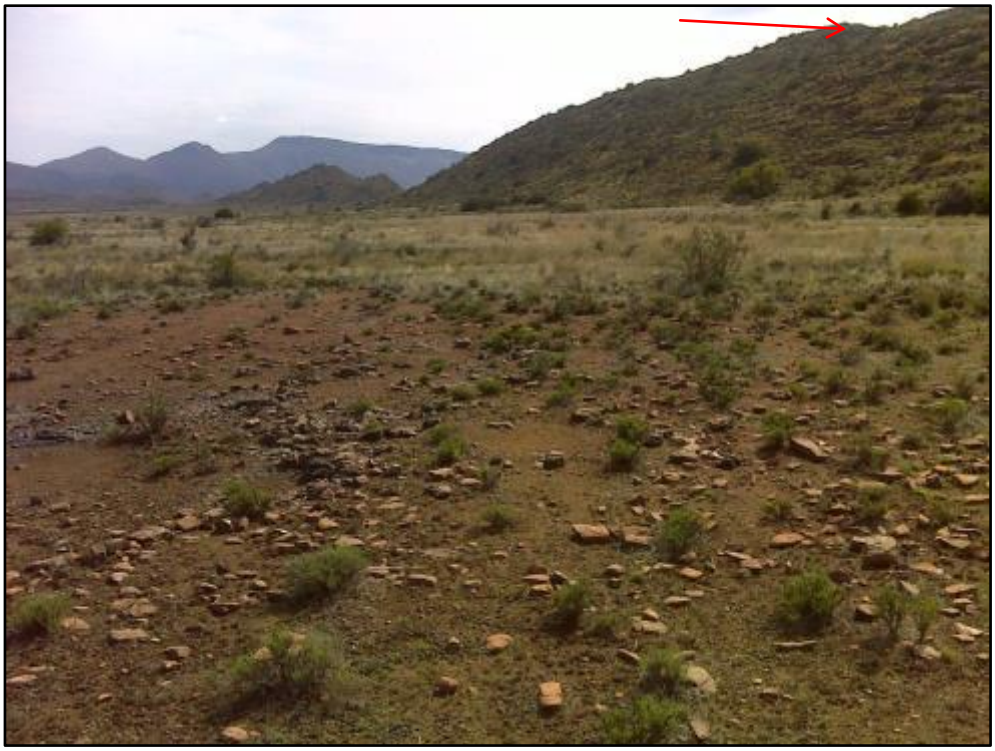

Figure 7. View of the area proposed for Turbine 1 (red arrow).

Figure 8. View of the series of the series of *koppies*proposed for Turbines 1 – 5.

Figure 9. View of the area proposed for the construction of turbines in the middle section of the development area.

Figure 10. View of an area proposed for the construction of a wind turbine in the middle section of the proposed development area.

Figure 11. View of the area on the ridge proposed for the construction of Turbines 28 – 29.

Figure 12. View of the ridge proposed for the construction of Turbines 21 – 25.

Figure 13. View of the landscape on top of the ridge in the southern section of the proposed development area.

Figure 14. View of the new road connecting the turbines that will be upgraded. Several weathered boulders and rocky outcrops occur adjacent to this road.

Figure 15. View of the *koppies* within the proposed development area.

During the phase 1 archaeological impact assessment (Binneman *et al.* 2011) sporadic and isolated surface scatters of Middle Stone Age stone artefacts were documented across the proposed area mainly within the flat floodplain areas. The Middle Stone Age stone artefacts occurrences comprised mainly a variety of cores including cores that had been prepared prior to stone artefact manufacture, flakes bearing the characteristic Middle Stone Age facetted striking platform and blades manufactured predominantly on medium- and fine-grained shale and hornfels raw materials. Surface scatters of small concentrations of Middle Stone Age stone artefacts were documented at the areas marked S43, S46 and S48. The stone artefacts documented at S48 weresituated adjacent to the farm road at the base of the hillock/*koppie* that contained several engraved and scratched boulders and a lower grinding stone near to the stone artefact surface scatter.Later Stone Age stone artefacts were only encountered at two areas on the farm Nobelsfontein 227 at the areas marked S46 and GPS48. The area S46 is situated on a flat floodplain within relatively dense grass vegetation, asilcretemicrolith core was observed within the exposed area next to the farm road and a few flakes were observed within the immediate surrounding area. The area marked GPS48 had a small concentration of Later Stone Age stone artefacts comprising mostly of flakes manufactured on fine-grained raw materials was documented within the exposed area next to the farm road. No other archaeological remains in association with the stone artefact scatters were encountered.

During the walk-through survey focusing on the proposed new roads and turbine positions, one possibly Middle Stone Age stone artefact with some patination and manufactured on hornfels raw material was documented between the rocky *koppies* in the southern section of the proposed development area (Figure 16).GPS 48, on the other hand, is situated adjacent to an existing road proposed to be upgraded and used to connect the wind turbines.Several Middle Stone Age stone artefacts were documented within the vicinity of the rock engraving sites S47-ENG7 and S48-ENG8.

A widespread distribution of predominantly Middle Stone Age stone artefacts were documented west of the series of rocky *koppies* between Turbines 1 – 5 (Figure 4). The stone artefacts were manufactured using a variety of raw materials such as shale and hornfels, and included flakes andfacetted platforms flakes peculiar to the Middle Stone Age, blades, and several cores (Figures 17-22). Some stone artefacts have been retouched and utilized as identified by the edge-damage.A relatively dense surface scatter of stone artefacts was documented in the road proposed for upgrade that will connect to Turbine 5 (Figure 23).

Two worked glass artefacts were documented within the area proposed for Turbine 4. The two artefacts were manufactured on purple glass and clear glass (Figures 24-25). The purple glass piece resembles a scraper-like implement. Purple glass chips were identified in association with this scraper-like implement. The clear glass piece was flaked and retouched; the flake scars are evident on the ventral surface.

No stone artefacts occurrences were documented within the middle section of the proposed development area.

Stone artefact scatters (S40, S42, and S43) and those proposed for mitigation in SAHRA's recommendations (S46) should not be negatively impacted by the development.

During the phase 1 archaeological impact assessment (Binneman *et al.* 2011) some of the rock shelters within the proposed area for development were investigated for possible rock paintings, of which only two rock shelters containing rock paintings were documented, these are referred to as S49 and S50. The rock shelter at S49 overlooks the flat floodplains and contained "faded" abstract red ochre finger-painted images of stripes and crosses. The rock shelter at S50 is situated along a ridge within several other rock shelters that did not contain any rock paintings within 100m of a small stream and similarly contained "faded" abstract red ochre finger painted images of vertical and horizontal stripes.

It not expected that the sites previously recorded will be negatively affected during the development activities. No additional rock art sites were documented during the current study.

Figure 17. Stone artefact documented in the southern section of the proposed development area.

Figure 18. Example of blade documented in the northern section of the proposed development area.

Figures 19-20. Examples of stone artefacts documented in the northern section of the proposed development area.

Figures 21-22. Examples of cores documented in the northern section of the proposed development area.

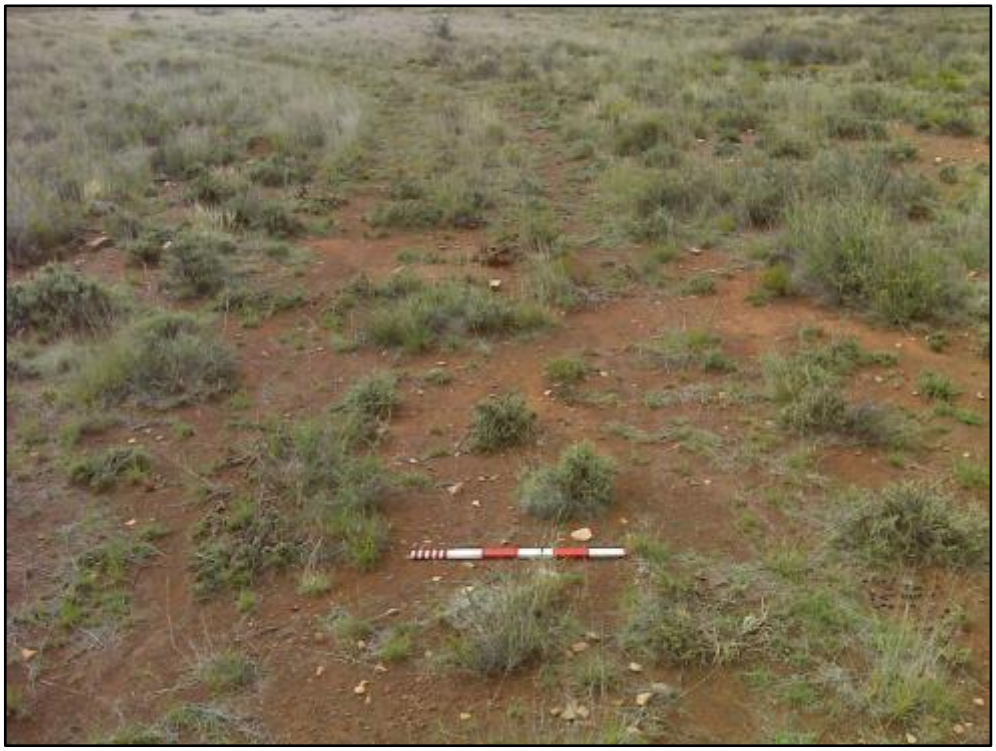

Figure 23. View of exposed stone artefacts in the road proposed for upgrade connecting the proposed Turbine 5.

Figures 24-25. Glass artefacts documented at the proposed Turbine 4.

During the phase 1 archaeological impact assessment (Binneman *et al.* 2011) several boulders containing rock engravings were encountered within the proposed development area, however, not all the rocky outcrops containing rock boulders were investigated owing to the vast extent of the distribution. Boulders containing rock engravings were observed at the areas marked S41, S42, S47, and S48 and comprised mainly of abstract scratched, horizontal lines, possible animal images and cross-hatching. S41 is situated on a rocky outcrop approximately 100m from the occurrence of the broken pottery sherds and contained scratched approximately 20cm in length. No other archaeological material remains occurred within the immediate area. Three engraved boulders situated on a rocky dolerite outcrop were documented at the area marked S42 contained vertical and diagonal lines approximately 20cm in length which have been slightly patinated, abstract scratches as well as possibly bird-like image. The areas marked S47 and S48 contained mostly boulders containing abstract scratches, however, several patinated images of cross-hatching resembling nets were observed.

Boulders occurring within the areas proposed for the construction of the wind turbines and new roads were investigated for possible rock engravings. However, the boulders investigated are mostly weathered and do not provide a suitable surface for rock engravings. The boulders occurring on the series of *koppies* between Turbine 1 – 5 in the northern section, Turbines 14 – 20 in the middle section, and Turbines and 33 – 37 as well as on rather side of the route for the proposed new road in the southern section contained no rock engravings. Several boulders containing scratched, cross-hatched, and abstract images occurs for about 230 m immediately south of the existing road in the southern section that connect to the middle section, previously recorded in the phase 1 archaeological impact assessment (S47-ENG7 and S48-ENG8) (Binneman *et al.* 2011), was encountered during the walk-through survey (Figures 26-30). The appropriate mitigation measures for this area must be implemented before construction begins.

Figure 26. View of the boulders situated immediately south of the existing road proposed for upgrading.

Figure 27. View of the boulders next to the existing road proposed for upgrading.

Figure 28. View of the general landscape and existing road (brown line) proposed for upgrading from the rock engraving sites.

Figure 29. Example of the scratchings identified around the area S47-ENG7 and S48-ENG8.

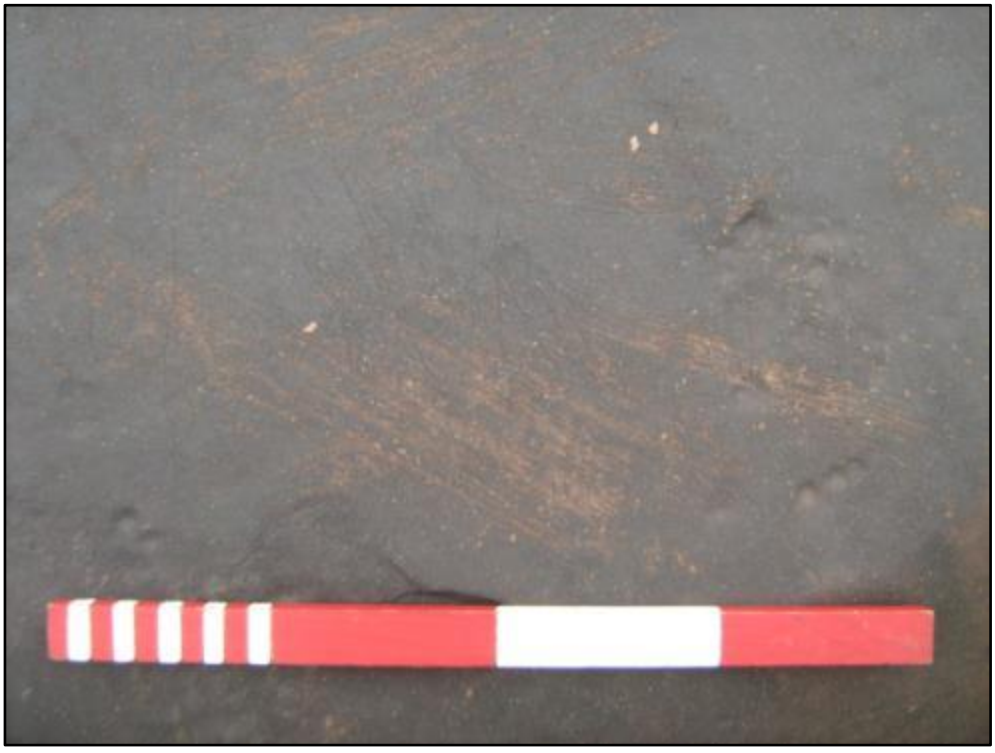

Figure 30.Example of the patinated surfaces with scratches and lines.

During the phase 1 archaeological impact assessment (Binneman *et al.* 2011) only one area containing three stone wall structures was documented on the farm Nobelsfontein at the area marked S44 overlooking the flat floodplain during the phase 1 archaeological impact assessment. Three circular stone-packed structures averaging between 2.5mx2.5m in extent and 1m-1.5m in height are situated about 20m in distance from each other (Figures 31-32). Each stone walled structure has an entrance of about 1m. These structures are situated next to an existing internal farm road in the middle section of the proposed area for development. This road is not expected to be upgraded. The appropriate mitigation measures must be implemented before the construction of the new roads and turbines begin.

A dry packed stone-wallcomplex and the remains of building foundations is situated west and one structure situated north of the series of *koppies* between Turbines 1 – 3, south of the existing railway line (Figure 33). The series of *koppies* continues north-east to the main road that connects the N2 and the N12 national routes (Figure 34). Stone-wall features occur west along the base of these*koppies*leading to the main road; these are not included in the proposed development area and have not been recorded in detail, but included to emphasize that the stonewalling complex is not in isolation to wider landscape.

One circular dry stone-packed structure (Nob SW2) occurs at the northern point of the series of *koppies* proposed for Turbines 1 – 5. The circular shaped feature, probably representing a pen to house small domestic stock, is approximately 2 m x 2 m in extent and 1 m in height. The stone-wall complex situated west of the *koppies*comprises six varying individual structures (Nob SW1-1 – Nob SW1-6) occupies an area of about 90 m. The complex comprises circular, rectangular, and square stone-wall features differing in sizes and heights (Figures 35-40). A large natural boulder is used as part of the wall for the southern-most feature.

The remains of a building foundation are situated approximately 125 m south of the stone-wall complex (Figure 40). Pieces of metal, cans, broken glass fragments, and ceramics were observed lying around the remains of the building (Figures 41-42).

Figure 31. View of one of the two stone-wall structures adjacent to the internal farm road situated in the middle section of the proposed development area.

Figure 32. View of the second stone-wall structure adjacent to the internal farm road situated in the middle section of the proposed development area.

Figure 33.Eye-level view of the stone-wall complex west of the series of *koppies* proposed for Turbines 1-5.

Figure 34. View of the *koppies* continuing north-east of the proposed area for development and the railway line housing several stone-wall structures.

Figure 35. Bird's eye view of the stone-wall complex (Nob-SW1-1 – Nob-SW1-6)

Figure 36. Circular stone-wall feature (Nob-SW1-1).

Figure 37. View of a rectangular stone-wall feature (Nob-SW1-3).

Figure 37. View of a large conjoined stone-wall structure (Nob-SW1-4).

Figure 38. View of a square stone-wall feature (Nob-SW1-5).

Figure 39. View of the stone-wall structure incorporating a naturally placed boulder in one of walls (Nob-SW1-6).

Figure 40.The remains of the foundation of a building.

Figure 40. Examples of the artefacts (glass bottle: left; ceramic sherd: right) observed around the area of the remains of the building foundation.

During the phase 1 archaeological impact assessment (Binneman *et al.* 2011) exposed human remains were encountered on the edge of an approximately 3m high river donga which has eroded awayat the area marked S45.The area of exposure is situated within 200m and 150m from the railway and the farm road. Buried human remains about 1m below the surface could be seen in the side of the donga. The human remains seem to have been buried in a plastic weaved almost hessian-like sack wearing a t-shirt. Three wooden railroad sleepers had been placed on top of the burial and then covered over with soil. The skull has been eroded out of the burial area and may have been washed away by the river; one clavicle (collar bones) was recovered on the bank of the river area immediately below the burial area. More human remains are exposed at the surface area of the 3m – 4m high donga next to the exposed burial. One humerus (arm bone) has been completely exposed at the surface. The area of exposed human remains is approximately 20mx10m in extent. There is no evidence of occupation structures within the immediate area, however, a concentration of broken glass, ceramics and porcelain occurs between the railway, the farm road and the river donga area.

The human remains have not yet been removed, however, the area containing the human remains is not included within the areas proposed for development and will not be negatively affected.

Figure 41.The current condition of the exposed human remains.

Figure 42. The current condition of the exposed human remains at the surface.

Figure 43. The current condition of the exposed human remains at the surface.

Informal graves were documented immediately next tothe internal farm road leading from the nearby railway siding to the area proposed for Turbines 33 – 41 in the southern section of the proposed development area.The graves are probably associated with the nearby railway siding. The area comprised between 22 and 25 graves in a row and extends for 60 m along the internal farm (Figure 44). The graves are mostlypacked with brick and stones; however, others can only identified by some of the erect flat rock representing headstones. One grave has a roughly engraved headstone, and one has a metal heart-shaped headstone. Two of the graves have been cordoned off, but only the iron poles remain (Figures 45-47).

Figure 44. View of the row of graves immediately next to the internal farm road.

Figure 45.Example of one of the graves and associated headstone.

Figure 46. Example of one of the graves identified by the erect rock headstone.

Figure 47. Graves that have previously been cordoned off and the heart-shaped headstone in the front.

The archaeological heritage and material remains encountered within the proposed areas for development and that be affected during the construction of the Nobelsfontein Wind Energy Facility on the farm Nobelsfontein 227 (including the farms Annex Nobelsfontein 234, Ezelsfontein 235 and Rietkloofplaaten) include surface scatters of Middle Stone Age stone artefacts that contained no other associated archaeological heritage and material remains; boulders with rock engravings and scratches; stone wall structures; the remains of a building foundation; human remains; and graves.

7. SURVEY/DESCRIPTION OF SITES

The following archaeological and historical heritage remains, sites, and features were documented during the survey. The recommendations provided in the Review Comment of the South African heritage Resources Agency has been included as well as the areas previously recorded that should and should not be affected by the development activities.

7.1. Stone Artefact Occurrences and Sites

A relatively wide distribution of Middle Stone Age stone artefacts were documented west of the series of *koppies* between the proposed areas for Turbines 1 – 5 (Nob SA4 – Nob SA14).). The stone artefacts were manufactured using a variety of raw materials such as shale and hornfels, and included flakes andfacetted platforms flakes peculiar to the Middle Stone Age, blades, and several cores. Some stone artefacts have been retouched

and utilized as identified by the edge-damage. A relatively dense surface scatter of stone artefacts was documented in the road proposed for upgrade that will connect to Turbine 5. One stone artefact was recorded between the rocky *koppies* in the southern section of the study area.It is unlikely that the surface exposed stone artefacts occur *in situ* and are considered to be in a secondary and disturbed context. However, it is possible that stone artefacts may occur between the surface and between 50 cm – 80 cm below ground. No other organic or material cultural remains were documented in association with the stone artefacts.

The stone artefact occurrences and scatters are considered as having a medium-low cultural significance.

The stone artefact occurrences and scatters have been allocated general protection(NHRA 25 of 1999).

(See Table 1 for descriptions and co-ordinates)

SAHRA's review comment recommended that:

1. The Later Stone Age sites S31, S32 and S39 must be mitigated with a Phase 2 Archaeological impact Assessment. Mitigation in the form of recording, sampling and a photographic record must be undertaken before trenching and any other earthmoving activity resulting from this proposed project commences. The archaeologist will require a mitigation permit from SAHRA in term of S. 35 of the National Heritage Resources Act (Act 25 of 1999). On receipt of a satisfactory mitigation (phase) permit report from the archaeologist, SAHRA will make further recommendations in terms of the site such as its final destruction or additional sampling.

These sites recorded in the phase 1 archaeological impact assessment (Binneman *et al.* 2011) is not included within the focus area for the Nobelsfontein Wind Energy Facility and should be negatively affected during construction activities.

2. Destruction of the sites S46, GPS48 must be permitted by SAHRA through destruction permit. The developer or their archaeologist must apply to SAHRA for the permit. A single application (destruction permit) must be used for all sites.

These sites will be affected during the upgrade of the road leading from the southern section to the middle section of the proposed development area. This recommendation has been carried over and included in the recommendations for this report.

7.2. Rock Art (Paintings and Engravings)

Rock shelters containing rock paintings were documentedon the farm Nobelsfontein 227, at the areas marked S49 and S50 and occur along the tops of ridges and in a valley. The paintings were painted in red ochre and contained images of human figures and U-shaped curls and finger stripes.Boulders containing rock engravingsweredocumented at the areas marked S41, S42, S47 and S48. Images include depictions of European settlers and animal figures, as well as scratches and abstract and patinated cross-hatch patterns. Two gong rocks were observed at S42 in close proximity to the rock engravings.

The rock paintings are considered as having a high cultural significance.

The rock engravings are considered as having a medium-high cultural significance.

The rock art has been allocated general protection(NHRA 25 of 1999).

(See Table 1 for descriptions and co-ordinates)

SAHRA's review comment recommended that:

1. The proposed final position of wind turbines and solar panels must be investigated for the presence of possible rock engravings and rock paintings.

No new rock painting or rock engraving sites were documented during the walk-through survey. The rock painting sites previously documented should not be affected by the development. The rock engraving sites (S47-ENG7 and S48-ENG8) are situated next to one of the roads proposed for upgrade and access to the connecting turbines.

2. A Heritage Management Plan for rock engravings, rock paintings and gong rocks must be compiled and submitted to SAHRA for revision.

A Heritage Management Plan should be complied for the rock engraving sites S47-ENG7 and S48-ENG8) that will be affected by the development.

7.3. Dry Packed Stone Walling

Stone-wall structures were documented at the areas markedNobSW1-1 – NobSW1-6, NobSW2, and NobSW3-1 – NobSW3-2. The NobSW1-1 – NobSW1-6 complex of six dry packed stone walling structures at the base of the series of *koppies* proposed for Turbines 1 – 3. It is highly likely that these structures would be negatively impacted by the development. NobSW2 is situated at the northern end of the same series of *koppies* the area proposed for Turbine 1 and would be negatively impacted by the development.

NobSW 3-1 – NobSW3-2 are situated next to an existing internal farm road. The road is not proposed for upgrade as a main access route to the connecting turbines, however, these structures may be negatively affected by the development as an access during the construction activities for the new roads.

The dry packed stone wall structures are considered as having a high cultural significance.

The dry packed stone wall structures have been allocated general protection(NHRA 25 of 1999).

(See Table 1 for descriptions and co-ordinates)

SAHRA's review comment recommended that:

1. No construction activity is allowed within 100 m of the rock paintings, rock engravings rock shelters where rock art material is preserved and sites with stone walls and kraals. If this distance cannot be avoided and the development has to occur within 100 m from any of these sites, a temporary fence must be erected around the site (in consultation with the archaeologist) and foremen and workmen educated about its significance.

2. In no circumstance will development be allowed within 50 m from the stone walls and kraals and from rock art sites.

Theserecommendation must be implemented apriori the commencement of construction activities.

7.4. Buildings

The remains of building foundations were documented in the southern section (BE1) associated with the nearby railway siding. It is unlikely that these remains will be affected by the development. The remains of foundation was also documented south of the dry packed stone walling complex (NobSW1-1 – NobSW1-6). Several historical artefacts were documented within the vicinity of the building remains. It is likely that these remains will be affected by the construction of Turbines 1 -3 and the associated access roads.

The remains of the foundations are considered as having a low cultural significance.

The remains of the foundations of the building structures have been allocated general protection(NHRA 25 of 1999), when taken into consideration in the wider landscape and associated heritage remains and structures.

(See Table 1 for descriptions and co-ordinates)

7.5. Other Artefacts

The only occurrence of Khoekhoen pottery within the area proposed for development occurred at the area marked S40 on the farm Nobelsfontein 227. The pottery occurrence was not encountered during the current survey and therefore does not occur within the proposed development area and should not be negatively affected by the development.

Historical artefacts comprising metal, cans, glass, and ceramics were documented south of the dry packed stone walling complex (NobSW1-1 – Nob SW1-6) within the vicinity of the remains of the foundations of the building ruins (BE2 and BE3).

Two worked glass artefacts (Nob GA1 and Nob GA2) resembling Later Stone Age scraper-like implements were documented on the small *koppie*proposed for the construction of Turbine 4.

The historical artefacts are considered as having a medium cultural significance.

The worked glass artefacts are considered as having a medium-high cultural significance.

The historical and worked glass artefacts have been allocated general protection(NHRA 25 of 1999), when taken into consideration in the wider landscape and associated heritage remains and structures.

(See Table 1 for descriptions and co-ordinates)

SAHRA's review comment recommended that:

1. The Khoekhoen pottery at site S40 should be collected and recorded. The archaeologist will apply for a collection permit from SAHRA.

The pottery occurrence was not encountered during the current survey and therefore does not occur within the proposed development area and should not be negatively affected by the development.

7.6. Human Remains

Exposed human remains were identified in the side of a 3m-4m high river donga documented at the area marked S45 / Nob HR1. The skull and the clavicles have eroded out of the 1m deep burial area into the river area below. More exposed human remains can be identified at the surface of the donga next to the exposed burial.

The human remains have not yet been removed. The condition of the human remains was investigated and reported on in the current report. These human remains should not be negatively affected by the development.

The human remains are considered as having a high cultural significance.

The human remains have been allocated general protection(NHRA 25 of 1999).

(See Table 1 for descriptions and co-ordinates)

SAHRA's review comment recommended that:

1. The Phase II HIA is required for the area of the remains. This should include the area of the burial ground and include archival research to investigate if there is a possible link between the burials and construction of the railway line. When a Phase II report is received by the SAHRA Burial Ground and Graves Unit, further recommendations will be made in relation to a possible relocation or preservation of the graves. Provisions stipulated in sectin 36 of the National Heritage Resources Act (Act No 25 of 1999) are applicable. (See Appendix 1 and SAHRA Regulations).

7.7. Graves

Between 22 and 25 graves (NobG1-1 – NobG1-3) were documented immediately next to the existing internal farm road in the southern section of the proposed development area. This road is not proposed to be used as a main access road and a new one will be constructed approximately 200 m east of the area comprising the graves. Most of the graves are stone packed with informal headstones. The dates on the graves are unclear but the latest may date to 1982.

The graves are considered as having a high significance.

The graves have been allocated general protection(NHRA 25 of 1999), when taken into consideration in the wider landscape and associated heritage remains and structures.

(See Table 1 for descriptions and co-ordinates)

8. RECOMMENDATIONS

The area is of a medium cultural sensitivity and the following recommendations must be considered:

1. Destruction of the sites S46, GPS48 must be permitted by SAHRA through destruction permit. The developer or their archaeologist must apply to SAHRA for the permit. A single application (destruction permit) must be used for all sites.

2. No construction activity is allowed within 100 m of the rock paintings, rock engravings rock shelters where rock art material is preserved and sites with stone walls and kraals. If this distance cannot be avoided and the development has to

occur within 100 m from any of these sites, a temporary fence must be erected around the site (in consultation with the archaeologist) and foremen and workmen educated about its significance.

3. A Heritage Management Plan for the rock engravings situated at S47-ENG7 and S48-ENG8 situated south of the road proposed for upgrading within the southern section of the proposed development area must be compiled and submitted to SAHRA for revision.

4. No construction activities may take place within 100m of the documented stone-wall structures.

5. In no circumstance will development be allowed within 50 m from the stone walls and kraals and from rock art sites.

6. If it is inevitable that construction activities must take place within 100m of any documented and undocumented rock shelters containing paintings, rocky outcrops with boulders containing rock engravings and stone-wall structures a perimeter fence must erected to protect the sensitive area from any possible negative impact.

7. The Phase II HIA is required for the area of the remains. This should include the area of the burial ground and include archival research to investigate if there is a possible link between the burials and construction of the railway line. When a Phase II report is received by the SAHRA Burial Ground and Graves Unit, further recommendations will be made in relation to a possible relocation or preservation of the graves. Provisions stipulated in sectin 36 of the National Heritage Resources Act (Act No 25 of 1999) are applicable. (See Appendix 1 and SAHRA Regulations).

8. An alternative area/s for Turbines 1 -5 should be considered owing to the possible destruction of the series of *koppies* in the construction of the wind turbines on these *koppies*. The construction of these turbines may negatively affect the stone wall complex situated around the foot of Turbine 1, the historically significant area situated east, previously recorded in the report for the proposed substation and associated power lines, as well sites situated on the area proposed for Turbine 4 and 5.

9. The informal grave area must be clearly demarcated and fenced and cordoned off and no development activities should take place within 100 m of the grave area.

10. It is possible that *in situ* archaeological sites/remains, and human remains may be uncovered during construction. Therefore, a professional archaeologist should be appointed during the vegetation removal and construction phases of the development.

9.CO-ORDINATES OF THE AREAS CONTAINING ARCHAEOLOGICAL HERITAGE AND MATERIAL REMAINS AND GENERAL GPS READINGS

TABLE 9.1.Table 1: Co-ordinates of the areas containing archaeological heritage and material remains and general GPS readings.

REFERENCE	DESCRIPTION	CO-ORDINATE	HERITAGE GRADING
Stone Artefact Occurrences and Scatters			
Nob SA1	Stone artefact scatter	31°46'16.30"S; 23°10"56.00"E	General protection
Nob SA2	Stone artefact scatter	31°47'02.20"S; 23°09"59.00"E	General protection
Nob SA3	Stone artefact scatter	31°46'57.20"S; 23°09"10.60"E	General protection
Nob SA4	Stone artefact scatter	31°44'06.70"S; 23°10"43.40"E	General protection
Nob SA5	Stone artefact scatter	31°43'40.20"S; 23°11"04.60"E	General protection
Nob SA6	Stone artefact scatter	31°43'38.50"S; 23°11"06.20"E	General protection
Nob SA7	Stone artefact scatter	31°43'47.30"S; 23°10"58.60"E	General protection
Nob SA8	Stone artefact scatter	31°43'52.90"S; 23°10"53.50"E	General protection
Nob SA9	Stone artefact scatter	31°43'54.00"S; 23°10"52.00"E	General protection
Nob SA10	Stone artefact scatter	31°44'06.10"S; 23°10"28.40"E	General protection
Nob SA11	Stone artefact scatter in road	31°44'07.30"S; 23°10"29.80"E	General protection
Nob SA12	Stone artefact scatter	31°44'06.20"S; 23°10"28.50"E	General protection
Nob SA13	Stone artefact scatter	31°44'03.90"S; 23°10"48.20"E	General protection
Nob SA14	Stone artefact scatter	31°43'44.90"S; 23°11"11.80"E	General protection
Rock Art			
S50-RA5	Binneman *et al* 2011	31°45'26.50"S; 23°11"03.80"E	
Engravings			
NobEng1	Rock engravings on boulders	31°47'04.40"S; 23°10"01.60"E	General Protection
S47-ENG7	Binneman *et al.* 2011	31°47'03.10"S; 23°09"54.70"E	General Protection
S48-ENG8	Binneman *et al.* 2011	31°47'04.20"S; 23°10"00.12"E	General Protection
Stonewalling			
NobSW1-1	Stone-wall structure	31°43'34.50"S; 23°11"11.10"E	General Protection
NobSW1-2	Stone-wall structure	31°47'34.80"S; 23°11"12.70"E	General Protection
NobSW1-3	Stone-wall structure	31°43'35.60"S; 23°11"12.10"E	General Protection

NobSW1-4	Stone-wall structure	31°43’35.80”S; 23°11”11.80”E	General Protection
NobSW1-5	Stone-wall structure	31°43’36.00”S; 23°11”11.50”E	General Protection
NobSW1-6	Stone-wall structure	31°43’36.20”S; 23°11”11.00”E	General Protection
NobSW2	Stone-wall structure	31°43’34.50”S; 23°11”16.50”E	General Protection
NobSW3-1	Stone-wall structure	31°45’49.70”S; 23°08”23.20”E	General Protection
NobSW3-2	Stone-wall structure	31°45’50.30”S; 23°08”22.10”E	General Protection
Built Environment			
Nob BE1	Remains	31°47’17.40”S; 23°10”22.20”E	
NobBE2	Remains of structure	31°43’40.40”S; 23°11”05.40”E	
NobH1-2	Remains of structure; 13x13m roughly	31°43’38.50”S; 23°11”06.90”E	
RW SIDING	Railway siding	31°47’01.70”S; 23°10”31.70”E	
Other Artefactual Material			
Nob GA1	Clear glass worked	31°44’08.30”S; 23°10”42.00”E	General Protection
Nob GA2	Purple glass; core; chip	31°44’07.90”S; 23°10”42.30”E	General Protection
NobOES1	Ostrich eggshell fragments	31°45’56.80”S; 23°08”29.90”E	General Protection
Human Remains			
Nob HR1	Human remains	31°45’56.40”S; 23°10”53.10”E	General Protection
S45-HR1	Binneman *et al* 2011	31°45’56.60”S; 23°10”52.90”E	General Protection
Graves			
Nob G1-1	Northern extent of grave area(between 22-25 informal graves)	31°47’14.40”S; 23°10”31.30”E	General Protection
NobG1-2	Graves	31°47’15.40”S; 23°10”31.10”E	General Protection
NobG1-3	Graves	31°47’15.90”S; 23°10”30.80”E	General Protection
Turbine Positions			
NobT1	Turbine position	31°43’43.60”S; 23°11”11.50”E	N/A
NobT2	Turbine position	31°43’51.30”S; 23°11”03.40”E	N/A
NobT3	Turbine position	31°44’02.20”S; 23°10”53.50”E	N/A
NobT4	Turbine position	31°44’07.42”S; 23°10”42.70”E	N/A
NobT5	Turbine position	31°44’14.80”S; 23°10”32.70”E	N/A
NobT6	Turbine position	31°44’17.10”S; 23°10”16.30”E	N/A

NobT7	Turbine position	31°44’24.80”S; 23°09”45.70”E	N/A
NobT8	Turbine position	31°44’28.50”S; 23°09”35.60”E	N/A
NobT9	Turbine position	31°44’34.90”S; 23°09”26.60”E	N/A
NobT10	Turbine position	31°44’59.60”S; 23°09”32.70”E	N/A
NobT11	Turbine position	31°45’09.90”S; 23°09”23.90”E	N/A
NobT12	Turbine position	31°45’24.00”S; 23°09”16.90”E	N/A
NobT13	Turbine position	31°45’28.90”S; 23°09”04.50”E	N/A
NobT14	Turbine position	31°45’34.00”S; 23°08”54.50”E	N/A
NobT15	Turbine position	31°45’42.90”S; 23°08”45.60”E	N/A
NobT16	Turbine position	31°45’51.70”S; 23°08”37.30”E	N/A
NobT17	Turbine position	31°45’57.00”S; 23°08”27.50”E	N/A
NobT18	Turbine position	31°46’07.50”S; 23°08”14.00”E	N/A
NobT19	Turbine position	31°46’10.20”S; 23°08”04.40”E	N/A
NobT20	Turbine position	31°46’15.10”S; 23°07”53.90”E	N/A
NobT21	Turbine position	31°46’05.90”S; 23°08”49.20”E	N/A
NobT22	Turbine position	31°46’03.00”S; 23°09”01.40”E	N/A
NobT23	Turbine position	31°45’59.60”S; 23°09”11.10”E	N/A
NobT24	Turbine position	31°45’54.70”S; 23°09”21.50”E	N/A
NobT25	Turbine position	31°45’50.00”S; 23°09”32.70”E	N/A
NobT26	Turbine position	31°46’28.00”S; 23°09”19.90”E	N/A
NobT27	Turbine position	31°46’23.60”S; 23°09”34.50”E	N/A
NobT28	Turbine position	31°46’11.90”S; 23°10”02.30”E	N/A
NobT29	Turbine position	31°46’02.40”S; 23°10”11.00”E	N/A
NobT30	Turbine position	31°45’55.20”S; 23°10”23.60”E	N/A
NobT31	Turbine position	31°45’50.50”S; 23°10”35.30”E	N/A
NobT32	Turbine position	31°45’36.90”S; 23°10”41.10”E	N/A
NobT33	Turbine position	31°48’06.00”S; 23°10”25.30”E	N/A
NobT34	Turbine position	31°48’13.40”S; 23°10”16.50”E	N/A
NobT35	Turbine position	31°48’15.30”S; 23°10”45.60”E	N/A
NobT36	Turbine position	31°48’14.30”S; 23°10”58.00”E	N/A
NobT37	Turbine position	31°48’14.60”S; 23°11”10.70”E	N/A

NobT38	Turbine position	31°48’51.90”S; 23°10”59.20”E	N/A
NobT39	Turbine position	31°48’59.90”S; 23°10”52.20”E	N/A
NobT40	Turbine position	31°49’07.40”S; 23°10”43.40”E	N/A
NobT41	Turbine position	31°49’16.80”S; 23°10”35.40”E	N/A
General Readings			
Nob1	General Reading	31°48’20.70”S; 23°11”45.80”E	N/A
Nob2	General Reading	31°48’27.50”S; 23°11”43.60”E	N/A
Nob3	General Reading	31°48’32.30”S; 23°11”33.90”E	N/A
Nob4	General Reading	31°48’42.90”S; 23°11”21.30”E	N/A
Nob5	General Reading	31°48’50.70”S; 23°11”10.00”E	N/A
Nob6	General Reading	31°49’03.90”S; 23°10”45.90”E	N/A
Nob7	General Reading	31°49’56.20”S; 23°10”50.90”E	N/A
Nob8	General Reading	31°48’44.30”S; 23°10”56.60”E	N/A
Nob9	General Reading	31°48’34.50”S; 23°10”53.20”E	N/A
Nob10	General Reading	31°47’37.90”S; 23°10”11.60”E	N/A
Nob11	General Reading	31°47’37.60”S; 23°08”53.50”E	N/A
Nob12	General Reading	31°45’54.90”S; 23°08”33.00”E	N/A
Nob13	General Reading	31°45’44.70”S; 23°08”47.80”E	N/A
Nob14	General Reading	31°45’19.90”S; 23°09”20.20”E	N/A
Nob15	General Reading	31°45’04.40”S; 23°09”55.00”E	N/A
Nob16	General Reading	31°45’29.90”S; 23°10”31.70”E	N/A
Nob17	General Reading	31°44’08.00”S; 23°09”37.60”E	N/A
Nob18	General Reading	31°45’51.90”S; 23°08”17.80”E	N/A
Nob19	General Reading	31°43’56.60”S; 23°10”53.80”E	N/A
Nob20	General Reading	31°43’33.20”S; 23°11”13.50”E	N/A

10. REFERENCES

Binneman, J.; Booth, C. &Higgitt, N. 2010. A phase 1 archaeological impact assessment (AIA) for the proposed Skietkuil Quarries 1 and 2 on the Farm Skietkuil No. 3, Victoria West, Central Karoo District, Western Cape Province.

Binneman, J. N. F., Booth, C., & Higgitt, N. 2011.Phase 1 Archaeological Impact Assessment for the proposed Karoo Renewable Energy Facilityon a site south of Victoria West, Northern and Western Cape Province on the Farms Phaisantkraal 1, Modderfontein 228, Nobelsfontein 227, Annex Nobelsfontein 234, Ezelsfontein 235, and Rietkloofplaaten 239.

Booth, C and Higgitt, N. 2010. An archaeological desktop study for the proposed Karoo Renewable Energy Facility on a site south of Victoria West, Northern and Western Cape Province.

Goodwin, A. J. H. 1926. The Victoria West Industry. In: Goodwin, A.J.H. & van Riet Lowe, C. (eds). *The South African Cultures of South Africa*.Annals of the South African Museum.

Goodwin, A.J.H. 1946. Earlier, Middle and Later.*South African Archaeological Bulletin*, Vol. 3 (1): 74-76.

Morris, D. 2006. Revised archaeological specialist input for the proposed Hydra-Gamma 765kV transmission lines along the (existing) 400kV corridor near De Aar and Victoria West, Northern Cape Province.

National Heritage Resources Act 25 of 1999.

Parkington, J.; Morris, D. &Rusch, N. 2008.*Karoo Rock Engravings*. Cape Town: Creda Communications.

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11. GENERAL REMARKS AND CONDITIONS

Note: This report is a phase 1 archaeological heritage impact assessment/ investigation only and does not include or exempt other required heritage impact assessments (see below).

The National Heritage Resources Act (Act No. 25 of 1999, section 35) (Brief legislative requirements) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual linguistic or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.

It must be emphasized that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, reflect the true state of affairs. Many sites/features may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered, (such as during any phase of construction work), archaeologists must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Act No. 25 of 1999.

It must also be clear that Archaeological Specialist Reports (AIAs) will be assessed by the relevant heritage resources authority. The final decision rests with the heritage resources authority, which may grant a permit or a formal letter of permission for the destruction of any cultural sites.

APPENDIX A: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for developers

1. Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping and developers are requested to be on the alert for this.

2. Freshwater mussel middens

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m^2 in extent, should be reported to an archaeologist.

3. Stone artefacts

These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified

4. Fossil bone

Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

5. Large stone features

They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane.* They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

6. Historical artefacts or features

These are easy to identified and include foundations of buildings or other construction features and items from domestic and military activities.