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Basic Assessment Process for the Construction of a Pump Station and Pipeline for Wollie se Gat, Secunda

Notification of Intent to Develop

Prepared for:

Sasol Mining (Pty) Ltd Twistdraai Export Plant

Project Number:

SAS6986

April 2021



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DETAILS AND DECLARATION OF THE SPECIALIST

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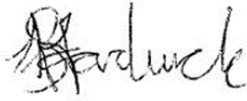
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I, Shannon Hardwick, declare that: –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
 - I declare that there are no circumstances that may compromise my objectivity in performing such work;
 - I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Date: April 2021

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TABLE OF CONTENTS

1.	Introduction	7
2.	Project Details	7
3.	Cultural Heritage Baseline Description	13
3.1.	Study Area Definitions	13
3.2.	Data Sources	14
3.2.1.	Secondary Data Sources	14
3.2.2.	Primary Data Collection	14
3.3.	Regional Cultural Heritage Baseline	16
3.4.	Results of the Pre-disturbance Survey	22
3.4.1.	Existing Environment	22
3.4.2.	Newly-identified Heritage Resources	23
4.	Assessment process	23
4.1.	NHRA Section 38(1) activities	24
4.2.	EIA Regulations listed activities	25
4.3.	Identified and known heritage resources and potential impacts	27
5.	Recommendation	28
6.	References	30

LIST OF FIGURES

Figure 1: Cultural Heritage Resources identified within the Study Area under consideration	18
Figure 2: Results of the Pre-disturbance Survey showing the Existing Environment	23

LIST OF TABLES

Table 1: Project location details	9
Table 2: Project Phases and Associated Activities	10
Table 3: Landowner details	11
Table 4: Secondary data sources.....	14
Table 5: Archaeological periods in Mpumalanga, adapted from Esterhuysen & Smith (2007)	17
Table 6: Common ceramic facies found in Mpumalanga	20
Table 7: Current assessment processes	24
Table 8: NHRA Section 38 triggers	24
Table 9: Identified listed activities.....	26
Table 10: Identified heritage resources in terms of Section 3 of the NHRA	27
Table 11: Specialist heritage recommendations	28

LIST OF PLANS

Plan 1: Regional and Local Setting of the Project.....	8
Plan 2: Proposed Project Design and Layout	12
Plan 3: Results of the Pre-disturbance Survey	15

LIST OF APPENDICES

Appendix A: Specialist CV	
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1. Introduction

Sasol Mining (Pty) Ltd (hereinafter Sasol Mining) Twistdraai Export Plant (TEP) intends to establish a pumping station, associated infrastructure and a pipeline at Wollie se Gat near the Twistdraai Export Plant (TEP), Secunda in the Mpumalanga Province (the Project). The pipeline will extend between Wollie se Gat and the solution trench at the Twistdraai Discard Dump (approximately 380 m in length).

The proposed Project triggers Listed Activities in terms of the Environmental Impact Assessment (EIA) Regulations, 2014 (GN R982 of 4 December 2014, as amended) (EIA Regulations, 2014, as amended) promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The Project therefore requires the completion of a Basic Assessment (BA) process to go ahead.

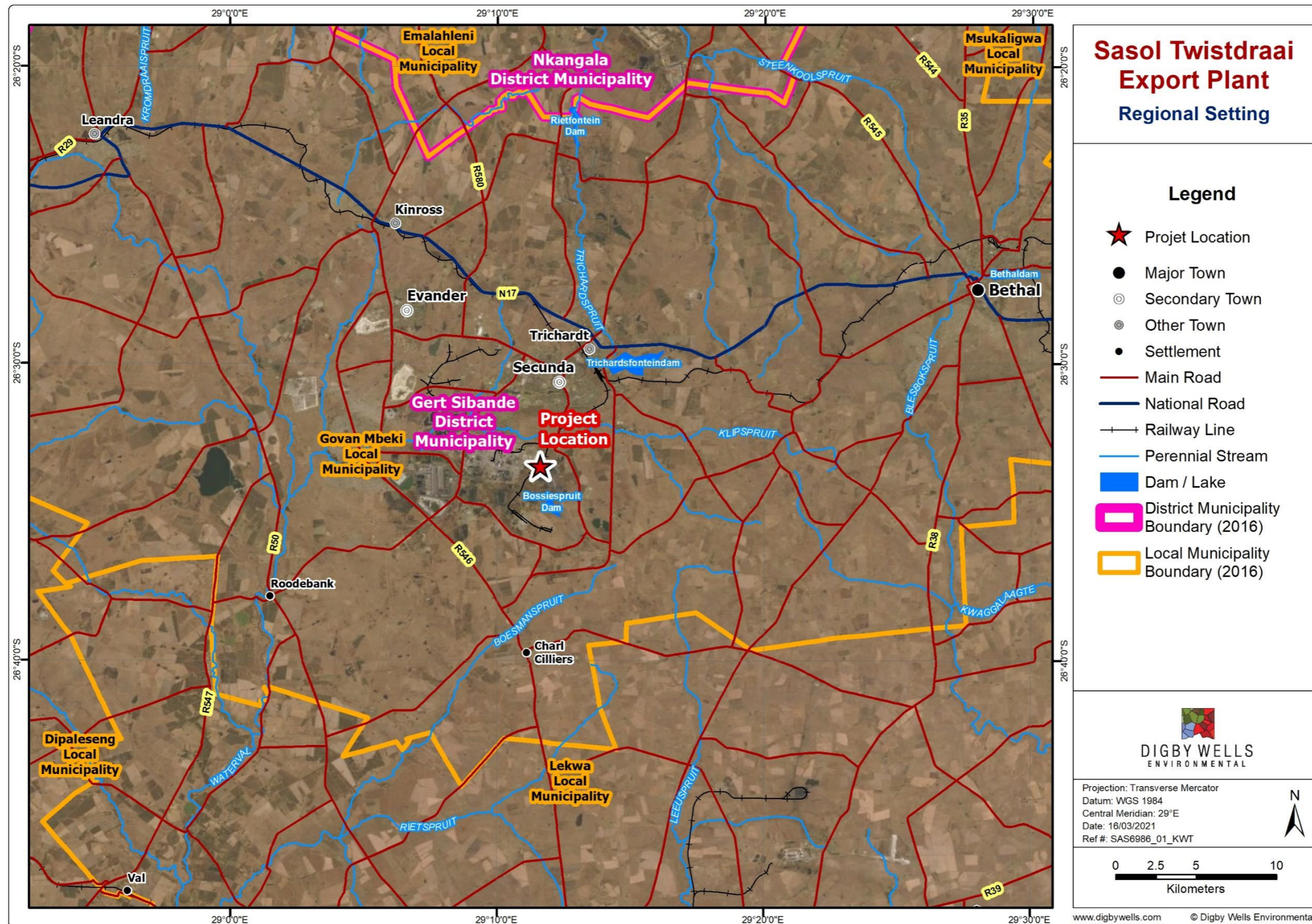
TEP appointed Digby Wells Environmental (hereinafter Digby Wells) to undertake the necessary BA process and the supporting specialist studies. The required specialist studies include a Heritage Resources Management (HRM) process in compliance with the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA).

This document serves as the Notification of Intent to Develop (NID) and Request for Exemption (RfE) from further heritage assessment for submission to the Heritage Resources Authorities (HRAs) in compliance of Section 38 of the NHRA. In this case, the applicable HRAs include the South African Heritage Resources Agency (SAHRA) and the Mpumalanga Provincial Heritage Resources Authority (MPHRA).

2. Project Details

Sasol Mining operates five coal mines within the Secunda Complex. The TEP is Sasol Mining's export coal beneficiation plant which processes coal received from the Twistdraai Thubelisha Colliery Shaft (TCTS) for the export market. This coal is transported from TCTS via overland conveyors.

The TEP is located within the secondary area of the Sasol Secunda Complex, approximately 10 km south of Secunda. The proposed Project is located within the Govan Mbeki Local Municipality (GMLM) of the Gert Sibande District Municipality (GSDM) of the Mpumalanga Province. Table 1 presents a summary of the location details of the Project and Plan 1 presents these graphically.



Plan 1: Regional Setting of the Project

Wollie se Gat is an old quarry that was established in the early 1980s during the construction of the nearby Sasol factory infrastructure and was subsequently used as a dumping area for construction rubble and associated waste. This quarry has since filled with water and is prone to overflowing in heavy and/or extended rainfall events. A wetland occurs in proximity to Wollie se Gat.

Table 1: Project location details

Name of property/ies	Sasol Mining TEP
Street address or location (e.g.: Off R44)	Nitrogen Road, Sasol Secunda Secondary Area, Secunda
Erf or farm number/s	Remaining Extent (RE) of Portion 7 of the farm Goedehoop 290 IS
Coordinates of approximate centre of project area	26°33'28.85"S
	29°11'39.79"E
Town or District	Secunda
Responsible Municipality	GMLM, GSDM
Extent of property	12 ha
Maximum extent of proposed development	0.46 ha to be disturbed through the proposed Project activities 2 ha for the road upgrade
Current use	Coal Beneficiation Plant and Twistdraai Fine Coal and Discard Disposal Facility.
Predominant land use/s of surrounding properties	The land use of the immediate surrounds is the factory associated with the Secunda Secondary Area. Land uses in the wider surrounds include urban settlement (residential, commercial and associated infrastructure), mining and agriculture

The TEP makes use of infrastructure including, but not limited to, the fine coal and discard facility to dispose of fine coal and coal discard generated during the processing and washing of the coal. Discard coal is used to construct the outer walls of the fine coal residue facility and the fine coal is disposed as a slurry at the coal residue disposal slurry. Water is removed from the residue facility via a penstock to the Return Water Dam (RWD).

TEP appointed an external service provider to assess impacts to water quality¹ at existing monitoring points RESM 7 and RESM 13 (Aquisim, 2019)². This assessment concluded that

¹ The impacts to the water quality extend to the wetland located in proximity to Wollie se Gat when the quarry floods following heavy rainfall events.

² This report was not made available to Digby Wells, only the summary of the outcomes included in the Scope of Work for this Project.

the Twistdraai coal discard disposal facility is potentially the major source of contamination at RESM 7 and RESM 13 and recommended the pumping of water from Wollie se Gat back to the discard dump as a cost-effective mitigation measure. TEP intends to implement this recommendation to abstract water from Wollie se Gat and pump the water to the lined solution trenches where the water will flow to the RWD and will be reused in processing activities.

The Project will entail the construction of a pump station at Wollie se Gat and the associated infrastructure will include a temporary office, temporary ablutions, a pumpstation and the High-Density Polyethylene (HDPE) pipeline, which will cross the wetland near Wollie se Gat. The pipeline will have a diameter of 200 mm.

Table 2 presents a summary of the proposed activities to be undertaken during the various stages of the Project lifecycle. Where possible, infrastructure will be established in already disturbed areas more than 100 m from the wetland. Plan 2 presents the proposed Project design and layout.

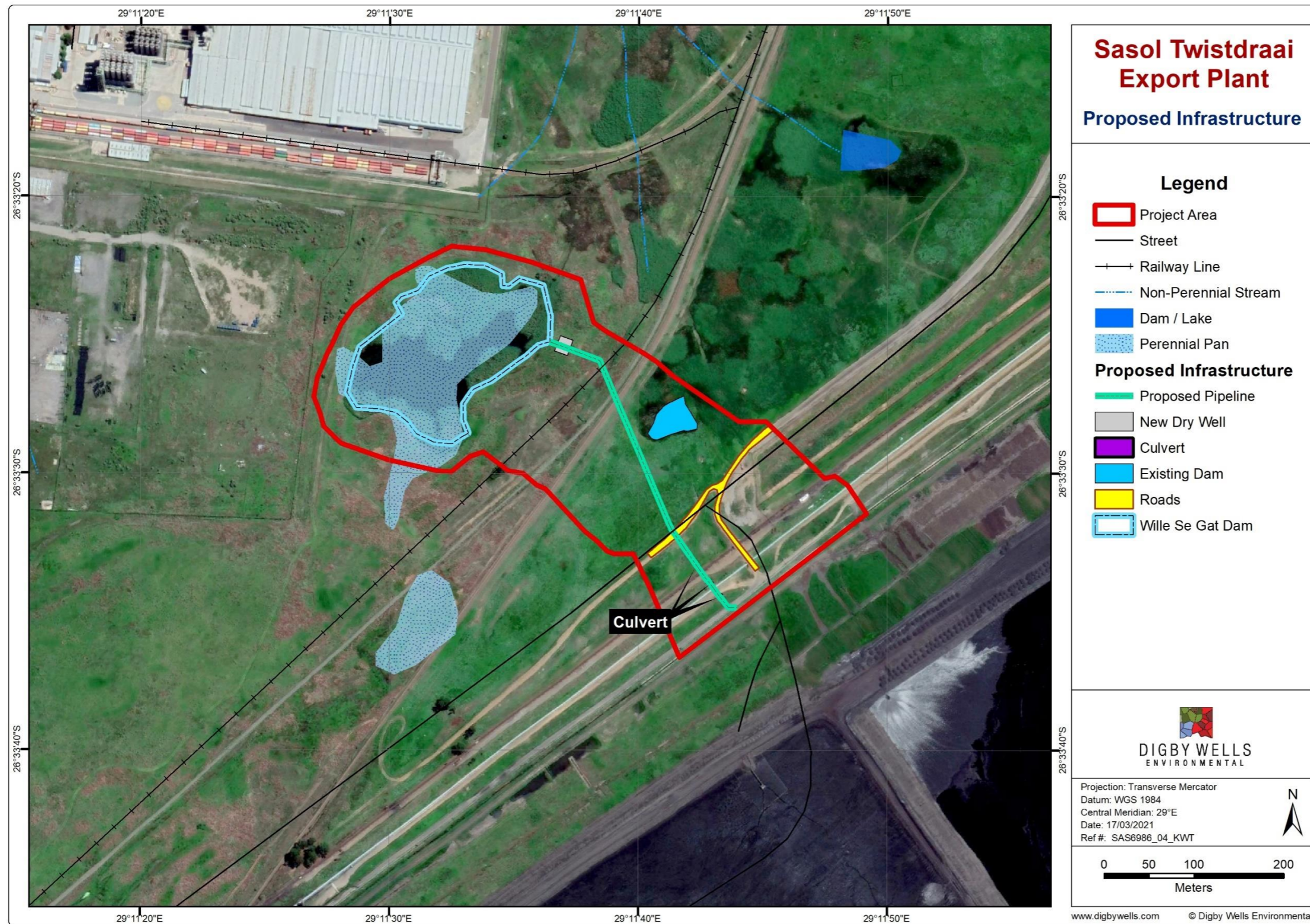
Table 2: Project Phases and Associated Activities

Project Phase	Activities
Construction Phase	Clearing and grubbing of approximately 0.3 ha of land
	Topsoil stripping and stockpiling
	Upgrades to the access road to the pumpstation (permanent)
	Establishment of the temporary laydown area and contractors offices and installation of parking bays for construction area and vehicles
	Establishment of sanitation facilities for use during construction phase
	Demarcation of site using fencing and gates
	Waste generation, storage and removal
	Construction of the proposed infrastructure
Operational Phase	Operation of infrastructure
	Maintenance of infrastructure
Decommissioning Phase	<p>Rehabilitation during construction phase:</p> <ul style="list-style-type: none"> ● Removal of building rubble and redundant material; and ● Ripping, shaping and re-vegetation of disturbed areas. <p>No other rehabilitation activities have been described for after the operational phase at this stage.</p>

Table 3 presents the details of the landowners for the properties affected by the Project and indicates whether they have been notified of the proposed Project.

Table 3: Landowner details

Name	Property	Notified
Sasol South Africa (Pty) Ltd	Portion 7 (RE) of the farm Goedehoop 290 IS	N/A



Plan 2: Proposed Project Design and Layout

3. Cultural Heritage Baseline Description

This section described the baseline condition of the cultural heritage landscape, including an indication of the areas under investigation, the sources of data informing this description and the results of the pre-disturbance survey.

3.1. Study Area Definitions

Heritage resources do not exist in isolation to the greater natural and social environment, including the socio-cultural, socio-economic and socio-political environments. In addition, the NHRA requires the grading of heritage resources in terms of national, provincial and local concern based on their importance and consequent official (i.e., State) management effort required. The type and level of baseline information required to adequately predict heritage impacts varies between these categories. Digby Wells defined three nested study areas for the purposes of this study:

- The *site-specific* study area: the farm portions extent associated with the pipeline and associated infrastructure, including a 500 m buffer area. The site-specific study area may extend linearly, in which case the site-specific study area will include the linear development and a 200 m buffer on either side of the footprint;
- The *local study area*: the area most likely to be influenced by any changes to heritage resources in the Project area or where Project development could cause heritage impacts. Defined as the area bounded by the local municipality, in this instance GMLM, with particular reference to the immediate surrounding properties and/or farms. The local study area was specifically examined to offer a backdrop to the socio-economic conditions within which the proposed development will occur. The local study area furthermore provided the local development and planning context that may contribute to cumulative impacts; and
- The *regional study area*: the area bounded by the district municipality, which here is the GSDM. Where necessary, the regional study area may be extended outside the boundaries of the district municipality to include much wider regional expressions of specific types of heritage resources and historical events. The regional study area also provided the regional development and planning context that may contribute to cumulative impacts.

The cultural heritage baseline description below considers these three study areas.

3.2. Data Sources

This section provides a summary of the primary and secondary data informing this report.

3.2.1. Secondary Data Sources

Section 6 includes a detailed list of the published literature consulted to compile this report. Table 4 presents all other data sources consulted to inform this NID, including sources for historical imagery. The unpublished reports listed in Table 4 were sourced from the South African Heritage Resources Information System (SAHRIS).

Table 4: Secondary data sources

Databases					
University of the Witwatersrand (WITS) Archaeological Database (2010)					
Genealogical Society of South Africa (GSSA) database (2011)					
SAHRIS Cases					
Case ID	5472	Case ID	1724	Map ID	672
Case ID	9404	Case ID	1487	Map ID	710
Case ID	1277	Case ID	4309	Map ID	1025
Case ID	12164	Map ID	659	Map ID	719
Case ID	6251	Map ID	719	Map ID	655
Case ID	1722	Map ID	622	Map ID	756

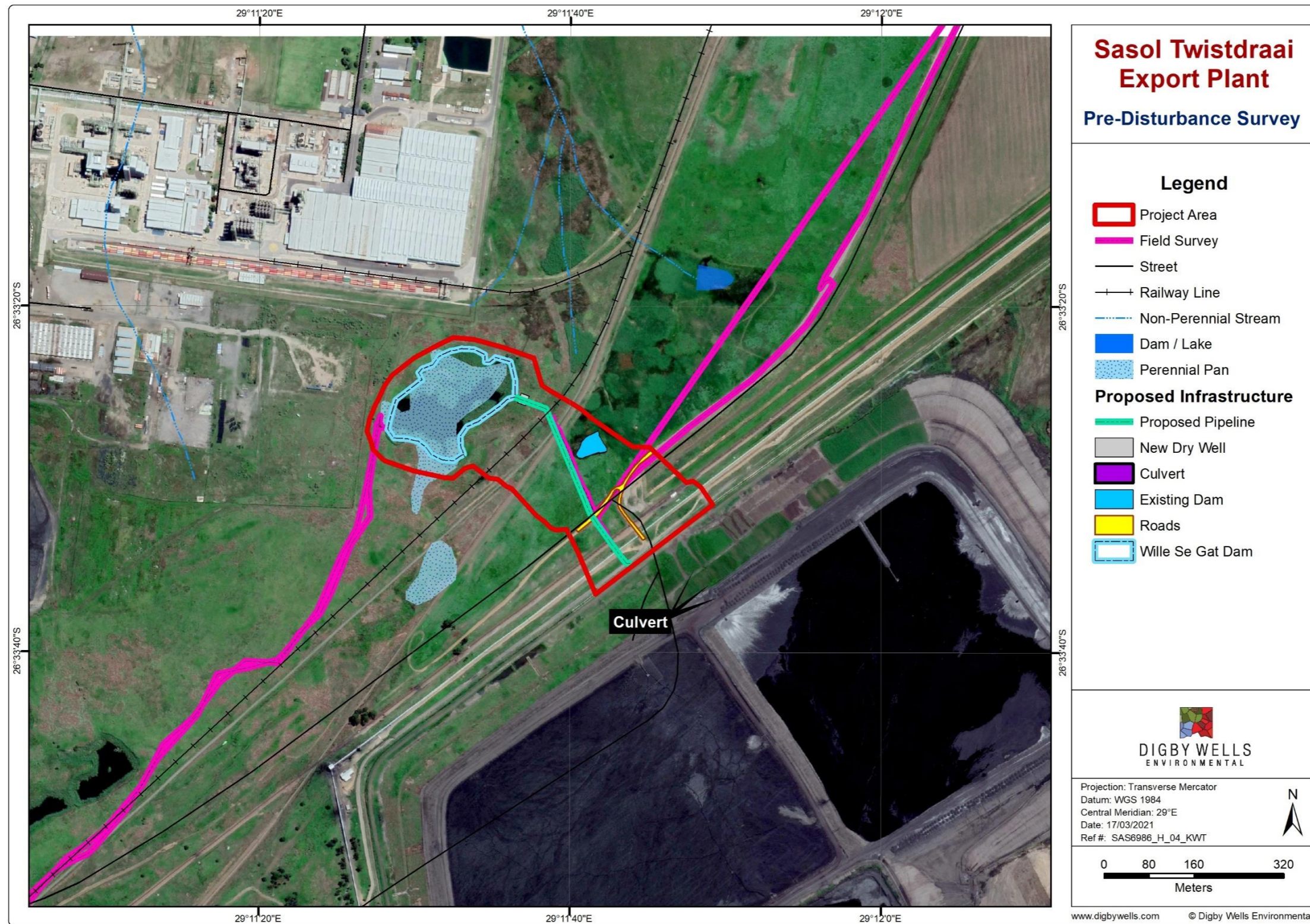
3.2.2. Primary Data Collection

Shannon Hardwick undertook a pre-disturbance survey of the site-specific study area on 11 March 2021. The pre-disturbance survey focused on the area that was accessible and which was affected by the proposed pipeline and related infrastructure. The proposed Project area includes a wetland; the land area comprising this wetland could not be surveyed. The survey was predominantly pedestrian, but the existing gravel road was surveyed by vehicle.

The pre-disturbance survey was non-intrusive (i.e., no sampling was undertaken) with the aim to:

- Visually record the current state of the cultural landscape; and
- Record a representative sample of the visible, tangible heritage resources present within the development footprint area, site-specific study area and greater study area.

Identified heritage resources were recorded as waypoints using a handheld GPS device. The heritage resources were also recorded through written and photographic records. Plan 3 presents the results of the pre-disturbance survey.



Plan 3: Results of the Pre-disturbance Survey

3.3. Regional Cultural Heritage Baseline

Mpumalanga's geological history takes place over 3 600 million years (Johnson, et al., 2006; Groenewald & Groenewald, 2014). The province is underlain by valuable geological formations, both in terms of mineral and fossil wealth. Briefly, these comprise:

- The Karoo Supergroup;
- The Bushveld Complex; and
- Transvaal Supergroup.

The regional and local study areas comprise a part of the Highveld Coalfield, which extends across approximately 7 000 km². The Main Karoo Basin is the predominant geological feature to underlie this area. The Main Karoo Basin comprises the lithostratigraphic units associated with the Karoo Supergroup, which dates to the Late Carboniferous to Middle Jurassic periods (between ~320 and 145 million years ago [mya]).

Within the Karoo Supergroup, the sediments of the Ecca Group are the most paleontologically sensitive of the geological layers. The Ecca Group dates to the Permian Period and overlies the *Dwyka Formation*. The Ecca Group dates to the Permian Period and overlies the *Dwyka Formation*. The Ecca Group sediments are well-known for the wealth of plant fossils, characterised by assemblage of the *Glossopteris* flora (plant species which occur together and are typified by the dominant fossil leaves that belong to the glossopterid group). These layers also contain significant coal reserves (Groenewald & Groenewald, 2014).

Formations within the Ecca Group include:

- The *Pietermaritzburg Formation*, which rarely forms good outcrops and fossils are rare and difficult to find. This formation is of moderate palaeontological sensitivity;
- The *Vryheid Formation*, which is the main coal-producing formation in South Africa. This formation has produced a number of fossils, including extensive *Glossopteris* assemblages. Other fossils reported from this formation include: trace fossils, rare insects, possible conchostracans (bivalve crustaceans and shrimp clams, which are presently still extant), non-marine bivalves and fish scales; and
- The *Volksrust Formation*: monotonous sequence of grey shale. Fossils are significant but rare and include: temnospondyl amphibian remains, invertebrates and minor coal with plant remains, petrified wood and trace fossils assemblages (Groenewald & Groenewald, 2014).

The site-specific study area is associated with Karoo dolerites and the *Vryheid Formation* (Rubidge, 2008; Rubidge, 2013a; Rubidge, 2013b). The Karoo dolerites are intrusive diatremes³ classified as plutonic igneous rocks. These features include no fossiliferous

³ These formations are created when rising magma comes into contact with groundwater, which potentially results in gaseous explosions and a volcanic 'pipe' (diatreme).

material and their palaeo-sensitivity is negligible (Rubidge, 2013a; 2013b; SAHRA, 2013). The Karoo dolerite suite is therefore not considered further in this report.

The *Vryheid Formation* has a very-high palaeo-sensitivity (SAHRA, 2013) and is the primary potential fossil-bearing layer underlying the site-specific study area. The formation corresponds to the basal unit of the Ecca Group, which was deposited roughly 280 mya in a deltaic⁴ environment. Shales, sandstones, mudstones and coal feature all form part of this formation (Bamford, 2016).

Coal is formed through compression and heat alteration of plant matter. During the formation of coal, alteration happens to such an extent that potential plant fossil remains are no longer recognisable. The shales between the coal horizons, however, have the potential to preserve very good examples of plant fossils (Bamford, 2014; 2016). To a lesser extent, the sandstone surface outcrops may also preserve fossil plants. Common fossil plants that could be expected within the *Vryheid Formation* include *Glossopteris* leaves, roots and inflorescences; and *Calamites* stems. Coal deposits can potentially also include fossils of mammal-like reptiles and amphibians. These are however, rarely, if ever, preserved with plant fossils (Bamford, 2012; 2016).

Table 5: Archaeological periods in Mpumalanga, adapted from Esterhuysen & Smith (2007)

The Stone Age	Earlier Stone Age (ESA)	2 mya to 250 thousand years ago (kya)
	Middle Stone Age (MSA)	250 kya to 20 kya
	Later Stone Age (LSA)	20 kya to 500 CE (Common Era ⁵)
There appears to be a gap in the record in Mpumalanga between approximately 7000 and 2000 BCE.		
Farming Communities	Early Farming communities (EFC)	500 to 1400 CE
	Late Farming Communities (LFC)	1100 to 1800 CE
Historical Period⁶	-	1500 CE to 1850 (Behrens & Swanepoel, 2008)

The reviewed literature included no reports of archaeological material representing the ESA or EFC periods. As such, these will not be described further in this report. Figure 1 provides a

⁴ This occurs when lithologies are deposited onto an alluvial plain through river action.

⁵ Common Era (CE) refers to the same period as *Anno Domini* ("In the year of our Lord", referred to as AD); i.e. the time after the accepted year of the birth of Jesus Christ and which forms the basis of the Julian and Gregorian calendars. Years before this time are referred to as 'Before Christ' (BC) or, here, BCE (Before Common Era).

⁶ The author acknowledges that in southern Africa, especially in Mpumalanga, the last 500 years represents a formative period that is marked by enormous internal economic invention and political experimentation that shaped the cultural contours and categories of modern identities outside of European contact. This period is currently not well documented and is being explored through the 500 year initiative (Swanepoel, et al., 2008).

breakdown of the cultural heritage resources identified through the literature. The cultural landscape comprises of the historical built environment and burial grounds and graves, although the MSA, LSA and LFC periods are also represented. The reviewed literature also included references to palaeontologically significant material.

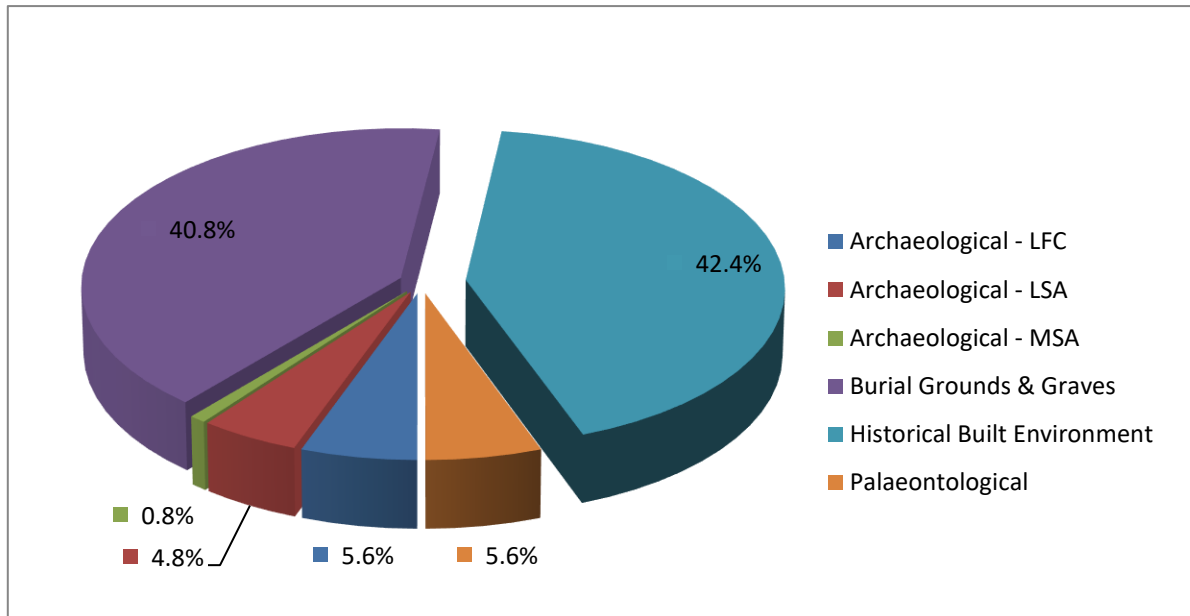


Figure 1: Cultural Heritage Resources identified within the Study Area under consideration

The Stone Age includes three periods defined by the production of lithic tools by various hominid species: the ESA, MSA and LSA. The MSA dates from approximately 250 to 20 kya. High proportions of minimally-modified blades (represented by the Levallois Technique) characterise the lithic industries of the early MSA (Clark, 1982). In general, however, the MSA is defined by blades and points which were produced using good-quality raw materials, the use of bone tools, ochre, beads and pendants (Deacon & Deacon, 1999). A single isolated artefact represents the MSA (du Piesanie, et al., 2013).

The LSA occurred between approximately 40 kya and the historical period. LSA lithic tools are specialised and specific tools are created for specific purposes (Mitchell, 2002). The inclusion of bone tools in the archaeological is also characteristic of this period. LSA sites commonly include diagnostic artefacts, such as microlithic scrapers and segments. In southern Africa, the LSA is closely associated with hunter-gatherer groups, such as the San. Due to the nomadic nature of LSA people, open sites are usually poorly preserved and difficult to identify. Regional hunter-gatherer is well documented (refer to Potgieter [1955]) for a description of the San occupying the Chrissiesmeer Lake District, which is approximately 100 km northeast of the Project area).

The LSA is further characterised by evidence of ritual practises and complex societies (Deacon & Deacon, 1999). This can be expressed through rock art. Within Mpumalanga, three

rock art painting traditions occur. These traditions are widely dispersed and are associated with particular cultural groups. These include:

- Fine line painting associated with autochthonous LSA hunter-gatherer groups. This tradition is the first and oldest tradition and produced using fine brushes, quills or sticks. These images are predominantly painted in red, white and black and, more rarely, in bichrome or polychrome. Images generally include realistic and proportionally-correct animals such as various antelope species, human figures and symbolic beings (Eastwood, et al., 2002);
- Finger paintings associated with the later arrival of pastoralists. This tradition was first described by Ben Smith and Sven Ouzman (Smith & Ouzman, 2004) and is typified by finger-painted geometric images. These include circles, finger lines, finger dots and handprints and are mostly created in red pigment. Images are sometimes created in red and white pigments and occasionally only in white. The tradition extends in linear bands following the proposed migration routes of the pastoralists from southern Angola and western Zambia to the southern Cape (Smith & Ouzman, 2004; Eastwood, et al., 2002; Smith & Zubieta, 2007); and
- Finger paintings associated with much later, possibly historic, farming communities. No expressions of this tradition are known to occur within the study area under consideration.

Within the larger study area, rock art represents the LSA period (Van Schalkwyk, 2003a; du Piesanie, et al., 2013) and accounts for 4.8% of the identified heritage resources. No other representations of the LSA were identified in the reviewed literature.

The Farming Community period correlates to the movements of Bantu-speaking agro-pastoralists into southern Africa. The results of the literature review demonstrate heritage resources associated only with the LFC. These records account for 5.6% of the identified heritage resources.

The LFC is represented by stonewalling or through secondary tangible indicators such as ceramics and evidence for domestic animals, including dung deposits and faunal remains. Within the larger study area, the LFC is represented by the following:

- Ash middens, which are most likely the remains of old cattle kraals (Van Schalkwyk, 2003b);
- Potsherds (du Piesanie, et al., 2013; Karodia, et al., 2013);
- A site with multiple components (du Piesanie, et al., 2013); and
- Stonewalling (Van Schalkwyk, 2003b; du Piesanie, et al., 2013; du Piesanie & Nel, 2018).

Stonewalling is the most visible indicator of LFC settlements. Several types of stonewalling have been described through decades of research and, within the larger study area, the most common is Type V. Maggs (1976) first described these settlements, which consist of many

primary enclosures grouped around a ring. The enclosures may be contiguous or linked by secondary walling to form a secondary enclosure. There is no surrounding perimeter wall, although there may be additional free-standing structures around the periphery of the settlement.

Huffman (2007) provides a reference for the possible distribution of ceramic facies within the regional study area. Table 6 provides an overview of these ceramic facies.

Table 6: Common ceramic facies found in Mpumalanga

Facies	Period	Key Characteristics
Uitkomst	1650 CE – 1820 CE	Stamped arcades, appliqué and blocks of parallel incisions, stamping and chord impressions
Rooiberg	1650 CE – 1750 CE	Stamped rim band, mixture of stamped and incised bands, arcades and triangles in the neck
Icon	1300 CE – 1500 CE	Multiple incised bands separated by colour and lip decorations on bowls
Madikwe	1500 CE – 1700 CE	Multiple bands of cord impressions, incisions, stabs and punctates separated by colour
Letaba	1600 CE – 1840 CE	Hatched bands on shoulder, below black and red triangles
Klingbeil	1000 CE – 1200 CE	Triangles in neck bordered with slashes, punctates on shoulder

The historical period is commonly regarded as exclusively associated with contact between Europeans and Bantu-speaking African groups, and consequent *written* records. This period, however, overlaps with the Farming Community period and the division between the two is in many ways artificial.

The period of transition between the LFC and the historical period, and the historical period itself, is characterised by the rise of power blocs with a range of political centralisation and waves of violent population displacements, especially on the Mpumalanga Highveld (Makhura, 2007). Processes of migration, population growth, climatic variation and trade to the east significantly impacted the Pedi, Koni and other groups in this area. Through their system of centralisation, where subordinate communities retained their local independence under some tributary obligations, the Pedi emerged through escalating conflict and violence as the strongest power in the north-east (Delius, et al., 2014).

A similar process played out in the Nguni area, resulting in large aggressive states emerging, including the Ndwandwe, the Mthethwa, the Swazi and the Zulu Kingdom (Delius, et al., 2014). The strife amongst the various groups culminated in the several battles, pillaging of settlements and movement of groups into the interior with tragic consequences for the Pedi

and Koni alike. Constant skirmishes and battles left the Mpumalanga Highveld vulnerable to intrusive groups such as the Swazi and *Voortrekkers*.

Voortrekkers moved into the Highveld in reaction to increased British liberalism and the resultant abolishment of slavery and pass laws (Delius & Cope, 2007; The Voortrekkers, 2014). The first *Voortrekkers* to move through the area were the Robert Schoon Party in 1836. The first permanent settlement established as Ohrigstad in 1845. During their movements into the interior (known as the *Groot Trek*, or Great Trek) the intruding *Voortrekkers* exacerbated the existing volatile landscape, frequently resulting in conflict with remnant groups of Pedi, Nduzundza Ndebele and Kopa.

Soon after settling in the area, the *Voortekkers* (now generally referred to as Boer farmers) discovered and exploited Highveld Coalfield deposits, initially only for domestic use. The discovery of gold on the Witwatersrand in 1886 increased the need for coal exponentially (Brodie, 2008; Pistorius, 2008a; 2008b). The increased demand for coal drove the commercial exploitation of the resource; until it was stunted with the onset of the South African War of 1899 – 1902 (*also referred to as the Second Anglo-Boer War*).

The South African War officially started on 9 October 1899 as a result of tensions and conflicting political agendas between the Boers and the British. Regionally, there were two notable battles associated with the South African War, namely the Battles of Lake Chrissie and Bakenlaagte on 6 February and 30 October 1901 respectively (Delius & Cope, 2007; von der Heyde, 2013). No battlefields were identified in proximity to the Project area.

Following the end of the South African War, activities within the regional study area comprised mostly of agriculture and increased coal mining. Several small towns were proclaimed within the regional study area to service local inhabitants and the newly-established coal mining industry.

The town of Secunda is relatively young and was established in the 1970s. The establishment of the town is intrinsically linked with the history of Sasol, as the town was established to service their second extraction refinery after Sasol 1 at Sasolburg. The name of the town reflects this, as it is derived from the Latin *secundus* meaning 'second' (Schirmer, 2007).

The historical period is represented in the regional study area by:

- Burial grounds and graves, which range in size from single graves to approximately one hundred graves (Van Schalkwyk, 1998; 2002; 2003a; 2003b; Van Schalkwyk & Moifatswane, 2003; Fourie & van der Walt, 2007; Pistorius, 2011; du Piesanie, et al., 2013; Karodia, et al., 2013; Pelser, 2013a; 2013b; Higgitt & Karodia Khan, 2014; du Piesanie & Nel, 2016; 2018); and
- Historical buildings which include structural remains and the remains of *werwe* (farmsteads) (Van Schalkwyk, 1998; Van Schalkwyk & Moifatswane, 2003; Fourie & van der Walt, 2007; Pistorius, 2011; du Piesanie, et al., 2013; Karodia, et al., 2013; Pelser, 2013a; 2013b; Higgitt & Karodia Khan, 2014; du Piesanie & Nel 2016, 2018).

3.4. Results of the Pre-disturbance Survey

Shannon Hardwick undertook a pre-disturbance survey of the site-specific study area on 11 March 2021. The pre-disturbance survey focused on the area that was accessible and which will be affected by the proposed pipeline; the survey excluded the area comprising the wetland adjacent to Wollie se Gat.

The survey was recorded as GPS tracks and identified heritage resources were marked as waypoints. Identified heritage resources were also recorded through written notes and photographs. The GPS data are provided in Plan 3.

The following sections describe the observations made during the survey and the outcomes of the survey.

3.4.1. Existing Environment

The existing environment comprises the Wollie se Gat quarry and the adjacent wetland. The area surrounding these features has been extensively disturbed by anthropogenic activity associated with the TEP and other operations within the Sasol Secunda secondary area. These disturbances include the coal discard disposal facility, culverts, railway lines, the existing gravel road and coal conveyors to transport the coal to the TEP for processing.

At the time of the pre-disturbance survey, much of the area earmarked for the pipeline had been cleared. TEP's contractor had cleared the area to investigate for underlying pipelines and other infrastructure to confirm the suitability of the area for the pipeline. Figure 2 presents an overview of the site-specific study area at the time of the pre-disturbance survey.



Figure 2: Results of the Pre-disturbance Survey showing the Existing Environment

3.4.2. Newly-identified Heritage Resources

No heritage resources were identified during the pre-disturbance survey. This is likely due to the history of disturbance within the site-specific study area as well as the presence of the wetland, which comprises a large portion of the site-specific study area.

The pre-disturbance survey was led by two representatives of TEP. Neither was aware of any heritage resources in proximity to the Project area.

4. Assessment process

Table 7 summarises the impact assessment processes that are currently being conducted for the proposed project.

Table 7: Current assessment processes

Legislation (e.g., NEMA, MPRDA)	Current phase of assessment process (e.g., Scoping, EIA)	Authorities receiving information	Capacity of Authorities
NEMA	BA Process	Department of Mineral Resources and Energy (DMRE) Mpumalanga	Licencing
NHRA	NID & RfE	SAHRA	Commenting
	NID & RfE	MPHRA	Noting
National Water Act, 1998 (Act No. 36 of 1998) (NWA)	General Authorisation (GA) and Integrated Water Use Licence Application (IWULA) Process	Department of Water and Sanitation (DWS): Gauteng	Licencing

These assessments are required in terms of legislated and / or regulated activities outlined in Sections 4.1 to 4.3 below.

4.1. NHRA Section 38(1) activities

The proposed development will include the following activities listed in Section 38(1) of the NHRA, which generally require heritage assessments be undertaken.

Table 8: NHRA Section 38 triggers

NHRA Section 38 (1) Activities / Triggers		Summary description (e.g., 500 m conveyor belt, open cast pit)
<input checked="" type="checkbox"/>	a Any linear development or barrier >300 m	The proposed pipeline will measure 380 m. The length of the road upgrade will be approximately 2 km.
<input type="checkbox"/>	b Any bridge or similar structure >50 m	
<input type="checkbox"/>	c Any development or activity that will change the character of a site:	
<input checked="" type="checkbox"/>	i $\geq 5\ 000\text{m}^2$ in extent	The proposed Project activities will extend over 0.5 ha in total but will not change the character of the site.
<input type="checkbox"/>	ii Involving ≥ 3 existing erven/ subdivisions	
<input type="checkbox"/>	iii Involving ≥ 3 or more erven/ divisions consolidated within past 5 years.	
<input type="checkbox"/>	d Rezoning of a site $\geq 10\ 000\text{m}^2$ in extent.	

		NHRA Section 38 (1) Activities / Triggers	Summary description (e.g., 500 m conveyor belt, open cast pit)
<input type="checkbox"/>	e	Other triggers, e.g.: in terms of other legislation, (i.e.: National Environment Management Act, etc.)	NEMA

4.2. EIA Regulations listed activities

Table 9 presents the Listed Activities included in the EIA Regulations (2014) as amended triggered by the proposed Project and which generally require impact assessments.

Table 9: Identified listed activities

NEMA Activity No.	NHRA Trigger	Description	Expected duration/phase
Listing Notice 1 Activity 19	38(1)(e)	<p><i>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</i></p> <p><i>but excluding where such infilling, depositing, dredging, excavation, removal or moving—</i></p> <ul style="list-style-type: none"> <i>a. will occur behind a development setback;</i> <i>b. is for maintenance purposes undertaken in accordance with a maintenance management plan;</i> <i>c. falls within the ambit of activity 21 in this Notice, in which case that activity applies;</i> <i>d. occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</i> <i>e. where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</i> 	Construction
Listing Notice 1 Activity 27	38(1)(e)	<p><i>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—</i></p> <ul style="list-style-type: none"> <i>(i) the undertaking of a linear activity; or</i> <i>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</i> 	Construction

4.3. Identified and known heritage resources and potential impacts

Certain categories of heritage resource, if existing and identified, generally require heritage assessments to be completed before any development may take place. These categories may be formally or generally protected in terms of the NHRA. Table 10 presents an overview of such heritage resources identified within the Project area.

Table 10: Identified heritage resources in terms of Section 3 of the NHRA

	Section	Description
<input checked="" type="checkbox"/>	3(2)(a)	Places, buildings, structures and equipment of cultural significance
		Description of resource: the historical built environment constitutes a significant portion of the cultural landscape. No such heritage resources have been identified within the Project area at this stage.
		Potential impact: None identified.
<input type="checkbox"/>	3(2)(b)	Places to which oral traditions are attached or which are associated with living heritage
		Description of resource: None identified
		Potential impact: None
<input type="checkbox"/>	3(2)(c)	Historical settlements and townscapes
		Description of resource: None identified
		Potential impact: None
<input type="checkbox"/>	3(2)(d)	Landscapes and natural features of cultural significance
		Description of resource: None identified
		Potential impact: None
<input type="checkbox"/>	3(2)(e)	Geological resources of scientific or cultural importance
		Description of resource: The regional Project area is underlain by geological strata of very high palaeosensitivity, specifically the <i>Vryheid Formation</i> . However, the site-specific study area is underlain by geological strata of negligible palaeosensitivity.
		Potential impact: No impact identified. No outcrops of palaeontologically sensitive material were identified and the pipeline is unlikely to reach depths necessary to impact the palaeosensitive material.
<input checked="" type="checkbox"/>	3(2)(f)	Archaeology and/or palaeontology (Including archaeological sites and material, fossils, rock art, battlefields & wrecks)
		Description of resource: Archaeological resources contribute to the cultural landscape. No such heritage resources have been identified within the Project area at this stage.
		Potential impact: None identified.

	Section	Description
<input checked="" type="checkbox"/>	3(2)(g)	Graves and burial grounds (e.g., ancestral graves, graves of victims of conflict, historical graves & cemeteries)
		Description of resource: Burial grounds and graves constitute a significant portion of the cultural landscape. No such heritage resources have been identified within the Project area at this stage.
		Potential impact: None identified.
<input type="checkbox"/>	3(2)(h)	Other human remains
		Description of resource: None identified
		Potential impact: None
<input type="checkbox"/>	3(2)(i)	Sites of significance relating to the history of slavery in South Africa
		Description of resource: None identified
		Potential impact: None
<input type="checkbox"/>	3(2)(j)	Movable objects
		Description of resource: None identified
		Potential impact: None

5. Recommendation

Table 11 presents a summary and motivation of the specialist recommendations.

Table 11: Specialist heritage recommendations

Is a Heritage Impact Assessment required?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<p>If NO, provide motivation:</p> <p>TEP intend to construct a pipeline between Wollie se Gat and the coal discard disposal facility to abstract water from the quarry and return this water to the trenches and then the RWD for re-use in the processes. The proposed Project aims to minimise or avoid the impacts to water quality in the adjacent wetland caused by Wollie se Gat and aims to have an overall positive impact on the surrounding environment.</p> <p>A baseline description as presented in Section 3 above demonstrates that the greater study area comprises a cultural landscape that is associated predominantly with burial grounds, graves and the historical built environment. Burial grounds and graves carry a very high significance and much of the archaeology in the regional area is of low significance as determined in heritage studies completed previously.</p> <p>Shannon Hardwick completed a pedestrian pre-disturbance survey of the proposed pipeline on 11 March 2021. The aim of this survey was to identify any tangible heritage resources that may be impacted upon by project-related activities. No heritage resources were identified during the survey.</p>		

This is likely due to the history of disturbance in the site-specific study area through the construction of the TEP and existing infrastructure.

Considering the cultural landscape baseline, review of heritage studies completed within the general study area, the results of the pre-disturbance survey and understanding of the Project, Digby Wells is of the opinion that no further heritage assessment in terms of Section 38 of the NHRA is required.

Digby Wells therefore submits a RfE as part of this NID for the proposed decommissioning of mine infrastructure and the rehabilitation of a quarry, from further heritage assessments, including a specialised Palaeontological Impact Assessment (PIA). This RfE is on condition that:

- The proponent develops a project-specific Chance Find Protocol (CFP) and Fossil Finds Procedure (FFP) for implementation during construction activities, should such protocols not be included in the EMPr already; and
- Sasol Mining immediately informs SAHRA of any chance finds identified and enlists the services of a qualified and accredited archaeologist and/or palaeontologist to assess and recommend appropriate mitigation measures as required.

If YES, provide suggested components that may be required or undertaken during HIA.

<input type="checkbox"/>	Archaeology	<input type="checkbox"/>	Architecture
<input type="checkbox"/>	Built Environment	<input type="checkbox"/>	Burial Grounds and Graves
<input type="checkbox"/>	Palaeontology	<input type="checkbox"/>	Public Participation
<input type="checkbox"/>	Townscapes	<input type="checkbox"/>	Visual Impact
<input type="checkbox"/>	Other:		

Recommendation made by:

Name: Shannon Hardwick

Name: Justin du Piesanie

Capacity: HRM Consultant

Capacity: Divisional Manager: Social and Heritage Services

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Appendix A: Specialist CV