



DIGBY WELLS

ENVIRONMENTAL

To:	South African Heritage Resources Agency	Date:	21 January 2019
From:	Digby Wells Environmental	Proj #:	SAS5175
RE:	Addendum to the Notification of Intent to Develop, Case ID: 12401		

1 Introduction

Sasol Mining (Pty) Ltd (hereinafter Sasol) appointed Digby Wells Environmental (hereinafter Digby Wells) to undertake a Basic Assessment (BA) process for the proposed construction of a conveyor belt at the Sasol Sigma Colliery: 3 Shaft Coal-handling Complex (hereinafter referred to as “3 Shaft”) near Sasolburg, Free State. To this end, Digby Wells compiled a Notification of Intent to Develop (NID) and submitted¹ this to the South African Heritage Resources Agency (SAHRA) and Heritage Free State (HFS), together with a Request for Exemption (RfE). SAHRA issued interim comment² on the NID and RfE, requiring the Basic Assessment Report (BAR) before any further adjudication.

Subsequent to the issuing of interim comment by SAHRA, Sasol expanded the project to include an amendment of the existing Environmental Management Programme (EMPr) for the Sigma Colliery: Mooikraal operational shaft (hereinafter referred to as “Mooikraal”) to the Scope of Work, to promote compliance with Regulation 31 of the Environmental Impact Assessment Regulations, 2014 (as amended) (EIA Regulations, 2014) in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). This document constitutes an addendum to the NID and RfE submitted to SAHRA, and serves to notify SAHRA and HFS of the updated project and activities proposed by Sasol.

2 Project details

In addition to the proposed construction of a new conveyor belt and relocation of the crusher facility at 3 Shaft, Sasol now intends to amend the existing Mooikraal EMPr. Digby Wells has incorporated the Regulation 31 Amendment Process required in obtaining Environmental Authorisation (EA) into the aforementioned BA process.

¹ Case ID 12401, accessible at: <https://www.sahra.org.za/sahris/cases/sas5175-mooikraal-conveyor>

² Dated 25 May 2018, accessible at: <https://www.sahra.org.za/sahris/node/503188>

The current Project includes the following activities:

- Demolition of the existing conveyor belt, crushing facility and coal bunker which is currently situated within a wetland at the 3 Shaft (primary plant);
- Relocation and reconstruction of the primary plant (crusher facility) on the concreted stockpile area (to remain within the 3 Shaft footprint³);
- Destruction of the existing conveyor belt and installation of a new conveyor belt⁴ from the MK8 transfer point to the stockpile area which will traverse a delineated wetland (within the 3 Shaft footprint);
- Section 31 Amendment to incorporate the following into one consolidated Mooikraal EMP⁵:
 - Drilling of exploration, monitoring and rescue boreholes within the approved Mooikraal Mining Right area and 3 Shaft;
 - Construction of access roads associated with the above-mentioned boreholes and which exceed 300 m in length;
 - Incorporate all activities at Mooikraal, Kleinvlei, 3 Shaft and along both servitudes into the EMP;
 - Incorporate the 7 and 10 Ml/day pipeline EA into the EMP; and
 - Incorporate all properties located within Mooikraal, Kleinvlei, 3 Shaft and along both servitudes into the EMP.
- Upgrades to the existing stormwater management system at 3 Shaft⁶, which will include the construction of a silt trap; and
- Rehabilitation of the wetland identified at 3 Shaft⁷.

This document will focus primarily on the rescue, exploration and monitoring boreholes mentioned above. Plan 1 presents the regional and local setting, showing the location of both Mooikraal and 3 Shaft. Plan 2 illustrates the infrastructure layout proposed for 3 Shaft as well as the existing infrastructure layout.

³ This area is considered to fall within the pre-disturbance survey undertaken at 3 Shaft for the proposed conveyor and, as such, has not been re-assessed.

⁴ These activities have been assessed in the NID and RfE previously submitted to SAHRA and HFS and as such will not be considered further in this addendum.

⁵ These activities have been authorised through a separate process and will therefore not be considered further in this addendum

⁶ This area is considered to fall within the pre-disturbance survey undertaken at 3 Shaft for the proposed conveyor and, as such, has not been re-assessed.

⁷ This wetland is not expected to include heritage resources, but was included in the pre-disturbance survey for the 3 Shaft conveyor and was not re-assessed.

2.1 EIA Regulations listed activities

Table 2-1 presents activities listed in the EIA Regulations, 2014 (as amended) (Government Notice Regulations [GN R] 982) as amended by GN R 326. These activities generally require impact assessments. The activities presented below are triggered by the components of the Project additional to those included in the submitted NID and RfE.

Table 2-1: Identified listed activities and NHRA Section 38(1) activities

NEMA Activity No.	NHRA Trigger	Description	Expected duration/phase
-	38(1)(a)	Any linear development or barrier >300 m	Operation ⁸
Listing Notice 1 Activity 27	38(1)(e)	The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.	Operation ⁸
Listing Notice 1 Activity 45	38(1)(e)	The expansion of infrastructure for the bulk transportation of water or stormwater where the existing infrastructure: (i) Has an internal diameter of 0.36 m or more; (ii) Has a peak throughput of 120 litres per second or more; and: (a) Where the facility or infrastructure is expanded by more than 1 000 m in length; or (b) Where the throughput capacity of the facility or infrastructure will be increased by 10% or more.	Construction and operation
Listing Notice 1 Activity 46	38(1)(e)	The expansion of infrastructure for the bulk transportation of water sewage, effluent, process water, waste water, return water, industrial discharge or slimes where the existing infrastructure: (i) Has an internal diameter of 0.36 m or more; (ii) Has a peak throughput of 120 litres per second or more; and: (a) Where the facility or infrastructure is expanded by more than 1 000 m in length; or (b) Where the throughput capacity of the facility or infrastructure will be increased by 10% or more.	Construction and operation

⁸ This activity applies to the establishment and drilling of the rescue, monitoring and exploration boreholes. These boreholes will be established piecemeal as the underground mining operations progress and is therefore considered in the operational phase of the Project.

3 Constraints and Limitations

Digby Wells encountered constraints and limitations during the compilation of this addendum, as shown in Table 3-1.

Table 3-1: Constraints and Limitations

Description	Consequence
Sasol had not finalised the positions of the proposed boreholes prior to the pre-disturbance survey	The pre-disturbance survey did not focus on a specified development footprint, but rather a general survey of the site-specific study area as far as possible, focusing on areas most affected by Project activities.
Access could not be gained to certain properties at the time of the pre-disturbance survey. These properties include: <ul style="list-style-type: none"> ■ Mooikraal 355 (Remainder); ■ MG No. 1, Sub-division 2 of Ailette 351; and ■ Ponner 259 	These properties were not subject to a physical pre-disturbance survey by the heritage specialist. Digby Wells assumes that these properties were subject to previous assessments through the previous EA processes ⁹ . However, Sasol personnel were aware of heritage resources within this area (refer to Section 5.2).
Results from previously-completed heritage assessments that may have formed part of the Project area were not verified	It is assumed the previously recorded heritage resources are accurate and true.
No historical layering was undertaken to verify the relative ages of structures identified in the pre-disturbance survey	Digby Wells assumes the historical structures are older than 60 years and are therefore generally protected. Should Sasol foresee any alteration or destruction of these structures, the age must be verified prior to these activities and a Section 34 Permit Application process must be followed if required.

4 Pre-disturbance Survey

Shannon Hardwick undertook a primarily pedestrian pre-disturbance survey of the planned and completed undermining areas within the Mooikraal Mining Right Area (MRA) on 29 to 31 August 2018. The objectives of the survey were to:

- Visually record the current state of the cultural landscape; and

⁹ Digby Wells undertook the Heritage Resources Management (HRM) process for the proposed pipelines in October 2014. (Case ID: 6525). Refer to the NID for a list of the properties surveyed and the heritage resources identified.

- Record a representative sample of visible, tangible heritage resources present within the site-specific and local study areas.

Identified heritage resources were recorded as waypoints using a handheld GPS device and were documented through written and photographic records. The survey was recorded as track logs. The survey tracks and waypoints recorded through the survey are illustrated in Plan 3.

4.1 Informal consultation

The landowners on farm Melkplaats 103 informed the heritage specialist of historic drilling that had taken place on their farm (refer to STE-002 A, B and C in Table 5-1). Mr Oosthuizen indicated the position of three of four of these drilling sites. No tangible surface markers remain. Mr Oosthuizen also pointed out the location of BGG-004 and said he was not aware of any further heritage resources on the property.

During discussions requesting access to the various farms, no other landowners reported heritage resources on their properties. No other informal or formal consultation was undertaken by the heritage specialist.

4.2 Site naming

Sites identified during the pre-disturbance survey have been named according to the relevant period or feature code and site number, for example: BGG-001. Table 4-1 lists the relevant periods and features and the codes used in the addendum.

Table 4-1: Feature and period codes of identified

Period or Feature	Code
Burial ground or grave	BGG
Structure	STE
Werf or farmstead	WF

5 Results

5.1 Existing environment

The surveyed properties were associated with agricultural activities, including cultivation of corn and cow husbandry, as well as activities and infrastructure associated with Mooikraal. The Project area is considered disturbed by anthropogenic activities. The surface was heavily disturbed through animal activity, such as mongoose burrows. Figure 5-1 presents an overview of the existing environment at Mooikraal.



Figure 5-1: Photographs illustrating the current environment

5.2 Identified heritage resources

Table 5-1 presents a list of the heritage resources identified during the pre-disturbance survey. Figure 5-2 presents photographs of some of these heritage resources.

Table 5-1: Heritage Resources identified through the pre-disturbance survey¹⁰

Site Name	Description
STE-001	Rubble in the shape of a polygon, which may represent a historical structure. The rubble is surrounded by very large exotic trees which have been felled, and some glass of an unknown age was noted on site. Graves occur nearby. It is likely this structure was older than 60 years.
BGG-001	Potential unmarked graves or structural remains. A small tree has grown over this heritage resource and so sets of straight, parallel brick lines are visible, with no headstones or other surface indicators visible.
BGG-002	Burial ground demarcated by a rusted and damaged wire fence, which includes a decorative gate. Five graves are visible, of which four have headstones. One grave is a double grave (which appears to be a mother and a daughter, dating to 1921 and belonging to the Scholtz family) and one may be a child grave. Seven exotic trees have been planted in a row along the fence.
BGG-003	Burial ground with a fence running through. This burial ground is very close to BGG-001. In total, this burial ground includes 32 visible graves, but there may be more. On the same side of the fence as BGG-001, nine graves have headstones, which date between 1952 and 1995. The following surnames were legible: Selikane and Nabileyo. Many of the headstones appear to have been painted silver. On the either side of the fence, one grave has a headstone, but this has broken off and is not legible. The other graves are demarcated by stone piles. Grave goods, including enamel mugs, seashells, decorative ceramic items, jars and shells are present.
WF-001	Abandoned werf with many buildings in various states of disrepair, including a barn. Age of the werf is not known.
STE-002 A, B and C	Three of four points where historical drilling took place to establish boreholes. One of these holes has since been closed up. The other two points are in areas that are now cultivated. Mr. Oosthuizen could not remember where the fourth point was.
BGG-004	At least three, but possibly five, graves demarcated by stone and soil piles in an agricultural field near the fence line. These graves have no headstones.
BGG-005	Single grave with a marble headstone and a concrete slab. The headstone has fallen over but is still legible. The surname on the headstone is van der Westhuizen and the date is 1939. This grave is adjacent to foundations of what was a square sub-divided structure approximately 10 m by 10 m.

¹⁰ In accordance with new SAHRA procedures, the GPS co-ordinates of these heritage resources have not been included in documents available to the public.

Site Name	Description
WF-002	Abandoned werf of unknown age. The werf includes four reservoirs, a barn, grain silo and several outbuildings. The werf is close to the current farm house.
BGG-006	Single grave in a field. The grave had a granite headstone and fittings, but no additional information is available because the field was fenced off.
BGG-007	Burial ground including twelve visible graves. The burial ground is demarcated by a well-kept fence and damaged gate. Two of the graves have granite headstones and fittings, both of which belong to children of the Els family. These graves are dated to 1929 and 1976. All other graves are demarcated by stone and soil piles and have upright stones as headstones.
STE-003	Abandoned building which appears to be made of sandstone inside a copse of exotic trees. Age of structure is unknown. Corrugated tin roof still present and one electrical fitting. Walls are plastered and painted and are covered in graffiti. Only one outside door remains, all other doors have been removed.
BGG-008	Burial grounds next to the road and next to a field. Not demarcated. Burial ground includes 34 visible burials, but there may be more. Half of these graves have headstones, which include granite or cement. Grave fittings include granite, brick, cement edging or slabs and ceramic tiles. The other graves are demarcated by stone and soil piles. Grave goods include enamel mugs, glasses and bottles. Thirteen graves have fenced off in various ways. The graves date between 1980 and 2002. Legible surnames include: Letoane (three graves fenced off from the other graves), Mofokeng, Tsime, Tsimong, Pani, Podile, Nkuna and Rafube.
WF-003	Werf including the farmhouse, barn, shed, reservoir, dam and windmill. Appears to be historical. The farmhouse appears to have several building phases and may have originally been made of sandstone. The doors, glass and roof is missing, but the wooden lintels remain. The barn and shed have retained their roofs. The shed has since been silted up with sand (animal activity may have contributed, as there is a burrow inside the shed and many porcupine quills around). The barn is being used as storage. The werf is surrounded by large exotic trees, including pine.
WF-004	Abandoned werf, including four reservoirs, a barn (or abattoir), an additional barn (or chicken house) and an outbuilding. The chicken house is in a state of disrepair and the roof is collapsing. The outbuilding connected to the chicken house has lost its roof. The roof is intact on the other barn, which is used for storage (animal feed and tyres). Some of the buildings of this werf are visually similar to WF-003 and may be related.
BGG-009	Burial ground demarcated by a fence. The corners include three large fir trees and the gate. The burial ground includes five visible graves, of which four have headstones. Two headstones are legible and date to 1957 and 1958. These belong to the De Kock and Malan families. The other two headstones are partially visible and read De Kock and Oosthiuz[en]. No dates were visible.



Figure 5-2: Photographs illustrating heritage resources identified in the Project area
A.) STE-001; B.) BGG-002; C.) STE-003; D.) Farmhouse at WF-003; E.) Outbuilding attached to chicken house at WF-004; and F.) Three tall exotics marking BGG-009

During the pre-disturbance survey, the heritage specialist could not access the following farms: Mooikraal 355 (Remainder), MG No. 1, Sub-division 2 of Ailette 351 and Ponner 259. The Project survey manager and draughtsman were aware of heritage resources on these properties and, subsequent to the pre-disturbance survey, provided the geographical locations of these resources. Table 5-2 provides a summary of these heritage resources¹¹. Plan 3 includes these heritage resources, which have been highlighted in red to distinguish these heritage resources from those identified by the heritage specialist.

Table 5-2: Heritage resources identified by Sasol Personnel

Farm	Heritage Resources
Mooikraal 355 (Remainder)	Gravesite 2 and Abandoned Dwelling 2
MG No. 1, Sub-division 2 of Ailette 351	Gravesite 1 and Abandoned Dwelling 1
Ponner 259	No heritage resources identified

The Digby Wells heritage specialist did not ground-truth these heritage resources.

5.3 Potential impacts

Any impacts associated with Project activities for which EA has already been authorised are assumed to have been adequately assessed and are therefore not considered here. This includes the proposed undermining projects, pipelines and activities associated with the conveyor discussed in the original NID and RfE.

The Project includes the drilling of rescue, exploration and monitoring boreholes. At the time of compilation, Sasol finalised the proposed distribution of monitoring boreholes. Table 5-3 presents an overview of the distances between known heritage resources and the nearest proposed boreholes. The layouts for the exploration boreholes are not yet available and it is envisaged that these will be developed throughout the LoM.

Table 5-3: Heritage resources and the distance from development

Site Name	Distance from development	Site Name	Distance from development
STE-001	> 1 km	WF-002	150 m
BGG-001	> 1 km	BGG-006	200 m
BGG-002	1 km	BGG-007	600 m
BGG-003	1 km	STE-003	600 m

¹¹ As with the above, the GPS co-ordinates of these heritage resources have not been included in documents available to the public in accordance with SAHRA procedures.

Site Name	Distance from development	Site Name	Distance from development
WF-001	700 m	BGG-008	100 m
STE-002 A, B and C	400m to 1km	WF-003	200 m
BGG-004	> 1 km	WF-004	300 m
BGG-005	200 m	BGG-009	350 m

All identified heritage resources are in excess of 100 m from proposed monitoring boreholes, therefore no direct impacts to heritage resources from this infrastructure are envisaged.

5.4 Proposed Mitigation Measures

The present Mooikraal EMPr (2014) does not consider heritage resources. No heritage monitoring plans or mitigation measures are stipulated. Digby Wells therefore recommends Sasol:

- Establish a 50 m no-go buffer zone around all identified heritage resources;
- Clearly demarcate the established buffer and place visible signage;
- No high-extraction mining must take place underneath the identified heritage resources due to the risks of negative impacts posed by the potential for pillar collapse resulting in subsidence. Digby Wells recommends Sasol undertakes bord-and-pillar methodologies in these areas;
- Develop a project-specific Chance Finds Protocol (CFP) and Fossil Finds Protocol (FFP) for implementation; and
- Immediately inform SAHRA of any newly-identified heritage resources identified throughout the Project life, and enlist the services of a qualified and accredited heritage practitioner to assess the find and recommend appropriate management and/or mitigation measures.

6 Conclusion

Shannon Hardwick undertook a pedestrian pre-disturbance survey of the proposed development area between 29 and 31 August 2018 to identify any tangible heritage resources that may be impacted upon by project-related activities. Several heritage resources were recorded within the site-specific study area (refer to Table 5-1). Sasol personnel provided co-ordinates of additional heritage resources on properties not surveyed by the heritage specialist.

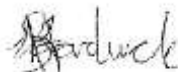
This notwithstanding, considering the cultural landscape baseline, review of previously completed heritage studies within the general study area, and the results of the pre-

disturbance survey, Digby Wells is of the opinion that no further heritage assessment in terms of Section 38 of the NHRA is required on condition that:

- The proposed mitigation measures described in Section 5.4 are implemented as required;
- Identified heritage resources must be considered in the design footprints of the exploration boreholes, or should the layout of the proposed boreholes change in any way. The 50 m no-go buffer zone (refer to Section 5.4) must be respected in all new siting design;
- Where Sasol foresees any alteration to or destruction of historical structures, the age of the affected historical structure(s) must be verified. Where such buildings are afforded general protection under Section 34 of the NHRA, Sasol must undergo the permit application process before such an activity can commence;
- Sasol develops a project-specific CFP and FFP for implementation prior to the commencement of Project-activities described in Section 2; and
- Sasol immediately informs SAHRA of any chance finds identified and enlists the services of a qualified and accredited archaeologist to assess and recommend appropriate mitigation measures.

Where these conditions are adhered to, Digby Wells requests the additional scope considered in this addendum be exempt from further heritage assessment in terms of Section 38 of the NHRA.

Regards,














Shannon Hardwick
Assistant HRM Consultant



Justin du Piesanie
Divisional Manager: Social and Heritage Services

Sasol Mooikraal 3 Regional Setting

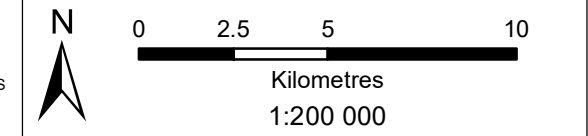
Legend

-  3 Shaft Area
-  Mooikraal Mining Right Boundary
-  Conveyor Belt
-  Major Town
-  Other Town
-  Settlement
-  Main Road
-  National Road
-  Perennial Stream
-  Local Municipality Boundary
-  Provincial Boundary



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Projection: Transverse Mercator Ref #: kam.SAS5175.201804.070
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 27°E Date: 08/10/2018



Sasol Mooikraal 3 Proposed Infrastructure Layout

Legend

- 3 Shaft Area
- Mooikraal Mining Right Boundary
- Mooikraal Colliery
- Conveyor Belt
- Settlement
- Arterial / National Route
- Main Road
- Minor Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Non-Perennial Pan
- Perennial Pan
- Wetland

Proposed Infrastructure

- Proposed Conveyor Belt
- Proposed Primary Plant Location

Existing Infrastructure

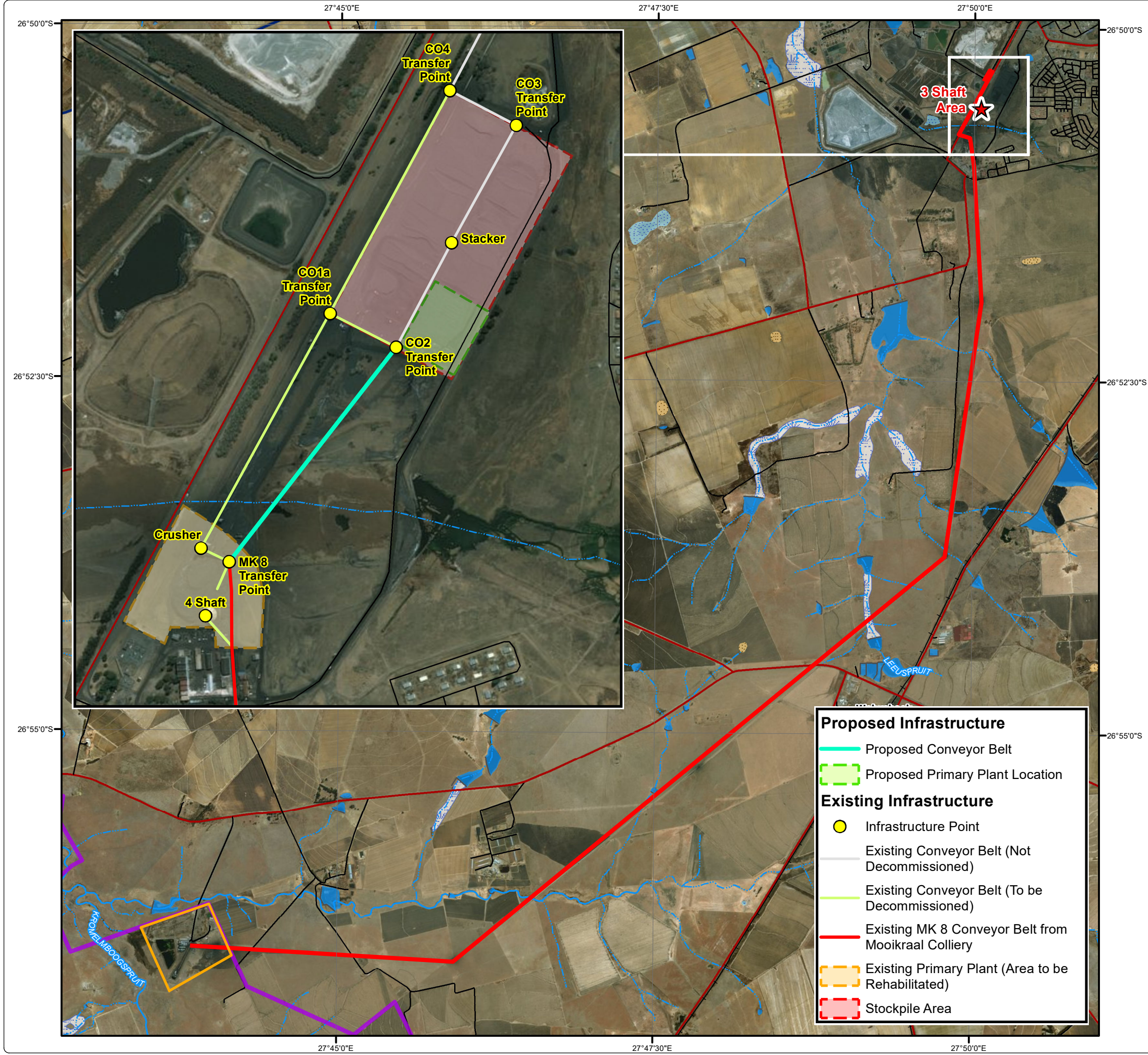
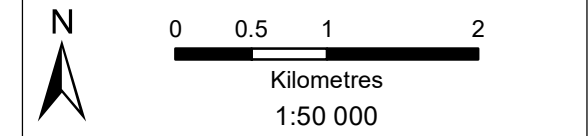
- Infrastructure Point
- Existing Conveyor Belt (Not Decommissioned)
- Existing Conveyor Belt (To be Decommissioned)
- Existing MK 8 Conveyor Belt from Mooikraal Colliery
- Existing Primary Plant (Area to be Rehabilitated)
- Stockpile Area



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Projection: Transverse Mercator Ref #: kam.SAS5172.201805.124
 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 27°E Date: 08/10/2018



Sasol Mooikraal 3 Identified Resources & Survey Track Log

Legend

- 3 Shaft Area
- Identified Resources
- Additional Identified Resources
- Other Town
- Settlement
- Mooikraal Mining Right Boundary
- Conveyor Belt
- Survey Track Log
- Arterial / National Route
- Main Road
- Minor Road
- Railway Line
- Non-Perennial Stream
- Perennial Stream
- Dam Wall
- Dam / Lake
- Non-Perennial Pan
- Perennial Pan
- Wetland



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 Datum: WGS 1984 Revision Number: 1
 Central Meridian: 27°E Date: 08/10/2018

